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GEORGE H. SIMMONS, M.D., LL.D.

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TREATMENT OF CAUSALGIA

RESULTS OF INTRANEURAL INJECTION OF
60 PER CENT. ALCOHOL

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CHICAGO

AND

WESLEY GATEWOOD, M.D.

IOWA CITY

Causalgia is one of the most distressing complications or sequelae of peripheral nerve lesions. This syndrome, observed by Weir Mitchell during the Civil War, has as its predominant feature pain which is described as burning or throbbing in character and is often compared to the sensations produced by pin pricks, a red hot iron or an injury of the flesh. This pain, which never ceases, even at night, may be aggravated by any number of causes and finally becomes paroxysmal.

It is difficult to determine its frequency, for statistics concerning peripheral nerve lesions differ widely. This variation is probably due to differences of opinion regarding the type of case that should be regarded as causalgia. Varying degrees of pain are observed after peripheral nerve injuries, but only the intense paroxysmal type should be regarded as causalgia. Four cases of causalgia were noted among the 550 cases of peripheral nerve injuries which we observed at U. S. General Hospital No. 28. Three of these patients have been operated on and cured by intraneural injections of 60 per cent. alcohol. It is probable that the fourth patient, who is still under observation, will require this treatment.

Weir Mitchell believed the pain due to an ascending neuritis which might involve any injured nerve and gradually involve all the nerves of the extremity affected. It seems to have been demonstrated, however, as a result of surgical interference, that the median nerve is involved most frequently in causalgia affecting the upper extremity, and the internal popliteal in causalgia involving the lower extremity. When a lesion of the ulnar nerve is accompanied by intense pain, it is usually due to an associated lesion of the median nerve or to an injury of the brachial plexus affecting both ulnar and median nerves. Other nerves may be involved. In one of the cases observed by us pain persisted, although diminished in intensity, over the distribution of the long saphenous nerve after injection of the internal popliteal. The pain subsided completely after injection of the long saphenous nerve.

The pathology differs widely in different cases. Joyce has reported five cases, in one of which the

median nerve when freed from scar tissue appeared swollen and bluish gray, mottled with purple spots. A small neuroma, which was adherent to the biceps, was found on the nerve. In another patient who complained of severe pain in the foot when walking, sitting or lying down, but who had no paralysis or anesthesia, there was found on roentgenographic examination a small foreign body in the neighborhood of the sciatic nerve. When the operation was performed, the foreign body was found embedded in scar tissue just posterior to the nerve. Immediate and permanent relief of pain followed removal of the foreign body. Gosset found the median nerve only slightly affected in the operations performed by him to relieve causalgia affecting the hand. In one of the cases observed by us, the median and ulnar nerves were embedded in scar tissue, and the median nerve was definitely enlarged and indurated just above the antecubital fossa; in another, the internal popliteal nerve was surrounded by some adhesions which were not at all dense, and the long saphenous nerve, which was subsequently injected below the wound, appeared normal. In both of these cases, neurolysis had been previously performed but had given no relief. In the third case, the median nerve appeared injected and somewhat enlarged, but its consistency did not differ from that of a normal nerve.

REPORT OF CASES

CASE 1.—*Median and ulnar nerve embedded in scar tissue in the lower third of left arm. Median nerve enlarged and indurated just above the antecubital fossa. Previous neurolysis without relief.*

Private E. G., wounded at Château-Thierry, July 19, 1918, had been struck by a machine gun bullet in the left arm midway between the shoulder and the elbow. This produced a comminuted fracture of the humerus and a paralysis of the ulnar, median and musculospiral nerves. He gradually recovered from the musculospiral paralysis, but about ten days after the wound was received he experienced a burning pain in the hand which became paroxysmal in character. This pain was increased by any attempts at movement, by jarring of the bed, and by any quick, irregular movement of the body.

The patient was operated on at Camp Grant, Feb. 10, 1919. Neurolysis of the median and ulnar nerves was performed at this time. After liberation, the nerves were surrounded by a fat transplant. The brachial artery had evidently been injured, for when the operation was performed, no pulsation could be detected in it distal to the wound. The median nerve was described in the operative findings as being bound down beneath the biceps muscle and kinked by scar tissue. The internal cutaneous nerve was not involved.

When examined, April 15, the patient held the forearm flexed at an angle of 80 degrees, with the hand raised and the fingers extended. The fingers were delicate and the whole hand appeared atrophied when compared to the other hand.

The skin was dry, there being no perspiration. A furfuraeous scaling was noted especially on the dorsal surface. The skin on the dorsum was white and shiny while that on the palmar surface was pink, there being no marked difference over the median and ulnar distribution.

All motions of the flexor and extensor muscles were limited. This limitation of motion was probably due to fear of paroxysms of pain which were induced by any attempt at movement. Extreme flexion of the fingers was limited by fibrosis.

The patient complained of a continuous pain over the hand which was more intense over the distribution of the median nerve and was aggravated by almost any movement. Exposure to air or to dry heat, especially a hot atmosphere, also induced a paroxysm, to prevent which the patient usually wore a glove soaked in cold water. When the glove was not worn the patient went frequently to the cold water tap and let the water run on the hand in order to secure relief. He assumed postures to protect the hand, which was usually held up, the body being inclined toward the left.

The patient's mentality and disposition became affected by this aggravating pain. He avoided other patients in the ward and often would be gone for long periods of time, evidently being desirous of being left alone. At times he would be found curled up in bed with the arm bent up and motionless and with the body curved toward the affected hand.

April 17, the ulnar and median nerves were exposed in the lower third of the arm. They were embedded in scar tissue from which they were freed. The median nerve was then injected with a 60 per cent. alcohol solution.

The patient experienced almost immediate relief from the pain. Motion returned; and although there was considerable atrophy, there has been a progressive improvement in the hand and a marked improvement in the health of the patient.

CASE 2.—Causalgia of the left foot. Ulceration of the foot and leg resulting from maceration of the skin due to wrapping the leg with wet towels for weeks. Internal popliteal nerve surrounded by a small amount of scar tissue. Previous neurolysis without relief by fat transplant. Cure by alcohol injection of internal popliteal and long saphenous nerves.

S. H. T. received a machine gun bullet wound of the left thigh at Château-Thierry, July 28, 1918. The bullet entered the anteromedial surface of the thigh about 8 inches above the level of the knee joint and made its exit at the same level on the external surface posteriorly. Ever since the wound had been received, pain had been noted along the back of the leg and inner side of the ankle and foot.

An operation performed at Camp Grant, Feb. 11, 1919, revealed scar tissue surrounding the sciatic nerve which did not, however, cause any gross pathologic change in the nerve. Neurolysis by fat transplant was performed. In the history it was noted that an ice bag was applied, February 24, to relieve this pain.

The patient was admitted to U. S. General Hospital No. 28, March 19. He said that he had had no relief from the pain as a result of the operation. It was aggravated by hot applications and irritation of any kind, but was relieved by cold.

This patient presented a pitiful picture. He remained in bed all the time. The foot and leg were wrapped in a towel which was kept soaked with water. This had to be renewed frequently, for cold water relieved the pain. As a result of this continued application of a wet towel, the skin had become badly macerated, and several large ulcers had formed on the foot, and multiple small ones on the leg from the opening and the breaking down of blebs. Movements were preserved but were limited, for any attempt at movement induced a paroxysm of pain.

April 24, the sciatic nerve was exposed above the site of the previous operation and the internal popliteal nerve was injected with 60 per cent. alcohol. This was followed by almost immediate relief of pain over the distribution of this nerve, but some pain still persisted.

It was noted in the history that prior to the injection all movements controlled by muscles supplied by the sciatic nerve were present. After the injection, flexion of the toes was lost and inversion and plantar flexion of the foot were weak.

After the injection there was loss of pain and tactile sense in the sole of the foot and back of the heel. There remained, however, marked hypersensitivity on the back and inner side of the leg down to the internal malleolus where sensory loss was complete.

Pressure on any part of the thigh, whether over the course of nerves or not, produced a sharp pain which started on the inner side of the knee and passed down along the inner side of the crest of the tibia to the internal malleolus, ending posterior to it. This pain had been present from the beginning and had persisted since the alcohol injection. Even the touch of the hand or a jar of the patient induced the same pain. A marked erythema was found along the entire length of the inner surface of the leg. The erythematous strip measured from 2 to 3 inches in width and extended down to the internal malleolus and back of it along the inner side of the foot. The pain did not seem to be influenced by the position of the foot.

June 23, the long saphenous nerve was exposed at the level of the knee joint and injected with 60 per cent. alcohol.

There was immediate relief from pain. It was noted in the history, June 30, that the ulcers were healing, that the erythema had disappeared, and that the patient was comfortable. Shortly after this, the patient was able to put on a shoe and walk with a cane, as the ulcers had healed.

By August 10, all motions had returned and the power of the gastrocnemius, soleus and tibialis posticus was practically normal. There has been no return of pain.

CASE 3.—Causalgia of left hand. Chapping and ulceration of the skin due to dryness, causing a bleeding hand. Median nerve swollen and injected. Complete relief following injection of 60 per cent. alcohol.

McM. H. R. received a perforating bullet wound of the left arm 1 inch above the elbow, unaccompanied by fracture, Oct. 2, 1918. Immediately after the wound was received, ulnar, median and musculospiral palsy was noted. Three days after the wound was received, the hand became painful. The pain was described as characterized by a burning sensation or by a feeling of being pricked by pins and needles. Within two weeks the pain became severe. The

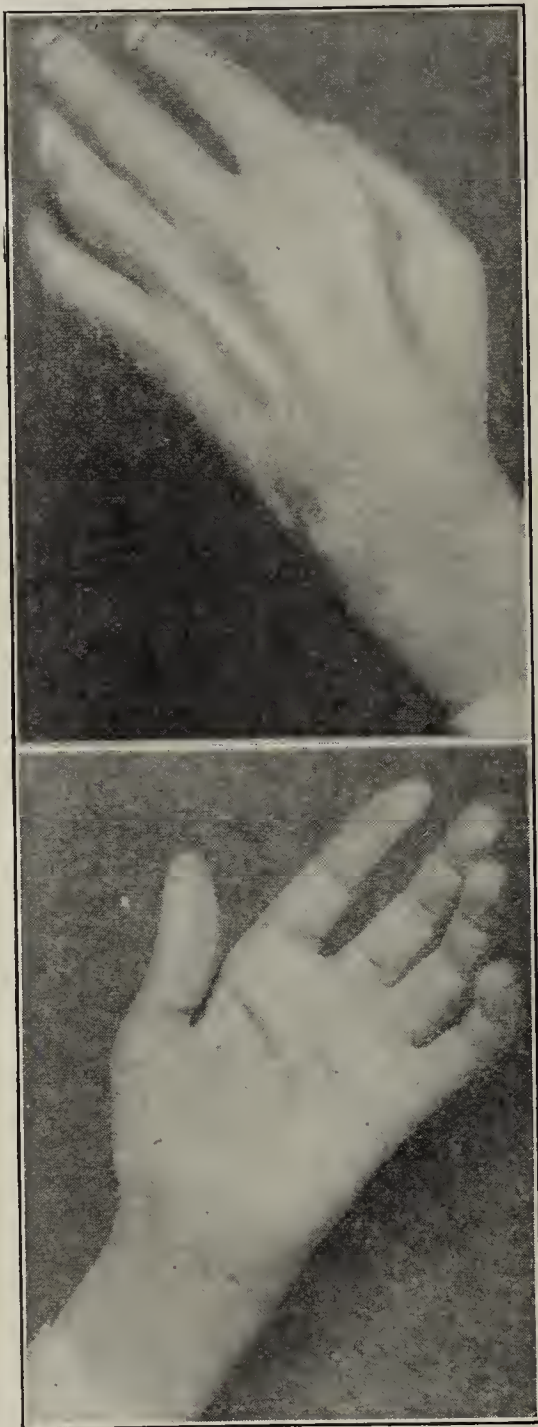


Fig. 1.—Appearance of the hand and the position in which it is held in causalgia. The hand is atrophied and emaciated; more delicate and slender than the normal one. The skin has a glossy appearance and is dry, as the secretion of sweat is diminished or entirely suspended.

skin commenced to peel off the hand about the same time, starting first in the palm of the hand and on the palmar surface of the index and middle fingers. By December, 1918, there was a weeping erythematous eruption involving the entire hand with the exception of the dorsum of the thumb. It extended up to the wrist on the dorsal surface. The pain was aggravated by heat, but relieved by cold, especially by cold water. To relieve the pain, the patient wrapped the hand with a towel soaked in cold water.

For several months the condition was so severe that even the slightest jar of any portion of the body induced a paroxysm of pain. At times the patient walked on his toes to prevent jarring. Rubbing any part of the body, especially dry rubbing, caused a paroxysmal burning pain in the hand. Sudden noise would aggravate the pain. The hand always felt as if "hot and dry." The pain was not so intense in rainy weather. When the hand became hot and sweated profusely, the pain was intense.

By March, 1919, the musculospiral paralysis had practically disappeared, and the patient could extend his wrist. By May, the patient was able to close the hand almost completely. By July 1, he had recovered all the movements of the hand and wrist. The power of the muscles was practically normal.

The ulceration originally involved the entire palm of the hand and the dorsum as high as the wrist. The back of the hand gradually healed from above downward, and when first examined at U. S. General Hospital No. 28, there was only slight roughness, redness and scaling on the back of the hand. The palm was ulcerated and bleeding. The ulcers had a foul odor. Severe pain was experienced in the hand and forearm whenever pressure was brought to bear over the course of the median nerve at the level of the scar.

It was thought at one time that there might be a neuroma, but a satisfactory examination could not be made because of the pain induced by pressure over the course of the nerve.

September 6, the median nerve was exposed just above the old wound. The nerve at this point was reddened and injected. It appeared larger than the median nerve usually does but did not differ in consistency from a normal nerve. It was injected with 60 per cent. alcohol.

September 8, it was noted that the pain had been completely relieved; the hand was dry and healing.

September 11, there was no pain, the ulcers were healed, and the hand was dry and scaling.

Following the alcohol injection there was almost complete paralysis of the flexor sublimis digitorum, the flexor profundus of the index and middle fingers, and complete paralysis of the flexors of the thumb; also some weakness of the flexor carpi radialis and almost complete paralysis of the palmaris longus. Fair power remained in the opponens pollicis.

September 17, there was no pain. The hand, as described by the patient, felt "like a new hand." There had been con-

siderable return of motor power within the last six days, notably in the opponens pollicis and flexors of the middle finger. Power was beginning to return in the flexor profundus of the index finger. There was no return of flexion of the thumb at this time. The patient went home on a furlough.

COMMENT

The pain as a rule reaches its maximum intensity four, five or six months after the injury, then it gradually but slowly, sometimes very slowly, decreases in intensity. The fear of exciting paroxysms of pain may persist long after the pain has actually decreased in intensity, and patients will still resort to methods already described of controlling or preventing the recrudescence of the pain. Improvement in voluntary motion may not occur or may occur slowly even when the pain has subsided and the positions of the parts affected may still persist, resulting in the development of ankyloses which are corrected with difficulty and may render the hand or foot practically useless.

These three patients treated by an intraneural injection of 60 per cent. alcohol experienced almost immediate relief from pain. The ulcers and chapped, bleeding areas healed rapidly, and the paralysis resulting from the injection of the alcohol was temporary.

The early use of the muscles of the extremity affected prevented the development of contractures and atrophy.

In the first case in which the median nerve was injected, April 17, 1919, examination made September 25 revealed good power, which was practically normal in all the muscles supplied by the median nerve. In the second case, the internal popliteal nerve was injected, April 24, 1919, and, Aug. 10, 1919, an exam-

ination revealed that all the muscles supplied by this nerve had recovered motion and that the power of the gastrocnemius, soleus and tibialis posticus was practically normal. In the third case the injection was made, September 6; and September 17, motion was present in the opponens pollicis and in the flexors of the middle finger. Motion was beginning to return in the part of the flexor profundus attached to the index finger, but there was no return of power in the flexor longus pollicis.

Sixty per cent. alcohol seems in some cases to interrupt the conduction of sensory impulses, but not to interfere with the transmission of motor impulses. As

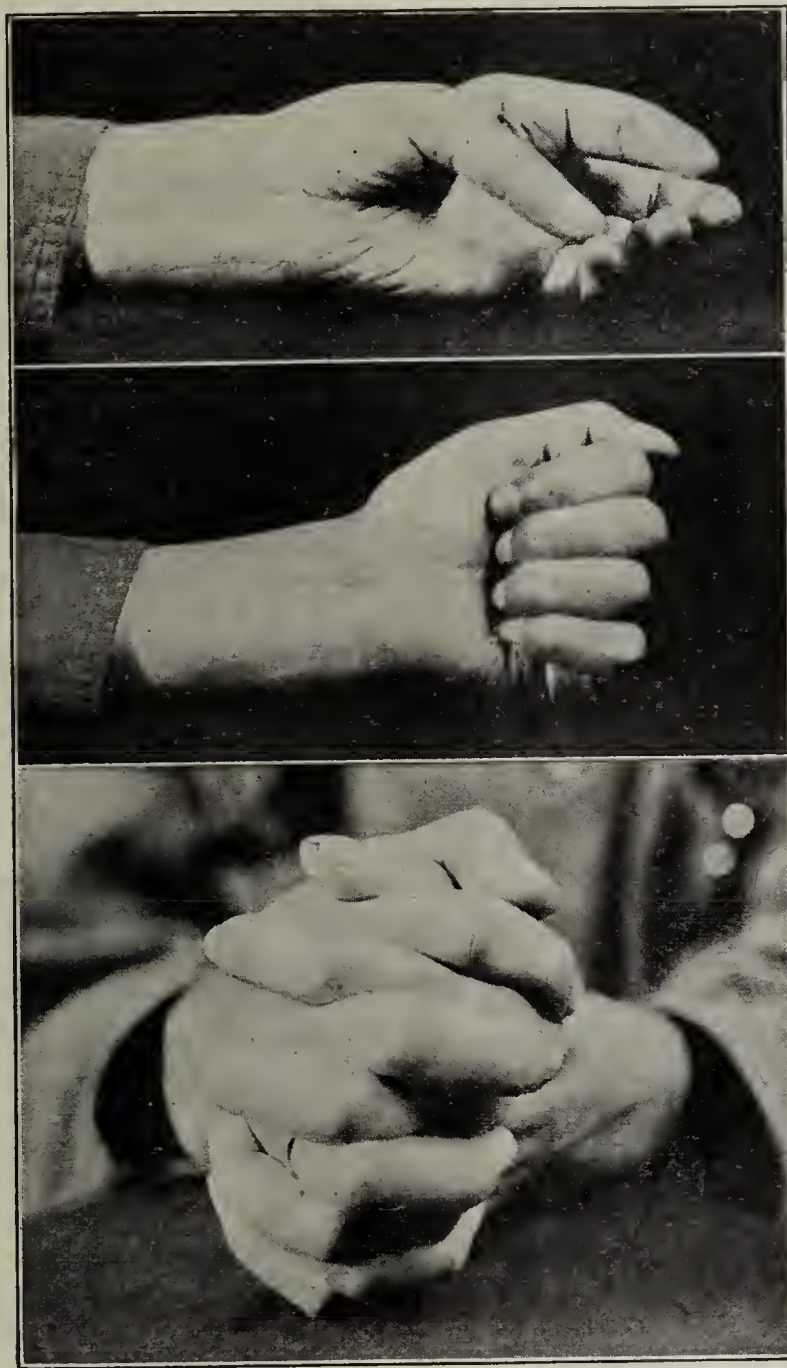


Fig. 2.—Complete recovery of motion in muscles supplied by median nerve after injection with 60 per cent. alcohol. This occurred within three months following the injection. Beginning return of motion was noted within three weeks.

is indicated by the excerpts from histories which have been given, motor palsies, when they do develop, are transitory and are rapidly recovered from.

When this injection is made, the nerves affected should be exposed under general anesthesia. The injec-

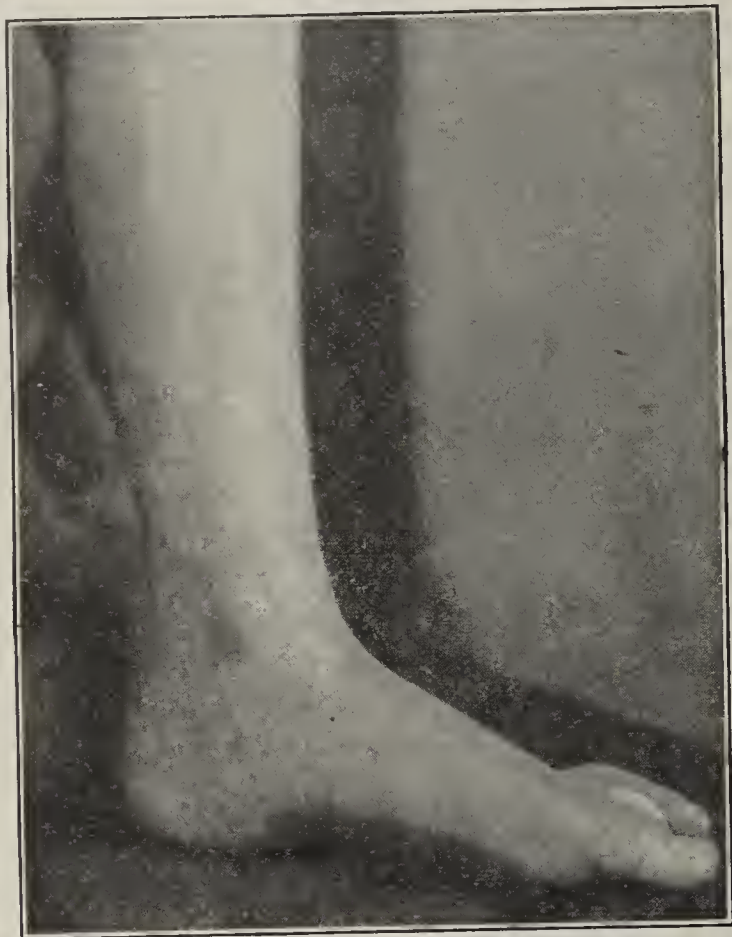


Fig. 3 (Case 2).—Swollen and macerated foot in a case of causalgia. For two months towels soaked in cold water were continually worn about the foot. These wet applications caused considerable maceration, associated with ulceration.

tion should be made above the wound or site of the injury, for in those cases in which the injection has been made below, the results have been temporary.



Fig. 4 (Case 3).—Scars on palm of hand and the palmar surfaces of the fingers indicate the extent of the ulceration. This foul smelling, ulcerated and bleeding area was healed five days after injection of the median nerve with 60 per cent. alcohol.

From 1 to 2 c.c. of 60 per cent. alcohol should be injected. As this is injected the nerve swells and becomes white, resembling in color a nerve that has been fixed in alcohol for histologic study.

Leriche has advocated in the treatment of these cases periarterial sympathectomy. This procedure of intraneural injection of 60 per cent. alcohol originally suggested by Sicard is so simple and the results are so satisfactory that it should be the operation of choice. Whenever neurolysis is performed in cases of causalgia it should be combined with an intraneural injection of 60 per cent. alcohol. Neurolysis, alone, does not control the pain in many cases, and in those in which there is some relief, it is but temporary.

OBSERVATIONS ON CHEST WOUNDS

REVIEW OF FIFTY-THREE CONSECUTIVE CASES *

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NEW YORK

The present article is based on a study of fifty-three consecutive thoracic wound cases admitted to the American Red Cross Military Hospital No. 2, Paris, France, from Aug. 20, 1918, to Jan. 31, 1919, a period of over five months. It includes all such cases admitted during this period. It is necessary to consider when comparing the results secured here that during the first part of this period this unit functioned as an evacuation hospital, whereas, later on, it became virtually a base hospital. Thus, early and late deaths appear in the mortality report. Thirty per cent. of the cases were received within four days from the time of wounding; 40 per cent. from four to fifteen days from wounding, while 30 per cent. were admitted later than fifteen days. Although a special effort was made to keep particularly complete reports, rushed conditions, especially during the first few months, often made these far from satisfactory. Particularly was this true of the records of many of the cases up to the time when the patients arrived here. Again, from the point of view of final results, length of necessary convalescence, etc., we are not in a position to make any definite statement, as our patients were in most instances transferred further to the rear as soon as they could be comfortably transported. The average stay in the hospital was forty-three days. In only eleven instances were we able to hear from them later, and then only by the briefest of letters, from one to three months after departure from this hospital, so that only a general impression could be safely secured as to their progress. Also a number of cases came to us when a nearby hospital was ordered to close. They were among its most serious cases, and in three instances death occurred within twenty-four hours, so that our observation of them was almost nil. Unfortunately, the ideal arrangement whereby patients go at once after wounding to a hospital, where they remain during their entire illness, is almost never found in times of great activity. No new methods of treatment were attempted by us, so that we have no innovations to offer. This study has been made, therefore, rather as a review of our experience with this class of cases, and also in the hope of corroborating facts previously noted in the many excellent articles already published by English, French and American surgeons. It may perhaps help to decide certain of the still debated

* From the American Red Cross Military Hospital No. 2, Paris, France.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the author's reprints.

questions by the addition of further evidence for or against them. During this period also a number of isolated points of interest were noted and will be briefly dealt with.

STATISTICS OF CONDITIONS FOUND

Among the fifty-three cases considered in this article, 30 per cent. were perforating wounds; 60 per cent. penetrating wounds; 6 per cent. wide open wounds, and of the remaining 4 per cent. no record was made. Penetrating wounds were considered to be all those in which there was no wound of exit, even if the foreign body had emerged from the thorax and was lodged in adjacent structures. This attitude was taken because the foreign body might still remain in close proximity to the intrathoracic cavity and be directly connected with it by its tract, thus still acting as a possible focus of infection. In 53 per cent. of the cases, shell fragments were the offending instruments, machine gun bullets and rifle bullets in 40 per cent., and in the remaining 7 per cent. no record was made. Simple hemothorax occurred in 32 per cent. of the cases, of which 7 per cent. were large; namely, over 1,500 c.c., and 25 per cent. were less than this. Pneumothorax was reported present in a greater or less extent in 24 per cent., either with or without hemothorax or pyohemothorax. Roentgen examination has shown small pneumothoraces so often when they were not detectable by physical examination that it is quite likely that this figure is much too small. However, except in a very few instances, it is one of the least important intrathoracic conditions found in these cases. Pyothorax we found in 43 per cent. of all the cases. This figure, together with the 32 per cent. of simple hemothorax, would total 75 per cent., and leave 25 per cent. showing neither. However, as many of these patients came to us with insufficient

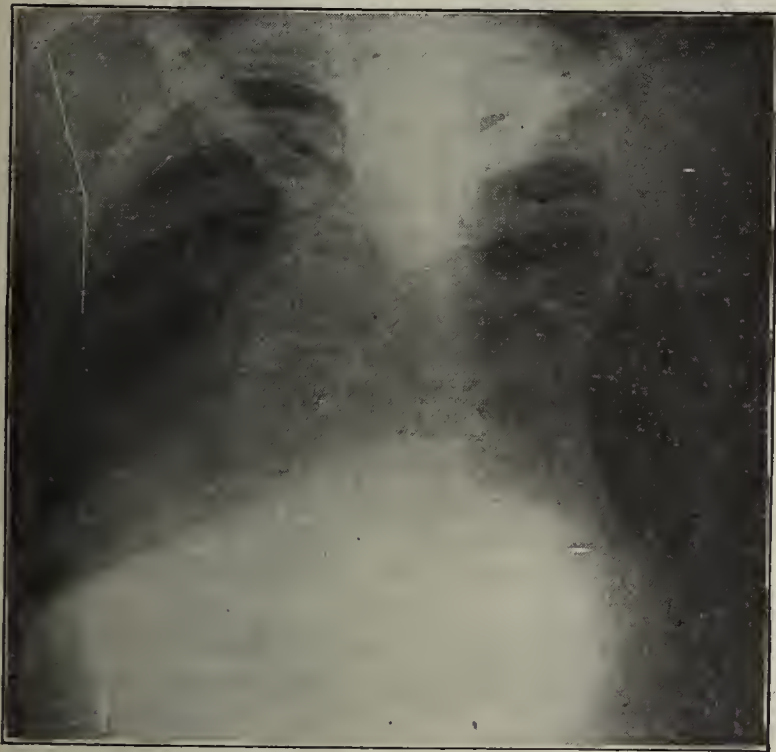


Fig. 1.—Insertion of a bronze wire rib-stay, apparently for the purpose of filling in the gap formed by the rib resection.

records of the conditions present soon after wounding, it is quite likely that some may have had sterile hemothoraces which had been drawn off or spontaneously absorbed before admission here. This would tend to increase the percentage of sterile hemothoraces, though still leaving some cases in which at no time was there any appreciable fluid in the injured thoracic

cavity. This was clearly shown by one accident case admitted about one hour after wounding and watched carefully for the following sixteen days.

CLINICAL COURSE OF VARIOUS GROUPS

In a general way it was possible to divide the cases into two main groups, from the point of view of their



Fig. 2.—The same case as Figure 1; condition of patient after removal of wire rib-stay; increased expansion of right lung and lessened pleural thickening.

clinical course: namely, those without and those with intrathoracic infection. The former could again be divided into two further groups: those cases without and those with hemothorax. The cases without hemothorax rarely showed any rise of temperature and frequently a normal pulse rate. There might be moderate cough and perhaps some spitting of blood for a few days or a week, if the patient had been received soon after wounding. On the whole, they were quite comfortable and normal and were kept in bed for a week or ten days merely because of their almost universal fatigue and as a precaution against the development of any complication.

In those cases with hemothoraces, on the other hand, a fever of from 99 to 101 was generally present, with a moderate rise in pulse rate, probably more cough of a nonproductive, nagging, irritative character, and increasing proportionately with the amount of fluid present. There was often dyspnea, even orthopnea in cases of large collection of fluid. But in none of these cases were the men as acutely ill, with the flushing of the face, feverish brightness of the eyes, the nervous excitability or the severe toxic dyspnea, such as so often accompanied many of the infected thoraces. Exploration revealed a bloody fluid, little changed, without odor and showing no bacteria when cultures were taken. Aspiration of a fair amount of fluid seemed to relieve the fever and the dyspnea and cough, so that frequently after one satisfactory aspiration, though the remnant of fluid persisted for many days, the temperature, and other undesirable symptoms, gradually became normal. Therefore, the mere presence of a moderate temperature with a hemothorax is no certain indication of its infection. But as one cannot be sure except by examination of the fluid, and as it must always be consid-

ered guilty until proved innocent, frequent explorations should be made and the cultures of the fluid taken to check up regularly its sterility while the abnormal temperature lasts.

Two groups could also be made of the infected cases received: those without thoracic drainage and the cases arriving after this had been secured. The former usually showed a steady and rapid rise of fever within two or three days and an equally rapid increase in the other signs of general toxicity. *Streptococcus hemolyticus* either in pure culture or mixed with pneumococcus, or *Bacillus aerogenes-capsulatus* was present in 70 per cent. of the infected cases. The general failure in strength was rapid, so that, without any treatment, a patient's condition might become serious in a few days. In the cases with drainage already secured, the toxicity might continue for three or four days and then gradually diminish with the fever. At times, however, the response to drainage would be immediate. It was not clear if this persistence of fever and toxic symptoms for a few days was due to an unsatisfactory drainage at first, that is, to the retention of infected clots of considerable size, or to a coincident pulmonary complication or merely to the fact that it required an appreciable time for the tissues sufficiently to throw off the toxins absorbed before drainage was provided. After the first week following thoracotomy, except for complications, the whole course was toward a steady return to the normal. Dyspnea and cough practically disappeared and the temperature remained around 90 to 100, touching normal generally in the morning. The pulse, however, was very likely to remain from 90 to 100 for a much longer period even with the patients quiet in bed. A discussion of the variations in the clinical picture due to complications will be taken up later under that heading.

TREATMENT

The consideration of the treatment of these patients falls under two headings: namely, those received immediately after wounding and those received later, the discussion of which will be limited to such treatment as was given in this hospital. Because of the paucity of records in many cases we could not draw many conclusions about the early treatment. It is still a much debated question whether it is best when the missile or bone fragments or pieces of clothing may be present and when there may be lung laceration and hemothorax, to open the chest widely at the earliest opportunity, remove all such foreign bodies, sew up lung and diaphragm tears, and close the cavity. There is, to be sure, a great difference between this procedure and merely a rapid débridement of the exit and entry wounds and suturing of any sucking opening, the operative shock in the latter being far less. It is not wholly clear from the scanty records at our disposal

whether the seventeen patients in this series operated on soon after wounding belonged entirely to the group of the more radical operation. Certainly the greater proportion did. Of these seventeen cases, eight, or 49 per cent., remained sterile, while nine, or 51 per cent., became infected later, requiring secondary thoracotomy for drainage. In each of these two groups there were three retained foreign bodies; and also in each the percentage of shell fragments and bullets as causative agents was approximately the same, so that these factors had no particular significance. Even when doing the work of an evacuation hospital, this organization was considerably farther to the rear than the average evacuation hospital unit, so that in almost every case the radical operations now under consideration were performed before admission here. Therefore, it was not possible to judge properly of their value, for the patients who might have succumbed to the shock of the operation would not reach us. Of those who did reach us, two out of the seventeen died, however, seven and thirteen days, respectively, after the original radical "clean-out and closure" operation.

One other word about the treatment in these cases before the patients were received by us. Three cases in which fractured ribs had been resected came to us from the same mobile hospital. Pleural infection had occurred requiring later thoracotomy. In each of these cases at the original operation a single bronze wire rib-stay had been inserted, apparently with the object of filling in the gap formed by the resection of part of the injured rib. This was passed through a hole drilled in at least one of the two ribs splinted. These were not cases of particularly large rib resection, and it was difficult to



Fig. 6.—Drainage wound closed; large pneumothorax; dense pleural adhesions at base.

see that any advantage had been secured. In none of these three cases was the wire attached to the second rib when the patients arrived here. In one of these cases, roentgen examinations revealed the free end extending into a large pneumothorax cavity. This was fortunately within reach through the thoracotomy opening, the loop was severed by a pair of stout scissors under the fluoroscope, and the fragments were removed by forceps. The other two cases were not so favorable, as the wires did not jut into pneumothorax cavities. As the drainage openings were closing satisfactorily, the wires were left in place for later removal under a local anesthetic when the existing process of infection had completely ceased. Whatever the original indication for these rib stays, they proved a troublesome complication in the later progress of the cases. Figures 1, 2 and 3 are roentgenograms of two of these cases.

The treatment in these cases after arrival at the hospital may be considered under two headings: non-operative and operative. The general procedure with all cases of chest wounds received was to have

roentgen-ray examination of the chest made at once, even before sending the patient to the wards. In the case of the very sickest patients, one of whom was carried over in a semisitting position in his own bed from a nearby hospital, we had to defer the roentgen-ray examination until later. Whenever possible a stereoscopic pair of plates was taken, as these are by far the most valuable of the roentgen-ray examinations. When possible, fluoroscopic examination was also made, but when neither of these was possible, a single plate of the chest was taken with the patient on his back. One must, however, check up very closely by repeated physical examinations the roentgen-ray findings, and correlate them with the progress of the case. It is not usually practical to have many roentgen-ray examinations in every case, but the patients can be examined physically as often as desired. In general, it is possible to have one or two sets of plates made, and when the facilities are available, it is pure negligence not to use them freely. The ear or percussion finger will not tell the presence or location of a foreign body. Frequently also the skin and subcutaneous tissues are so changed either by hematoma from the blow, by a widespread cellulitis, or again from the presence of subcutaneous emphysema, that the exact conditions present within the chest cavity cannot be entirely determined by physical diagnostic means alone. If any fluid was found in a pleural cavity, an exploration and culture were made at once, unless it was a small amount and the temperature was normal. If sterile and of small quantity, it was not aspirated but examined at four and five day intervals so long as the elevated temperature or any other symptoms of infection continued. In all cases of hemothorax of approximately more than 100 or 200 c.c., it was the practice to aspirate as nearly dry as was possible in the belief that convalescence would be shortened. In all except two cases, aspiration was deferred to six or more days after wounding.

Aspiration was performed on eighteen patients altogether: eight once, nine twice, and one four times. Never were more than 1,200 c.c. removed at one time, and no cases of infection of the hemothorax occurred as the result of aspiration. The patients were kept in a sitting or semisitting position during the procedure. A careful anesthesia of the skin and parietal pleura with procain was first secured. This is quickly and simply secured, and makes the aspiration painless. When aspiration may have to be repeated frequently, in case the patients are extremely weak and ill, as they often are, every little refinement of technic, especially when so simple, should be used. When repeated aspiration was necessary, its frequency was determined by the amount of fluid present and the symptoms caused by it, such as dyspnea, cardiac excitability, general restlessness, cough and also the persistence of a moderate elevation of temperature. In large collections it was done every day or two until the quantity of the fluid had been markedly reduced;

or in moderate sized collections, a second and final aspiration might be layed for a week, as the remaining fluid was often absorbed quickly of itself.

The condition of the blood in the pleura has often varied considerably. It might be fairly thick and uniform, or thin and mixed with clots. Not infrequently the needle had to pass through repeated and firmly fixed partitions of clotted blood in order to reach the intervening layers of the thin fluid blood. If one is not certain of the amount of fluid in the chest, he is apt to stop after emptying a single small pocket and miss the main collection of fluid, for fear of doing damage to the lung by persistent attempts to penetrate to various depths and in various directions the tough wall which he takes to be the visceral pleura. If the patient can be in a semiupright position, held firmly by an attendant so that he can relax; if also one has not unnecessarily excited him to rapid respiration by undue pain; if the needle is sharp, of fairly large bore and rather short point, and if one avoids the obviously dangerous regions, it would seem quite safe to explore thoroughly even if the lung were to be punctured in the process. We have seen no undesirable complications from it and believe that one must persist in the

effort actually to remove the fluid when one is sure it is there. Some chests, however, would appear to contain merely a mass of blood clot. There was one such case in this series in which, after several thorough attempts to remove what appeared, on examination, to be a moderately large fluid collection, it was necessary to leave it alone. We have not used the method of replacing the fluid aspirated, in the case of large collections, with oxygen. That would seem to be advisable if it permits the cavity to be more completely drained at a single time; for, though aspiration is simple and not dangerous, the fewer of such procedures needed, the better,

particularly in men severely wounded, who are as a rule also thoroughly fatigued.

The nonoperative treatment of infected hemothoraces, and pure empyemas, without hemorrhage, is simple, though considerable judgment is needed to know when and how long to depend on it. In brief, our practice has been to employ repeated aspiration at from one to two day intervals in all cases in which it appeared that patient was too ill for the moment to stand a satisfactory operation for drainage, and when immediate relief was needed. Frequently a rapid, painless aspiration of as much fluid as could be readily obtained, together with a dose of morphin, would give the one or two days of comparative comfort necessary to raise the patient's resistance sufficiently to allow the operation to be done with relatively small danger. In certain cases in which the toxemia did not depend on the quantity of fluid present, or when aspiration, for one reason or another, was not complete enough, free operative drainage in spite of the operative risk seemed best. One cannot rely on nonoperative preliminary aspiration in every case, but must be guided by the particular conditions found in



Fig. 9.—Drainage wound closed; small pneumothorax at left base; good lung expansion; same case as Figure 7; seventy days after thoracotomy.

each case. How long to persist in aspiration if temporary relief is given depends largely on whether the patient's condition can be kept good until the fluid becomes a thick pus and the empyema localizes. There are frequently larger or smaller blood clots which cannot be aspirated and which should be removed as soon as possible, so that when these are present an earlier recourse to operative drainage is wise. Then, lastly, there are some cases in which the patient's excellent condition takes from operative procedure almost all its dread. In these there is no particular reason for delaying it. In brief, then, aspiration in these cases is merely to be used as a bridge of the dangerous gap between the time when some relief is essential but the general condition is too critical for operative procedure, and the time when the patient's resistance has improved enough to stand these more satisfactory measures of relief.

Two types of operation are employed at this stage: The first consists of a wide opening secured by using

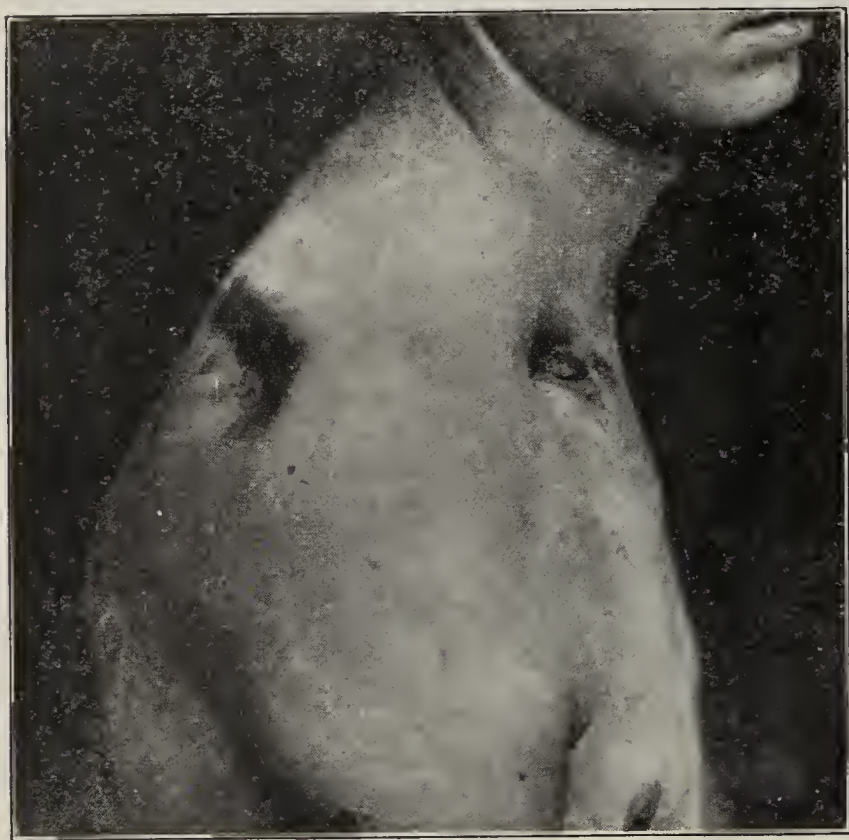


Fig. 12.—Perforating shell wound of right apex; compound, comminuted fracture of right scapula; suppurating tract; no pleural infection.

a strong screw rib-spreader. This permits a thorough exploration of the pleural cavity and search for foreign bodies, as well as the removal of infected blood clots. It is not a minor operation and entails considerable shock; but, if there is reason to believe that blood clots are present and the man's condition will permit of it, these should be removed. The same thing applies to all other foreign bodies if they can be reached without unduly increasing the trauma or length of the operation. It would seem to insure a freer drainage and a more certain, shorter and more steadily progressive after-course than the second type of operation; namely, the ordinary thoracotomy with merely the insertion of a double rubber drainage tube. The latter operation has the great advantage of being particularly suitable for the use of local anesthesia and the consequent diminution of shock. When careful anesthesia is produced, it is a comparatively simple operation; but it does not permit of search for the foreign body or cleansing of the cavity of clots. It should be reserved, therefore, either for cases with

thin, homogeneous, clot-free fluid or for those cases in which the shock of the more radical operation could not be tolerated.

When shell fragments are present in the lung and there is no infection, they should not be removed except in the rare instance when they seem to be the cause of severe pulmonary hemorrhage. In the presence of infection of the pleura, our limited experience has led us to feel that, although a definite attempt at removal of the foreign body should be made, it should be left in place if not extractable with fair ease, because of the trauma incident to opening up fresh lung tissue. Eleven drainage cases were observed until the operative wound was closed. In three of these in which the shell fragment was present, the average time to closure was forty-two days. In the remaining eight cases without foreign body, the average time to closure was forty-eight days. From these figures it would appear that the presence of missiles in the lung has no retarding effect on the wound closure. Nor is it clear that their presence favors the occurrence of complications such as are dealt with later. Out of our thirty-two penetrating chest wounds, twelve, or 38 per cent., experienced some complication referable to the wounding; whereas of the sixteen perforating wounds only five, or 31 per cent., were complicated. However, of the twelve patients with foreign bodies in the lung when discharged from this hospital, only 33 per cent. were complicated; whereas complications occurred in 39 per cent. of the cases in which the missile was removed. In all these deductions it is necessary to bear in mind that they are based on a very small series. Yet, with this reservation, it is quite possible that they may point the way, in certain disputed questions, to the wiser course to follow. In this instance it would appear that the practice of insisting, in almost every case of infected intrathoracic penetrating wound, that the foreign body be removed at all costs is not wise, and that only in case it can be found with comparative ease and without obvious danger to the patient's condition should search be continued.

PERIOD OF RECOVERY

The period of recovery presents interesting points for consideration. Blow bottles were given to the patients just as soon as they were strong enough to use them. It is my impression that they were of benefit; and although started often at once after operation in the infected cases, we saw no bad effects that might have been laid to too early employment.

In most of the cases the drainage tubes were continued in place, though steadily cut down in length and diameter almost to the time when the wounds were ready to close permanently. In the few isolated cases in which the tubes were removed early, it was necessary to replace them very shortly to reestablish the drainage and reduce the coincident temperature. Careful daily dressings until the temperature is practically normal, the freedom of drainage assured, and its amount largely diminished, are essential. This has included replacing the tube each time by a fresh one. Whether or not to irrigate the cavity, and if so, with what solution, are questions which have received much general attention recently, both in empyema following chest wounds and in the postpneumonic type. In a few cases a gentle irrigation with salt or with surgical solution of chlorinated soda (Dakin's solution) was employed by us each day when the wound was dressed.

Patients were selected with the empyemic cavities circumscribed and apparently well walled off. Three of these patients, however, developed broncho-empyemic fistulas and only by very good fortune escaped serious consequences from the passage of the irrigating fluid

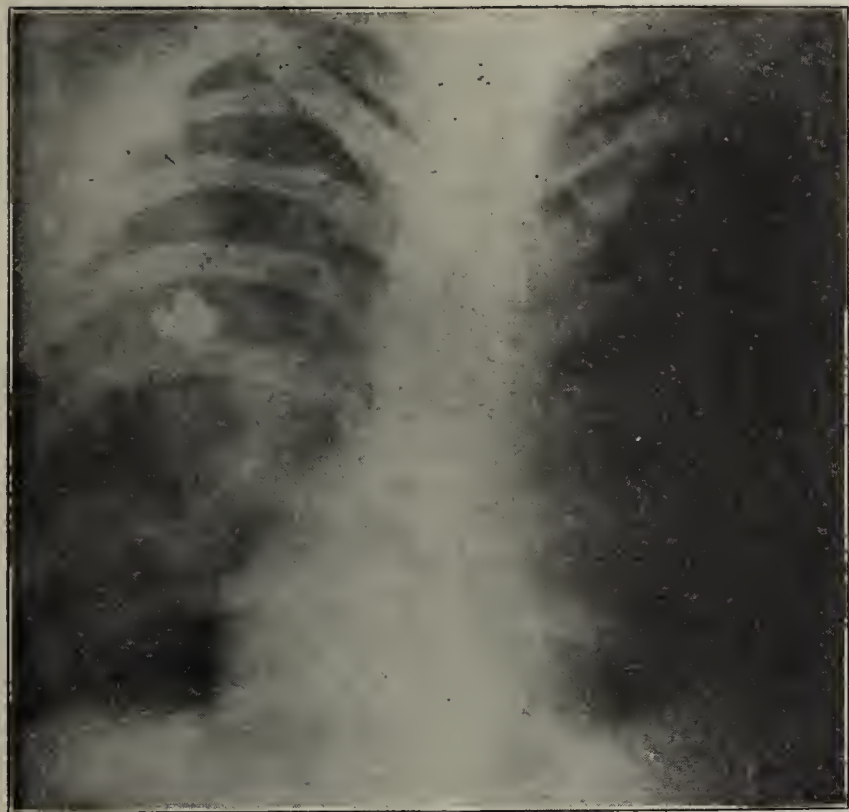


Fig. 14.—Shell fragment in middle of left lung; surrounding consolidation and probable abscess.

into the lung through the fistula. All three patients in whom this complication was noticed remarked that they tasted the solution. Two were thrown into violent fits of coughing and were nearly suffocated for the moment, while the third, though not troubled so much at first, developed a small bronchopneumonia around the fistula as the result of the fluid's irritating presence in the lung at that point. Therefore, although we made no systematic use of empyemic-cavity irrigation, our small experience was unfortunate and suggested that the occurrence of broncho-empyemic fistulas was not infrequent and that they might even be caused by the irrigations.

During the week or ten days immediately following operation for drainage, it was often very difficult to determine with certainty the cause of a persistent elevation of temperature and symptoms of absorption. These symptoms may have been due to retained blood clots blocking good drainage, or to a smaller or larger patch of bronchopneumonic consolidation. With us, it was necessary to consider always the intercurrent of an attack of influenza, as the period covered by this paper was that of the great, world-wide influenza epidemic. Frequent physical examinations, leukocyte and differential blood counts, and especially stereoscopic roentgen-ray plates and fluoroscopic examinations were absolutely necessary to give one a constant and clear picture of exactly the conditions present.

Figures 4 and 5, roentgenograms taken during such periods of uncertainty, show how difficult it is, even with the aid of repeated roentgen-ray examinations, to interpret the symptoms properly. The first case (Fig. 4) is that of a perforating wound of the right upper lobe, complicated by a moderately large hemothorax which clotted badly and became infected. Thoracotomy was done under local anesthesia and the clots were not thoroughly removed. It seemed quite certain

that they prolonged the discharge for weeks until entirely digested. During this time it was a constant question whether or not there was some hidden sacculated pocket of pus not draining. The lower portion of the cavity anteriorly, where there was considerable dullness and a roentgen-ray shadow, was frequently needled for fluid but without result. There was also a definite, persistent and clearly outlined shadow in the upper and outer portion of the affected side suggestive of a localized empyema at that point. Being high up in the axilla, it was very difficult to reach even with the exploratory needle, so that exploration was delayed for a number of days. It so happened that about this time the drainage became freer from the thoracotomy wound, the temperature dropped, and the patient began an uneventful recovery. The shadow persisted, however, so we were constrained to believe it was not due to anything other than thickened pleura and that elevation of temperature was caused by the slowly digesting blood clots. The second case (Fig. 5) shown in this connection was somewhat similar, being that of a penetrating wound with a shell fragment lodged in the left upper lobe. No pneumonia, pneumothorax or hemothorax was present, and yet there was a high fever and toxemia for from three to four days after admission. The patient had the same dense shadow in the upper outer region of the left thorax, which was suspected of being a localized empyema. He did have, however, a moderate subpectoral abscess at the wound of entrance. This was drained freely by incision, with a complete subsidence of symptoms, though the roentgen-ray shadow persisted a long time. This is a good example of a case in which no one means of diagnosis could be relied on. The frequent careful use of all should, however, clear up most obscure cases.



Fig. 15.—Large perforating left lung tract surrounded by fibrous tissue; consolidation resolved; good lung expansion. Same as Figure 14 but with foreign body removed.

Eleven of the cases in this series with empyemic drainage wounds were observed up to closure. The shortest time required was thirty-three days in one case, the longest sixty days in one, while the average number of days was forty-seven. As stated before,

those with the missile still in the chest averaged forty-two days, while those free of any foreign body took forty-eight days. It has seemed that the persistence of large clots, not cleaned out at operation, has prolonged the closure.

It was interesting and instructive to watch the change taking place in the chest as the discharge lessened and the time for closure approached. Frequently after the discharge had become scant and thin and the temperature remained normal, the wound would close while a large pneumothorax still persisted. This is well shown by Figure 6. Now and then, however, the pneumothorax contracted gradually down and had practically disappeared when the drainage wound closed.

The final intrathoracic functional disability observed both in the noninfected and the infected cases was surprisingly slight. In sixteen cases of noninfected hemothorax, practically all of which were aspirated nearly dry, 56 per cent. had good lung expansion, 38 per cent. fair expansion, and only one case, or 6 per cent., poor expansion on discharge. In the last case the patient had to be evacuated with a large hemothorax still present. He was heard from two months after leaving our observation, and though he had not been aspirated again, he reported that his lungs gave him no trouble at all and that he felt in excellent health. Of sixteen empyema drainage cases, in eleven of which closure had taken place before the patients were transferred from this hospital, 44 per cent. showed good lung expansion, 44 per cent. fair and 12 per cent. poor expansion. It was particularly interesting to see how quickly the expansion would increase in cases of long standing intrathoracic suppuration with considerable fibrosis. Figures 7, 8 and 9 show this point particularly well.

COMPLICATIONS

Complications directly traceable to the chest wound were present in twenty-four cases, or 45 per cent. They were: bronchopneumonia and lobar pneumonia, purulent pericarditis, general septicemia, secondary hemorrhage, influenza, broncho-empyemic fistula, fibrinous and serous pleurisy, toxic diarrhea and pulmonary tuberculosis. Of these, bronchopneumonia was the most frequent, occurring in eight, or 33 per cent., of all cases. In all except three of this group it was in the opposite lung from the injured side. This does not include the moderate infiltration generally present in the lung tissue immediately about the track of the missile. In one of these cases it appeared that the pneumonia was just enough to cause death in an otherwise thoroughly exhausted patient. In three others which were not fatal it was a serious com-

plication. General hemolytic streptococcus septicemia occurred once, causing death. Purulent pericarditis was present once, causing death. It was hard to detect this condition because a complete unilateral pneumothorax with what appeared to be a resulting displacement of the heart to the opposite side obscured what was really a distended pericardial sac. The partially collapsed lung on the pneumothorax side was another source of error appearing to account for the altered cardiac roentgen-ray shadow on that side. In this case, unfortunately, no audible signs of pericarditis were detected at any time. Figure 10 shows the conditions in this case. There was one case of intrathoracic secondary hemorrhage from intercostal vessels, causing death. The two cases of broncho-empyema fistula have already been mentioned. One of these patients left us with his drainage wound healed, and the patient gaining daily in strength. The other patient's wound was still open. The drainage in this case was not as favorable, so that it will undoubtedly take longer to heal.

In the one case of diarrhea included here, no organism could be found in the stool. The condition persisted until drainage of an infected hemothorax was provided, after which it cleared up promptly. The infecting agent in the thorax was the bacillus of influenza. It was a late infection of a previously sterile hemothorax, very probably of the same origin as the severe accompanying bronchitis, although unfortunately the predominating organism in the bronchial secretions was not determined. The diarrhea appeared to be definitely of toxic origin.

In connection with this case of influenza infection of a hemothorax, there

was one other case which developed quite late a bronchopneumonia in the left lower lobe, which had been the seat of a penetrating wound. Influenza bacilli in pure culture were recovered from the sputum. A moderate serous effusion occurred in the left pleura but continued sterile, and after one moderately large aspiration it was absorbed without further trouble.

Moderate and severe attacks of influenza occurred in six cases. They were without serious consequence, but were of interest as the aching, which in a non-wounded man is especially noticeable in the arms and legs and back, were in each of these cases especially referred to the region of the wound. It was often difficult at first to differentiate an attack of influenza from a pocketing of pus within the injured chest cavity. In influenza complications, however, the negative findings by roentgen ray and the usual low leukocyte count of influenza were of great differential assistance.

In only one of our cases was pulmonary tuberculosis found. This was in a young man (without pre-

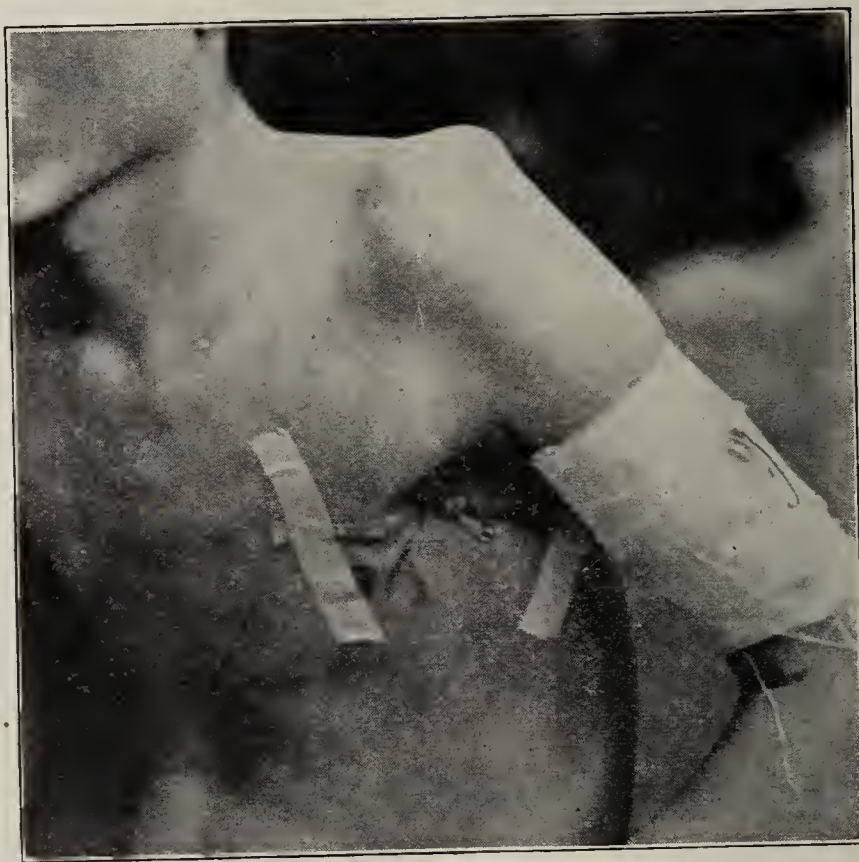


Fig. 16.—Penetrating shell wound of left axilla; abscess in left upper lobe, draining through wound; no pleural infection.

vious tuberculosis history) who sustained a perforating wound of the left upper chest shattering the clavicle and scapula. The pleural cavity became infected and required thoracotomy and drainage. The patient was admitted to us ninety-six days after wounding. At that time he showed at the opposite apex a very generally scattered tubercular infiltration. The bacilli of Koch were present in the sputum. He was emaciated and presented a sharply remittent fever which reached each day between 103 and 104. It was suggested that this had probably been a hematogenous infection from some previously moderately quiescent focus in the wounded lung. It is one of the very few similar cases observed among the wounded of the American Expeditionary Forces. The roentgen-ray findings in this case are shown in Figure 11.

MORTALITY

In considering the mortality, reference should be made again to the fact that during the period covered by this paper this unit acted for a time as an evacuation hospital, and also that more than one third of the deaths occurred within twenty-four hours after admission from a nearby hospital compelled to close and transfer all its cases. If we consider these facts, the otherwise high mortality of 15 per cent. is better understood. Of the eight deaths, the average day of death in four cases was the thirty-third day after wounding; in two other cases the average day of death was ten days after wounding, and for the remaining two the figures were not available. Three patients died within twenty-four hours after admission, one four days after, and one each on the ninth, tenth, fifteenth and sixteenth day.

Eleven per cent. of our patients wounded by shell fragments died, while only 5 per cent. of the patients wounded by bullets died. All of the eight deaths occurred in infected cases. The causes of death were as follows: bronchopneumonia occurred twice, shock twice, while lobar pneumonia, purulent pericarditis, postoperative intercostal hemorrhage and *Streptococcus hemolyticus* septicemia each occurred once. Our statistics did not show any direct connection between the type of organism present and the percentage of mortality. Seventy-five per cent. of the cases resulting fatally were complicated. Of the cases in which recovery took place, only 33.3 per cent. showed such complications. The complication in the fatal cases seemed to be the direct cause of death. The two important deductions are, therefore, a reiteration of already well-known facts, that shell wounds are far more serious than bullet wounds, and that complications are much to be feared because of their high mortality.

Apart from the groups of cases already considered, there were a few special conditions of considerable interest. One was a perforating wound of the right upper chest near the shoulder, comminuting the

scapula badly. Figures 12 and 13 show the outward appearance of the wounds and the intrathoracic condition. For a number of weeks there was a continuous tract through the chest. This gradually cleared, fibrosed, contracted to a cord, the surrounding traumatic consolidation resolved, and the wound closed satisfactorily. The other two were penetrating wounds. In one case (Figs. 14 and 15) with a posterior wound of entrance, two pieces of shell were found close together toward the anterior surface of the left lung just above and inside of cardiac apex. They were removed by anterior incision, a complete perforating tract being formed. The pleura remained uninfected and the same course was followed to closure as in the first case. The second penetrating wound case showed a piece of shell 1.5 by 0.5 by 4 cm. in size which had entered high in the left axilla and penetrated deeply into the upper lobe of the left lung, forming a lung abscess but sparing the pleural cavity. Figures 16, 17 and 18 should be seen in this connection. The fragment was removed and drainage improved. The abscess had contracted greatly when the patient was transferred.

One more freak case showed a great deal of the lower sternum and the sternal attachments of the right and left lower ribs shot away in such a manner as to produce a gutter wound. The mediastinal space was open for an area of 4 by 8 cm., showing clearly the outer surface of the parietal pericardium. The heart beat was clearly visible. Each pleural cavity contained between 50 and 100 c.c. of thin, slightly bloody, sterile fluid; but only a moderate superficial infection of the wound occurred which quickly cleared, the pleura and pericardium escaping entirely.

In this series there were only two cases in which *Bacillus aerogenes-capsulatus* was present in pure culture in the hemothorax. One of these men was wounded twenty-seven days before operative drainage was finally provided. When admitted, he was in great distress and pain from intrathoracic pressure. An aspiration of 500 c.c. of bloody purulent fluid gave no relief. Unfortunately, the needle was still below the upper level of fluid and so did not afford direct relief of air tension. After the aspiration there did not seem to be a great quantity of fluid left, but the intercostal spaces continued to bulge. It was only when free drainage by thoracotomy was provided that relief came. From observations in this case we were inclined to believe that the gas bacillus had been the positive agent in producing the increased intrathoracic tension. The second case of pure culture, although it was over two weeks after wounding before thoracotomy was done, showed no undue intrathoracic tension. Nor was this present in four other cases in which this organism was mixed with the hemolytic and nonhemolytic streptococcus.

The symptoms experienced immediately after wounding agreed entirely with those so often and so

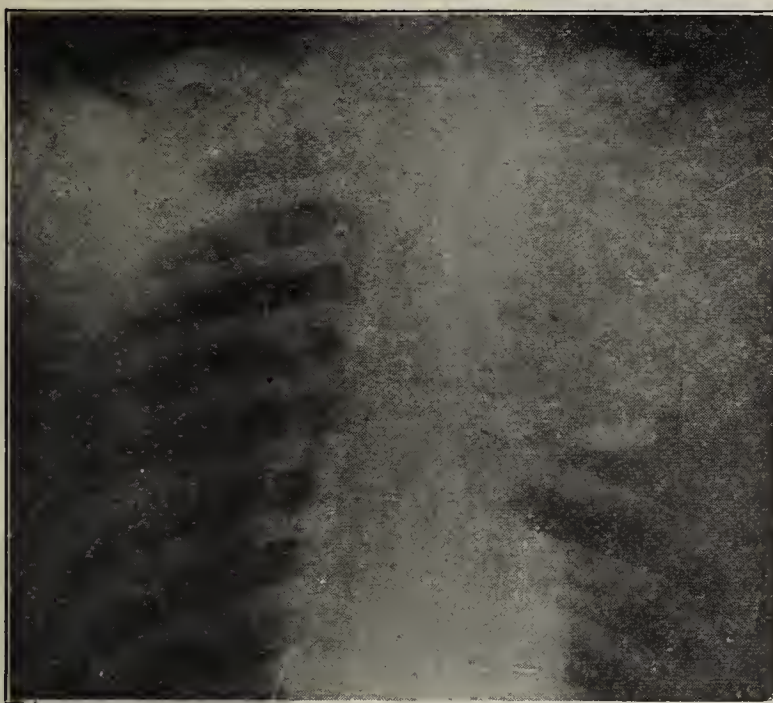


Fig. 17.—Large shell fragment in abscess of left upper lobe; consolidation above; lower lobe normal. Same case as Figure 15.

well reported elsewhere. Generally there was the sensation of a heavy blow followed by dyspnea, cough and frequently hemoptysis, which was generally moderate and lasted only a few days. Now and then it was severe or continued for a week or two. We have no information as to how often the hemorrhage was

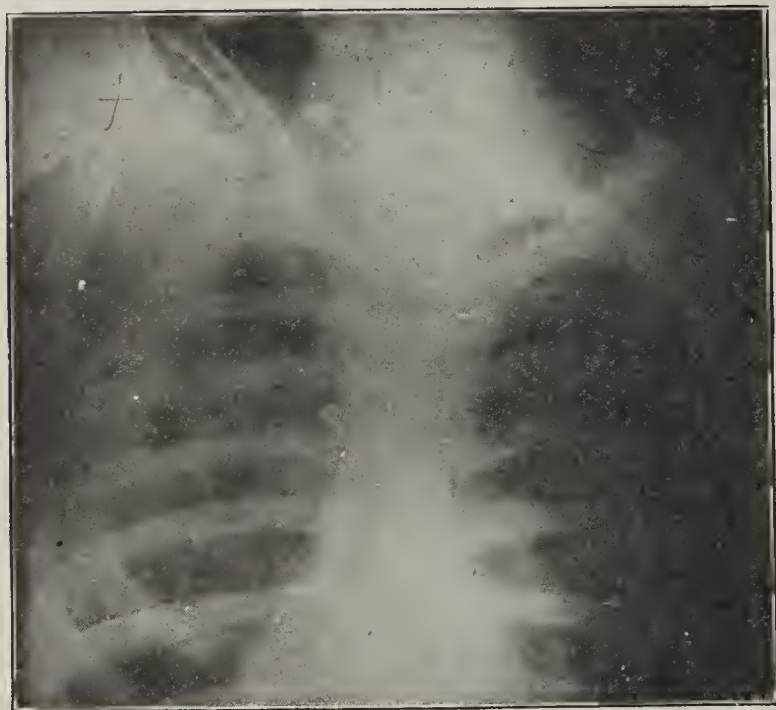


Fig. 18.—Apical consolidation resolved; foreign body removed; fibrosis about cavity; good lung expansion. Same case as Figure 16.

fatal. There was occasionally profound weakness and fainting or temporary weakness from which recovery was rapid. Very frequently in clean perforating bullet wounds the lack of symptoms was extraordinary. Men reported having walked alone or with assistance as much as five miles before collapsing.

CONCLUSION

The following facts seem fairly clear: The diagnostic means of needle puncture and stereoscopic and fluoro-

SUMMARY OF FIFTY-THREE CASES OF INTRATHORACIC WOUNDS

	No. of Cases	Percentage
Mortality	8	15
Perforating wounds	16	30
Penetrating wounds	32	60
Wide open wounds	3	6
Type unknown	2	4
Sterile hemothorax	17	32
Pyohemothorax	23	43
Wounds due to shell fragments	28	53
Wounds due to bullets	21	40
Type of missile not known	4	7
Missile in lung when patients were transferred....	12	38*
Missiles removed	20	62*
Presence of complications	19	36

* Of penetrating wounds.

scopic roentgen-ray examination should be freely employed. As a nonoperative measure, repeated aspiration has a very important place in the treatment if judgment is used in employing it. In cases requiring merely thoracotomy and drainage or when this is all that can be attempted, local anesthesia with 1 or 2 per cent. procain is of great value. On the contrary, when large infected clots are present and the man's condition will permit it, a more radical operation is to be preferred. Foreign bodies in the lung are tolerated with unusual ease both in noninfected and in infected cases, so that, whereas, in the latter cases, an attempt should

be made to remove them, no great dread need be entertained, so far as our early information goes, if they must be allowed to remain. It is most encouraging to see how much lung expansion can occur even after the severest injuries and infections within the pleural cavity.

We cannot yet say with certainty what is the best type of early operative treatment for these cases. This question (and many others still obscure) is bound up inextricably with the as yet unsolved administrative difficulty of providing special hospitals for thoracic wound cases near enough to the front that a sufficient number of patients can be sent there directly after being wounded and kept there under continuous observation during their entire convalescence.

FALSE PNEUMOTHORAX *

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Few localized pneumothoraces can be diagnosed without the aid of the roentgen rays. Indeed, most recent observations on interlobar pneumothorax¹ and pleural and pulmonary annular shadows² are based solely on the routine roentgenologic study of patients suffering from pulmonary diseases.

There are rare cases, however, in which a rapid roentgenologic examination may suggest a localized pneumothorax or hydropneumothorax, when in reality neither condition exists. French writers, who were among the first to recognize this condition, applied the term "faux pneumothorax" to these supposed roentgenologic aberrations. These false pneumothoraces do



Fig. 1.—Apparent hydropneumothorax at left lower lobe, showing advanced fibroid changes throughout the left lung suggesting evidence of multiple cavitation, with the heart drawn markedly to the left and upward.

not cause any definite subjective symptoms, and the physical findings over the area involved are those of

* From the Montefiore Home Country Sanatorium.

1. Fishberg, Maurice: Localized and Interlobar Pneumothorax Complicating Pulmonary Tuberculosis, *Arch. Int. Med.* **20**: 739 (Nov.) 1917.

2. Sampson, H. L.; Heise, F. H., and Brown, Lawrason: A Study of Pulmonary and Pleural Annular Shadows, *Am. Rev. Tuberc.* **2**: 664 (Jan.) 1919.

thickened pleura with retraction of the lung tissue. There is usually a fluid level in the region of one or the other of the lower lobes of the lung, where these pneumothoraces usually occur. Their appearance either fluoroscopically or on flat or stereoscopic plates is characteristic of localized hydropneumothorax.



Fig. 2.—Same patient six months later, showing the fluid level of the apparent hydropneumothorax one inch higher after the ingestion of 16 ounces of water.

Careful observation, however, will disclose the fact that such air collections are extrathoracic and are situated below the diaphragm, which is either pushed or drawn high up into the hemithorax. When situated at the right lower lobe, such gas collections are frequently due to a subdiaphragmatic abscess. The gas formed pushes the diaphragm high up into the thoracic cavity, thus causing the adjacent lung tissue to collapse. When situated at the left lower lobe, they very frequently are due to extreme pulmonary fibrosis with marked upward traction of the diaphragm, and to a more or less dilated stomach. In the former instance the fluid level is caused by the gas-containing abscess, and in the latter instance by the stomach contents.

The paucity of reports of this condition in the literature prompts the recording of all such cases, for by so doing a great deal of inconvenience and some danger may be avoided when considering exploratory puncture. Lebon relates one such instance from his service at the military hospital at Buffon. A soldier's stomach, which was punctured for diagnostic purposes, was found drawn high up into the thorax, thus simulating an intrapleural fluid and air-containing space. It is reasonable to assume, however, that such instances occur more often than the number of reports on the subject would indicate.

I observed a case of pulmonary tuberculosis in which the lesion at the left lower lobe had been interpreted, at a hospital for the tuberculous, as a thickened pleura with retraction of the diaphragm. After a physical and roentgenologic examination of the patient, on her admission to our sanatorium, a diagnosis of pulmonary tuberculosis, complicated by spontaneous localized hydropneumothorax, was made (Fig. 1). Many months of observation and ultimately a more careful roentgenologic examination proved that the supposed hydropneumothorax was a markedly retracted stomach.

REPORT OF CASE

S. K., aged 27, admitted to our institution in February, 1919, gave a typical history of pulmonary tuberculosis, with recurrent attacks of chills, fever, sweats and hemoptyses, extending over the previous five years. Physical exploration of the chest disclosed evidence of consolidation and marked cavity formation of the upper half of the left lung with a very dull note on percussion, and feeble breathing over the left base. Neither splash nor coin sign could be elicited. The condition at the left base was thought to be the result of a thickened pleura. The right upper lobe showed evidence of moderate tuberculous infiltration. The heart was drawn upward, markedly to the left. Fluoroscopic examination of the chest confirmed the physical findings in general, but instead of the thickened pleura at the left base we were astonished to find a marked hydropneumothorax. A roentgenogram (Fig. 1) taken the same day confirmed the fluoroscopic findings. The patient's general condition improved during the following six months, and repeated physical examinations during this period disclosed no evidence of the existence of the hydropneumothorax, although the roentgenogram disclosed the same condition as seen in the first examination.

Contrary to expectation, the air in the supposed pneumothorax was not absorbed to any appreciable degree. Furthermore, the fluid level varied with the ingestion of food, being higher after a full meal (Fig. 2), lower before breakfast, and entirely absent on fasting (Fig. 3). This prompted us to give the patient a barium meal which, on fluoroscopic observation, was seen to reach the supposed hydropneumothorax and cause a splash and distortion of the fluid level. Capsules filled with barium were seen to enter this air pouch and rest on the fluid level before disintegration (Fig. 4).

COMMENT

When these false pneumothoraces occur on the left side they must be differentiated from transdiaphragmatic hernias, which, with the exception of the few congenital cases reported in the literature, are almost invariably due to extensive shrapnel, gunshot and stab wounds, and give rise to acute symptoms, as dyspnea,

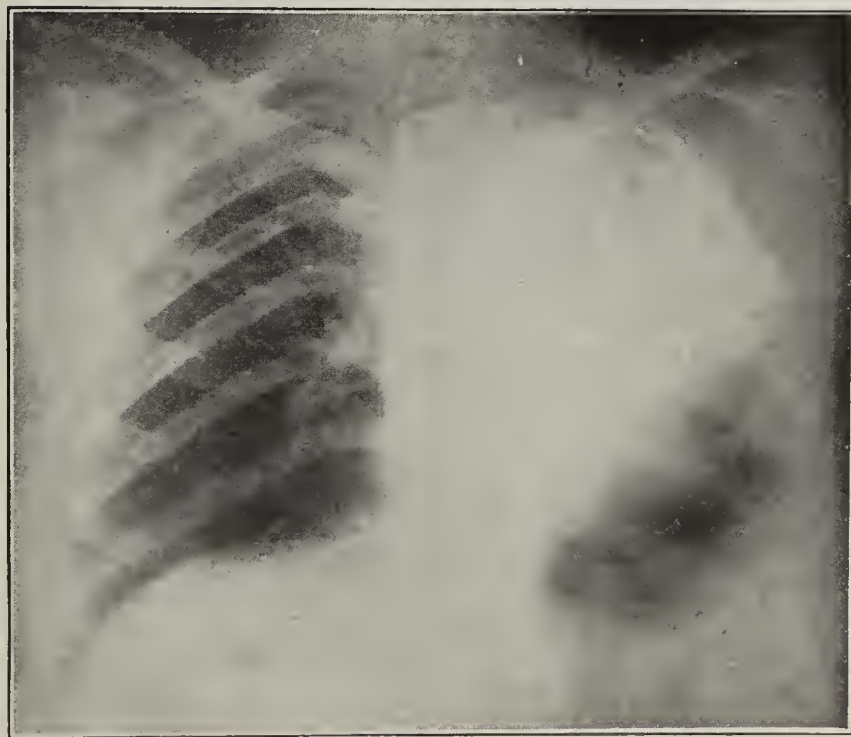


Fig. 3.—Same patient after fast of fourteen hours, showing absence of fluid level in the air-containing space at left lower lobe.

hemoptysis, hematemesis, fever and chills, which are referable to both the left lung and the stomach. Before the roentgen ray was extensively employed, a diagnosis was made in many such cases following a history of injury, tympanitic note over the area involved, or most often as a result of the protrusion of some of the abdominal contents through the wound in the chest

wall.³ A transdiaphragmatic hernia may be recognized roentgenographically by the appearance of part of the stomach above the diaphragm and part below.

Patel and Jaboulay,⁴ however, assert that a number of diaphragmatic hernias present no clinical histories, but are discovered at necropsy. It is reasonable to assume that these observers referred to the congenital form of this condition, for recent reports would indicate that all traumatic diaphragmatic hernias give rise to unmistakable symptoms which are usually corroborated by careful roentgenologic examinations.⁵

Extrapleural pneumothorax at the site of the needle puncture has been described by Gwerder,⁶ who reports a case of pneumothorax in which a large gas pouch was formed extending from over the fifth to the eighth rib in the left anterior axillary line, presumably the result of high intrapleural pressure. The pouch, which distended on coughing and sneezing, could be reduced by firm bandaging.

Barjon and Courmont mention a case in which it was doubtful whether the diagnosis should have been

3. By means of the fluoroscope a barium bolus may be seen to enter the supposed hydropneumothorax, causing a splash and distorting its fluid level.

4. A localized hydropneumothorax may be simulated by the diaphragm and stomach, when they are in a high position due either to extreme pulmonary fibrosis or gastrectasis. This possibility should be considered when an exploratory puncture is contemplated.

RADICAL ABDOMINAL HYSTERECTOMY FOR CANCER OF THE CERVIX UTERI

A REPORT OF END-RESULTS, SHOWING AN
UNUSUALLY LARGE PERCENTAGE OF
FIVE-YEAR CURES *

FARRAR COBB, M.D.

BOSTON

This report of end-results in the radical abdominal hysterectomy for cancer of the cervix uteri is made with much satisfaction. It deals with a series of sixty cases, not a very large number as compared with that of some operators, but large enough to prove that cancer of the cervix may be cured in a large percentage of cases by the properly performed radical operation. I have had 57 per cent. of five-year cures in my personal work as shown here, and an operative mortality of 11.6 per cent.

RADICAL HYSTERECTOMY AS A CURATIVE MEASURE

I fear that the report of such a large percentage of five-year cures may be received with skepticism by some, especially by those who have doubted the curability of this disease; and I am compelled to state that in following up my patients, the number of those alive and well for many years after operation has surprised as well as pleased me.

All the cases were undoubted cancer of the cervix clinically, and in all cases but one there was a corroborative microscopic diagnosis made by a pathologist of established reputation, in almost all instances by one of the pathologic staff of the Massachusetts General Hospital. It has been possible to follow up every case, and each patient has been examined by myself periodically.

The cases were by no means all selected favorable ones, and there were only two cases of very early microscopic diagnosis. On the other hand, the majority were hospital cases of varying extent, many of them more than moderately advanced cases of cancer, and a few were borderline cases in which the hope of cure by operation seemed very small (Cases 1, 6, 9, 21, 24 and 30).

I want to emphasize by means of this paper the fact that the radical abdominal operation will cure cancer of the cervix in a large number of cases, and that in skilled hands it should cause no excessive operative mortality.

For many years I have been working, writing, lecturing on cancer of the uterus: its early diagnosis, the need of pathologic examinations, and the value of radical hysterectomy as a curative measure. It is borne



Fig. 4.—Same patient, showing height of fluid level after drinking about 24 ounces of fluid, with a barium capsule projecting from the fluid level about five minutes after it was taken.

pyopneumothorax or retracted stomach. Lebon⁷ describes two cases of false pneumothorax, and more recently Aimé and Solomon have reported a case in a tuberculous patient.

The diagnosis in such conditions should present no great difficulty when it is borne in mind that:

1. These extrapleural air pouches are characterized by their failure to absorb the gas they contain. A true pneumothorax tends invariably to spontaneous absorption.

2. The height of the fluid level in a false hydro-pneumothorax varies most decidedly with the ingestion of food and with the emptying of the stomach. The fluid disappears on fasting.

3. Davis, H.: Diaphragmatic Hernia, *Internat. J. Surg.* **28**: 120, 1915.

4. Patel and Jaboulay, quoted by Aimé, P., and Solomon, J.: *Am. J. Roentgenol.* **6**: 376 (Aug.) 1919.

5. Aimé and Solomon (Footnote 4). Sanderson-Wells, T. H.: *Brit. M. J.* **2**: 687 (Nov. 24) 1917.

6. Gwerder, J.: Extrapleural Pneumothorax, *Cor.-Bl. f. Schweiz. Aerzte* **46**: 1618 (Nov. 25) 1916.

7. Lebon, H.: Faux pneumothorax, *Presse méd.* **36**: 351 (June 26) 1919.

* Owing to lack of space, this article is abbreviated in *THE JOURNAL* by the omission of the report of cases. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

in on me, however, that many medical men and even many surgeons still doubt its curability by operation, and that many patients seen sufficiently early to have a good chance of cure by hysterectomy are treated by radium or by the ill-advised Percy cautery method. It is absolutely certain that radium and the cautery cannot cure cancer of the cervix, no matter how valuable they may be as palliative treatments in the inoperable cases. The danger of the widespread exploitation of radium and the Percy method of cautery treatment is the depriving of certain persons of a chance of life by the only curative procedure, namely, hysterectomy.

My personal work on the whole question of cancer of the uterus in its different forms, its cure and its palliation, covers a period of twenty years. I performed my first hysterectomy in 1901, and it is interesting to note that this patient, my first case, operated on in my younger and more inexperienced years, is one of the cured cases today, being alive and in perfect health eighteen years afterward (Case 1). For several years, as one of the surgeons at the Massachusetts General Hospital, I held the special assignment of cancer of the uterus, seeing and operating on all the patients that came into the wards, both those with cancer of the body of the uterus and those with cancer of the cervix. In 1912 and again in 1914 and 1915, I published papers reviewing my work at the hospital and analyzing a series of 420 cases admitted to the hospital in the fifteen years from 1900 to 1914, including ninety-eight cases of my own. These papers deal with the general questions of operability, diagnosis, choice of operation, palliative treatment, etc.¹

In this paper, I wish to consider only my personal work in radical hysterectomy and the end-results thereof, including a summary of each cured case, touching briefly on the technic of the operation and the lessons that experience has taught me.

I have performed personally sixty radical abdominal hysterectomies, what generally are called Wertheim operations, but differing from Wertheim's method in certain essential modifications of my own which, while making the operation none the less radical, make it somewhat safer. Thirty-one of these operations were performed at the Massachusetts General Hospital and twenty-nine in my private practice. Thirty-five were performed more than five years ago, previous to 1915, and of these, twenty-six were hospital cases. My percentage of five-year cures has been 57.1. An analysis of my end-results in detail will be given at the end of this paper.

Among the sixty cases, there were seven operative deaths, a mortality of 11.6 per cent. One death from intestinal obstruction occurred two months after the operation and, therefore, might be omitted; but owing to the fact that the patient had not left the hospital, I have included this case in my immediate mortality, as also one other patient who died in the sixth week of septic iliac thrombosis. Five deaths occurred among my first thirty cases; but in my last thirty cases, only two: a reduction in mortality commensurate with steady improvement in technic. Three patients died from shock, largely caused by hemorrhage. The control of hemorrhage, especially toward the end of the

operation, is one of the most important technical questions. Two patients died of general peritonitis.

The operation comprised the removal of the uterus and a liberal portion of the vagina, with as much of the parametrium as possible, through a median abdominal incision, with ligation of both internal iliac arteries and removal of the regional glands when enlarged and palpable. It is a difficult operation and should be performed only by trained surgeons; but in such hands, it should not involve an excessive mortality, certainly not over 15 per cent. In my whole series of sixty cases, it was 11.6 per cent., and in my last thirty cases, only 6.6 per cent. Wertheim's mortality, in his last series of cases, was 12 per cent.

The operation should not be performed in the presence of marked obesity or debility. A renal function of 25 per cent. or less would contraindicate the method.



Fig. 1 (Case 16).—Anterior view of specimen, showing wide removal of parametrium.

With very fat or feeble patients, the more rapid and safer, but far less curative, simple vaginal hysterectomy should be the method of choice. The radical vaginal hysterectomy of Schauta and Schuchardt I have found more dangerous and difficult than the abdominal method, and the postoperative sequelae distressing.

CASES FAVORABLE FOR CURE

Undoubtedly, the most favorable cases for cure are those in which a microscopic diagnosis has been made very early; but in some of these cases I have had rapid local implantation recurrence.

In many cases, one cannot be sure whether fixation of the uterus and induration in the broad ligaments will make a curative operation impossible until one has opened the abdomen, because, in a definite percentage of cases, the fixation and induration may be due to inflammatory conditions and not to cancer; and even

1. Cobb, F.: Cancer of the Uterus, Boston M. & S. J. 167: 37 (July 11) 1912; Cancer of the Uterus, The Possibilities of Cure by the Radical Abdominal Operation, Certain Original Methods of Operating, Including an Analysis of 367 Cases at the Massachusetts General Hospital, *ibid.* 170: 861 (June 4) 1914; The Surgical Treatment of Cancer of the Cervix Uteri, *ibid.* 173: 89 (July 15) 1915.

if due to cancer, a cure may be possible. Frequently, an exploratory incision is all-important in determining the possibilities of a cure, and no man, no matter how large his experience, has a right to condemn a patient without this. The possibility of cure in advanced cases, in which an exploratory incision has determined my course of action, is definitely illustrated by some of my own cured cases.

Marked involvement of the vaginal wall contraindicates a curative operation, as does enlargement of the inguinal glands. If, when the abdomen is opened, the sacral glands are found enlarged, there is no hope of a cure. But enlargement of the iliac and obturator glands does not so contraindicate because these frequently may be enlarged without being cancerous. When palpable, they should be removed. I have removed the iliac and obturator glands in about one half of the cases. In most of the cases, they were not found to be malignant; but in those cases in which they were malignant, a cure has not been obtained. My experience with the lymphatics and small glands in the parametrium, however, is decidedly different; here metastasis takes place very early.

In all cases except those of very early microscopic diagnosis, that is to say, in every case in which there is evident cancer of the cervix, clinically, I use the actual cautery, destroying and sterilizing the cervical portion of the uterus as the first step of one operation in the least advanced and offensive cases; but in the cases of large, fungating disease with foul discharge, I have done this as a separate operative procedure, two weeks or more before the hysterectomy. This double operation I deem wise also with those patients that have lost much blood; in such cases, the period of waiting after the hemostatic cauterization is valuable in restoring strength and hemoglobin. In the last two years, I have abandoned the Percy theory as to the efficacy of a low or moderate degree of heat in using the cautery. In my opinion, this theory is fallacious, the use of the red-hot cautery point to destroy completely the diseased area being the only rational method. I have found also that other forms of the electrogalvanic cautery, soldering irons, or the old Paquelin type of cautery are safer and easier to use than the large instrument devised by Percy, the danger of burns of the vulva, bladder and vagina being much less, even though a water-cooled speculum is used.

AUTHOR'S TECHNIC

The technic of my hysterectomy has not changed in its essentials since my last published paper in 1915. The whole element of success in the operation lies in

the wide removal of the parametrium. Unless this is done, recurrence is almost certain in the lateral areas along the pelvic wall, because, although the iliac and obturator glands are involved late, the lymphatics in the parametrium become cancerous very early, and any operation leaving an infected parametrium is noncurative. There are, in my series of cases, a number in which the iliac glands were enlarged and found non-malignant, but in which a study of the removed parametrium showed cancer. The point of the whole operation is to dissect and isolate so freely the ureters, the bladder and the rectum that a large portion of the parametrium may be removed.

The operation is always long; two hours is a small allowance of time, and in cases that are difficult because of obesity or complicated by pelvic inflammatory disease with adhesions, or in those in which obstinate venous hemorrhage is encountered, much more time will be needed.

The choice of the anesthetic and the employment of a skilled anesthetist are very important. Ether is the anesthetic of choice, but I have used, whenever possible, a combined ether and spinal anesthesia, using a moderate sized intraspinal injection of tropacocain or procain to block off the pelvic operative trauma. After using this method in many cases, I am sure that shock, the chief cause of death in this operation, has been much lessened. Not only has a marked difference been noted in the amount of shock when this method has been used as compared with the cases in which ether alone has been the anesthetic, but also the patients have had much less postoperative disturbance.

The incision has been a median one, extending down to the symphysis pubis and well above the umbilicus. Considerably

more room may be gained by dividing transversely the anterior sheath of the rectus muscles, or in the more difficult cases their tendinous insertions to the pubis. Repair may be rapidly and efficiently done at the end of the operation.

The dissection and handling of the ureters, freeing them completely from the parametrial tissues, is the most important technical part of the operation. The ureters should be so free that they may be lifted up and out of the pelvis, at the same time preserving their blood supply, thus avoiding necrosis and urinary fistula. The use of intra-ureteral bougies is ill advised because unnecessary and time consuming, and it is also dangerous since the bougies prevent free displacement of the ureters. It is my practice to use tapes to lift the ureters up and out of the way, a method described and illustrated in previous papers, by which I feel that the maximum amount of safety may be obtained in dissect-



Fig. 2 (Case 16).—Posterior view of specimen.

ing the vesical end of the ureters, freeing the bladder and rectum, and excising the parametrium. While a reasonable degree of care must be used in handling the ureters, so as not to cause necrosis, they have been in all my cases freely retracted and elevated out of the pelvis, and in none has a urinary fistula from a damaged ureter followed. I have had only two urinary fistulas: in one case, a temporary vaginal leak following a suture of the bladder; and one other, in a case of anastomosis of an accidentally cut ureter. This patient subsequently came to nephrectomy. This freedom from ureteral fistulas, in the light of the reported experience of other operators, has surprised me.

RESULTS IN SIXTY CASES OF RADICAL ABDOMINAL
HYSTERECTOMY

Total number of radical hysterectomies	60
Hospital cases	31
Private cases	29
Operated on previous to 1915.....	35
Operative deaths	7, or 11.6%
Operative deaths in last 30 cases	2, or 6.6%
Number of cases traced	All
Alive and well over 5 years	20
Alive and well over 4 years	3
Alive and well over 3 years	3
Alive and well over 2 years	7
Alive and well over 1 year	2
Summary of operations previous to 1915:	
Total number done over 5 years ago.....	35
Hospital cases	26
Private cases	9
Operative deaths	5
Recurrences	10
Alive and well over 5 years	20
Percentage of cured cases	57.1

After the ovarian arteries have been ligated, and the broad ligaments opened, the peritoneum being split well above the bifurcation of the iliac arteries, the ureters are exposed lying in their sheaths on the inner or posterior layers of the broad ligaments. The internal iliac arteries are then ligated with catgut, after which the posterior layers of the broad ligaments are incised below and parallel to the ureter, midway between the bifurcation of the iliac arteries and the uterus; and through this slit in the broad ligament, tapes one-half inch wide are passed, traction on which rolls a protecting cuff of peritoneum around the ureters. With such protection, considerable traction can be made safely on the ureter. In cases complicated by inflammatory disease, dissection of the ureters is always more difficult, and the preservation of the broad ligament often impossible; but in such cases, I have had no evil consequences from the use of the tape tractors.

The accidental cutting across of a ureter is a very serious matter, one requiring fine judgment and experience to determine the subsequent procedure in each case. The extra time required to anastomose the severed ends or preferably, when possible, to implant the proximal end in the bladder, may be the cause of death from shock. I have divided the ureter inadvertently twice: one patient died from shock distinctly contributed to by the time required to anastomose the ureter; in the other case, the patient recovered, but the anastomosis was not a success and a urinary fistula and infection of the kidney resulted, necessitating nephrectomy later. This woman is alive and in perfect health today, four years afterward (case of Mrs. F. B., sent me by Dr. MacDougall of Haverhill, Mass., and operated on in 1915). Rather than subject the patient to the extreme added risk of death by taking time for ureteral anastomosis or implantation, one would be justified in ligating both ends of the divided ureter and

staking the recovery of the patient on the functional capacity of the other kidney for the time being.

The most discouraging recurrences are the ones of early implantation metastasis. When such metastasis occurs, one should always suspect faulty technic in amputating the vagina. Necessary precautions against this form of recurrence are the thorough destruction of the diseased cervix by the preliminary use of the cautery, scrupulous disinfection of the vagina with iodine, and use of the double right-angled vaginal clamps and a cautery knife in cutting through the vagina.

After the uterus and upper half of the vagina have been freed from the bladder and rectum, the ureters should be lifted well out of the way by the tapes, and the lateral parametrium from above the internal os, well down the sides of the vagina, should be removed with scissors as close to the pelvic wall as possible. It is at this stage of the operation that one is liable to have trouble with obstinate hemorrhage. I have learned that this part of the operation may well be dreaded as time consuming. After the operation has been completed to all intents and purposes, checking this venous hemorrhage may cause a delay of over half an hour. The use of properly designed right-angled artery clamps is valuable in securing hemostasis deep down in the pelvic hole at this time. Ligation of the internal iliac arteries at an early stage of the operation is a decided help in lessening hemorrhage, and I am certain that it does not in any way increase the chance of postoperative sepsis or sloughing, or cause postoperative cystitis.

Vaginal drainage by a small gauze wick or a cigaret drain has always been used.

A summary of the results obtained in my series of sixty radical abdominal hysterectomies is given in the accompanying table.

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A BENZIDIN-POLYCHROME STAIN
FOR BLOOD *

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For the accurate identification of endothelial leukocytes in blood smears, I have published an earlier report¹ of a staining method employing the so-called "oxydase or peroxidase" reaction. In this method the reagent employed was alphanaphthol, which brings out a blue granulation in the cytoplasm of the reactive leukocytes. Since the granulation is blue, a red nuclear stain was chosen; and the fact that the dilute basic fuchsin solution colors nuclei rather lightly detracts from the value of the stain. A second disadvantage of this earlier method is that the differential coloring of the blood elements in general which has brought the polychrome blood stains (Wright's and others) into universal use is not obtained. The greater accuracy in the identification of the leukocytes secured by the benzidin-polychrome combination, together with the preservation of the blood picture that hematologists now are so accustomed to, will, it is believed, make it of distinct clinical value in the examination of pathologic human blood.

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1. McJunkin, F. A.: Differential Blood Count, Arch. Int. Med., 22: 157 (Aug.) 1918.

The method described in this article combines the "oxydase" reaction, which brings out the leukocytic granules, with polychrome staining of the remainder of the blood elements. The method, an account of which was published by Graham,² suggested to me the combination of benzidin and a polychrome stain. For fixation, Graham uses formaldehyd-alcohol, which does not permit of polychrome staining, as the corpuscles retain a deep blue color that cannot be washed out, and the nuclei stain blue. It was found that methyl alcohol of 80 per cent. strength made by adding 5 c.c. of distilled water to 20 c.c. of Merck reagent methyl alcohol, which is about 99.5 per cent. concentration of alcohol, preserves the leukocytic granulation so that smears fixed in it may be stained by Wright's or other polychrome stains, and the success of the benzidin-polychrome stain rests largely on this observation. The only precaution necessary is that the blood smears be allowed to dry for an hour or more before being stained.

BENZIDIN-POLYCHROME STAIN

The method which has now been used in this laboratory for several months on human and animal blood is as follows:

On a 22 mm. square cover glass (No. 1) 4 drops of 80 per cent. methyl alcohol, to 25 c.c. of which there has been added 100 milligrams of benzidin (Merck or that obtained from the Will Corporation) and one drop of hydrogen peroxid, are placed for thirty seconds; this is diluted with 8 drops of distilled water, and the diluted solution is allowed to act for four minutes. The solution is then washed with distilled water and blotted between filter paper; 4 drops of distilled water and 4 drops of polychrome stain (Wright's blood stain) are added, the diluted stain is allowed to act for four minutes, and then it is washed, blotted, dried in the air, and mounted in balsam. All solutions are dropped from similar bottles, with or without a snout-leak, and not from pipets. The benzidin solution keeps for several weeks. The depth of the granule stain is much increased by diluting the benzidin reagent with a phosphate solution having a hydrogen-ion concentration of p_H 6.4 instead of with distilled water. Such a phosphate solution is prepared by adding 63 c.c. of fifteenth-normal (9.078 gm. to the liter) of monobasic potassium phosphate (Merck reagent) to 27 c.c. of fifteenth-normal (11.876 gm. to the liter) dibasic sodium phosphate (Merck reagent). The phosphate solution is also used for diluting the Wright stain. In using the phosphate solution it is necessary to place 2 drops of the benzidin reagent on the cover glass for thirty seconds, dilute with 16 drops of the phosphate solution, and allow the dilution to act for only one minute. Since the amount of reactive substance in the leukocytes of guinea-pig blood is much less than that present in human blood, 8 drops of the phosphate solution are used to dilute 4 drops of the benzidin, and a reaction time of four minutes is allowed in staining the blood of this animal. If the granules are colored too heavily, the structure of the neutrophils and eosinophils is obscured and the dilution with water (or phosphate solution) should be increased and the time shortened. The character of the polychrome stain is important, and a perfect stain must be used. In this laboratory, a sample of polychrome stain had so changed in two weeks at room temperature that it gave very imperfect results.

The granules of the neutrophils, endothelial leukocytes, and eosinophils stain dark brown, while all other blood elements are colored exactly as they are in a simple Wright's stain. The basophilic granules are a rich purple; the large eosinophilic granules are brown and have a ringlike appearance due to their refractive centers; the neutrophilic are dark brown, irregular in

shape, and thickly set in the cytoplasm, while the robin's-egg blue of the lymphocytes is entirely non-granular except for the characteristic "azur" metachromatic granules of a bright reddish color present in some of them. With the uncombined Wright's stain, although the polychrome staining is perfect, there are no positive data regularly present by which to differentiate endothelial leukocytes from lymphocytes, on the one hand, and from those neutrophils that have more or less horseshoe-shaped nuclei, on the other. This disadvantage which attaches to the uncombined Wright's stain is due to the fact that the granulation may not be brought out at all in a certain number of the endothelial leukocytes, in which case they would be mistaken for lymphocytes; and at best the granules are very fine. In the differentiation the nucleus does not deserve the importance so commonly attached to it, since it is perfectly round in some endothelial leukocytes, while in a small number of lymphocytes it shows indentations. In contrast to the results obtained with Wright's and other polychrome stains, which are for these reasons unsatisfactory, the "oxydase" granulation makes identification of the endothelial leukocytes much easier; for in the cytoplasm of these cells there are always distinct discrete dark brown granules. There is no difficulty even with the simpler stains in the identification of the usual neutrophils, for in the endothelial leukocytes there is no filamentous connection of nuclear masses; but in the case of the younger neutrophils in which the nucleus has not become typically lobulated, uncertainties may arise. After application of the "oxydase" reaction, however, the granules in these immature neutrophils are so conspicuous that the separation of these younger neutrophils (metamyelocytes) and the endothelial leukocytes is rather easy. Immature neutrophils are seen to the best advantage in smears of blood from cases of chronic myelogenous leukemia, in which there are many metamyelocytes and in which the younger forms of the bone-marrow cells with their heavy granulations are well brought out.

The differential counting of guinea-pig leukocytes after Wright's staining is more difficult than it is in human blood, and some confusion appears in published classifications of the white cells of this animal. With the benzidin-polychrome stain the guinea-pig leukocytes are found to fall clearly into the same five classes as those of human blood. The brownish neutrophilic granulation is not heavy; and frequently in the endothelial leukocytes there are only three or four distinct brown granules, and these are likely to be grouped together in a focal area in the cytoplasm, especially at the point where the nucleus is indented. The blood of guinea-pigs with an artificially produced endothelial leukocytosis³ shows these peculiarities much better than the blood of the normal animal in which there are few of these leukocytes.

It is necessary that the polychrome stain used be a good one; that is, the chromatin must be colored purple or reddish so that in the lymphocytes the nucleus appears in marked contrast to the blue cytoplasm. During a six months' period this laboratory obtained four samples of Wright's stain, of which two stained well and two gave no chromatin staining manifested by a reddening of the nucleus. After standing two weeks, one of the two faulty samples gave a rather poor polychrome effect. This is the usual experience

2. Graham, G. S.: J. M. Research **39**: 15 (Sept.) 1918.

3. McJunkin, F. A.: Experimental Endothelial Leukocytosis in Guinea-Pigs, Arch. Int. Med. **24**: 295 (Sept.) 1919.

in ordering Wright's, Hasting's, Wilson's, Leishman's and other polychrome stains from commercial sources. In order to have constantly at hand for use in the polychrome-benzidin stain a polychrome solution that is uniform in action, it is advisable to prepare a stock polychrome as described below from which the blood stain may be made as often as desired.

POLYCHROME BLOOD STAIN

I⁴ have described a polychrome blood stain that gives constant results when fresh; but, like the earlier ones, it has been found to deteriorate in a few weeks. Since the publication of this method, the constituents giving the polychrome effect have been found to keep much longer and perhaps permanently in a concentrated glycerin solution, and the stain made in this way has been used in the benzidin-polychrome process, although any good Wright's or other polychrome stain is just as satisfactory. The method of preparing the polychrome blood stain is as follows:

One gm. of methylene blue (Grübler's B. X.), 50 c.c. of decinormal sodium carbonate, 25 c.c. of distilled water, and 25 c.c. of glycerin (Merck reagent) are placed in a 500 c.c. beaker, and heated on asbestos gauze over a low Bunsen flame for one hour at from 87 to 89 C., the ingredients meanwhile being constantly stirred with a mechanical stirrer at the rate of about 120 revolutions per minute. The heating and stirring must be carried out carefully to secure correct polychroming. A mechanical stirrer may be improvised by unscrewing the top from a small electric or water centrifuge, replacing it with a half-inch wooden wheel with a groove for carrying a cord belt, and running the stirrer, with a 2-inch wheel on its top, directly from this. Ten c.c. of distilled water are added at the end of ten, twenty, and thirty minute periods.

At the end of the hour, 5 c.c. of distilled water and 50 c.c. of glycerin (Merck reagent) are added, and the stirring and heating are continued for five minutes; and any dry dye is carefully rubbed from the sides of the beaker into the liquid. There are added 0.75 gm. of eosin (Grübler's yellowish, water soluble) and 0.75 gm. of methylene blue (Grübler's B. X.), and the heating and stirring continued at the same temperature for fifteen minutes. While hot it is poured into a 100 c.c. graduate and made up to exactly 100 c.c. with glycerin, any dye adhering to the sides of the beaker being taken up with the extra glycerin added. It is then poured into a 4-ounce bottle and shaken at intervals for fifteen minutes. Methylene blue and eosin obtained from the Will Corporation, Rochester, N. Y., have given results as satisfactory as those obtained with the Grübler dyes.

The dry dyes are weighed out on analytic balances, and the carbonate solution, which is made decinormal by titration against hydrochloric acid with methyl orange as an indicator, is run in from a buret. All glassware must be free from traces of acid.

From the stock solution prepared in this way, the blood stain is made by adding 3 c.c. with a bulb pipet to 25 c.c. of methyl alcohol (Merck reagent), the alcohol being drawn into the pipet several times to remove the concentrated glycerin solution. All solutions of polychrome stains, except a concentrated glycerin one, change on standing so that the blood stain must be made up from the glycerin stock solution every two or three weeks. In this way it is possible to prepare a polychrome blood stain that has a reaction accurately adjusted and one that can be readily made up in small amounts so as to prevent deterioration. The latter was not accomplished by the method previously

reported. It is possible that the stock glycerin solution may deteriorate after several years, but there is no evidence of change after a six months' period.

To apply the stain to unfixed films, 4 drops of the solution are placed on a 22 mm. cover glass held in suitable forceps, or suitably supported on the top of a small test tube, for one-half minute to fix the preparation. Four drops of distilled water are added, and the stain so diluted is allowed to act for four minutes. It is then washed with distilled water until the film turns uniformly pink. Both stain and distilled water are dropped from bottles and not from a small capillary pipet. A phosphate solution with a hydrogen-ion concentration of p_H 6.4 may be used instead of distilled water for dilution.

Spirochetes and protozoa may be stained heavily by placing the preparations fixed in methyl alcohol for forty-five minutes in a bath made by adding 4 drops of the stock glycerin solution to each cubic centimeter of distilled water. The preparation is removed from the bath, and, after washing out the excess of blue, mounted in the usual way. Cover glasses are floated and slides supported with the preparation side down in such a way as to bring the part to be stained as near to the surface of the liquid as possible. The results obtained compare very favorably with those secured by the Giemsa technic.

DEATH FOLLOWING SPINAL ANESTHESIA

WITH REPORT OF A CASE

JAY IRELAND, M.D.

CHICAGO

Lumbar or spinal anesthesia was first employed by Corning; it was rediscovered and improved by Bier. During the recent epidemic of influenza, there was a need for an anesthetic other than that which might irritate the respiratory passages.

REPORT OF CASE

History.—Mr. C., aged 68, Scotch, a plasterer, entered the ward for nervous patients of the Cook County Hospital, Jan. 15, 1919, complaining of pain in the right side of the chest, eczema of the hands and feet, varicose veins of the legs, and inguinal hernia. The pain in the right chest started, Jan. 10, 1919. It was sharp and stinging, and extended around to the front of the chest at the level of the costal margin. He had had phlebitis in 1901 and 1911, and gonorrhea in 1899, but he denied chancre. He had taken a few drinks of alcoholic liquor a day for the past few years, and had smoked moderately. The family history was negative.

Physical Examination.—The patient was well nourished, not acutely ill, and was mentally normal. The scalp, face, ears, tongue, teeth and pharynx were negative. The pupils were regular and reacted to light and accommodation. No nystagmus was present. The chest was emphysematous; the heart, negative; but the peripheral vessels were sclerosed. The liver was palpable at the costal margin. A large right inguinal hernia was present. Marked varicose veins of the legs were present. Eczema of the hands and feet was present. The reflexes were all normal and present except the abdominals, which were absent.

Clinical Course.—January 19, the pain in the chest, which was diagnosed intercostal neuralgia, disappeared. After lumbar puncture, 3 grains of apothecin were introduced into the spinal canal by the French method (after mixing with spinal fluid) by gravity with the patient in a recumbent position. He was placed in the sitting position, but became

4. McJunkin, F. A.: A Polychrome Stain with Advantages Over the Giemsa, J. A. M. A. **65**:2164 (Dec. 18) 1915.

cyanotic. Herniotomy was performed. Four hours later the systolic blood pressure was 98; the diastolic, 62. The pulse was 60 and was very weak. January 22, he was very incoherent and cyanotic, mumbled frequently, and had to be restrained. January 23, he was more stuporous, and involuntaries occurred; these continued till death. January 24, the right arm was flaccid; and the Babinski, Oppenheim, Gordon, and Chaddock signs were positive on the right. He moved his lips, but made no audible sound. Motor aphasia was present. January 28, the left parotid gland was swollen. January 29, right facial paralysis developed. February 1, slight increased fremitus with crepitant râles was present in the right lower lobe posteriorly. The temperature was 102 F., and respiration was 32. The right pupil was larger than the left; but the fundi were normal. The patient died about six hours after the lung findings began.

Necropsy.—This was performed by Dr. J. P. Simonds, February 3. Findings of sections of the brain, transversely, are:

Section 1 (through the genu of the corpus callosum and anterior tip of the lateral ventricles): There are a few sub-endymal petechial hemorrhages on both sides. On the left, the corona radiata is soft and grayish; there are petechial hemorrhages in the gray matter of the inferior frontal gyrus; the anterior portion of the island of Reil is dark and red. On the right side, the upper portion of the corona radiata is slightly softer than the adjacent tissues.

Section 2 (through the posterior portion of the septum pellucidum): On the left side, the caudate nucleus is normal. The internal and external capsules and the lenticular nucleus are soft and gray; the corpus callosum is normal in appearance. There is hemorrhage into the superior temporal gyrus; there is an area of hemorrhage into the white matter adjacent to the superior temporal gyrus 0.5 gm. in diameter. On the right side, there are no gross changes of importance.

Section 3 (through the thalamus): On the left side, the internal and external capsules, the lenticular and caudate nuclei, and the corona radiata are soft, and disintegrated, and gray; the superior temporal gyrus is hemorrhagic. On the right side, the superior portion of the internal capsule, the external capsule, and the lenticular nucleus are soft, disintegrated, and gray.

Section 4 (through the splenium of the corpus callosum): Almost all the white matter on both sides is soft, disintegrated, and gray, the condition being somewhat less marked on the right side. Almost all the cortex of the left temporal lobe is soft and dark.

Section 5 (1 cm. posterior to the pulvinar): On the left side, there is hemorrhage with softening about the calcarine fissure and over the posterior portion of the temporal lobe involving the entire thickness of the cortex. The right side shows no gross change.

COMMENT

This case does not present the ordinary findings of cerebral hemorrhage because of the numerous petechial hemorrhages. Houghton¹ states that the higher nerve centers are as a rule unaffected by a spinal anesthetic, and, speaking of stovain, that it seems highly probable with its use as a spinal anesthetic, that its specific action is limited almost exclusively to the locality into which it is injected in moderate doses. The experiments of Barker tend to show that a fluid injected into a tube, the shape of the spinal canal, does not remain in the place where it is injected. Hence some of the fluid injected in spinal anesthesia may travel toward the brain. Bier believes that epinephrin prevents the diffusion toward the brain. Just because a substance in a fluid is heavier than a fluid, it does not follow that this substance will remain where it is placed in the fluid, or at the base of the column of fluid as shown by Barker. Hence it does not follow that apothecin will

remain in the caudal portion of the spinal canal. Houghton states that spinal fluid becomes milky in nature when stovain is added, and microscopically some particles of a milky nature are seen in it, which in a course of time run together into larger globules.

The low blood pressure following operation was in this case probably due to the cerebral hemorrhage. However, Yount,² and Porter and Smith³ state that spinal anesthesia causes fall of blood pressure, and that the amount of fall of blood pressure appears to depend on the amount of drug injected. The manufacturers of apothecin, Parke, Davis & Co., claim that it is less toxic than any other local anesthetic. Eggleston and Hatcher⁴ have shown that in cats, at least, procain is less toxic than apothecin. Bevan⁵ reports using 13½ grains of apothecin at one operation.

Spielmeyer examined the central nervous system of thirteen patients dying after spinal anesthetics. The changes for the most part consisted of degeneration of the motor ganglion cells of the anterior horns, and were seen low down and high up in the cord. In some, the changes were so prominent that they would seem to be irreparable; but none of these changes were found in cases in which the dose did not exceed nine-tenths grain. His experiments with dogs gave the same results. Klost and Vogt's experiments gave the same results. They found chromolysis in some of the anterior motor cells. When physiologic sodium chlorid was used instead of anesthetic solution no changes were observed.

Thompson and Nagel⁶ state that death is probably due to the action of the drug on the vasomotor fibers supplying the splanchnic area. The cause of death in the case herewith presented was due to cerebral hemorrhage. Whether this hemorrhage was due to toxic action of the apothecin on the cerebral vessels cannot be definitely stated. The fact that the blood pressure is lowered by spinal anesthetics would seem to indicate that it was not due to the usual cause of cerebral hemorrhage, i. e., high blood pressure with arteriosclerosis.

5412 North Clark Street.

2. Yount, C. C.: *Isthmian Canal Zone, Med. A. Proc.* **9**, Part 2: 51 (July) 1916.

3. Porter, William, and Smith, G. R.: *American Year Book of Anesthetics and Analgesia*, 1915, p. 399.

4. Eggleston, Cary, and Hatcher, R. A.: *The Pharmacology of the Local Anesthetics*, J. A. M. A. **73**: 1256 (Oct. 25) 1919.

5. Bevan, A. D.: *S. Clinics*, Chicago **1**: 37 (Feb.) 1917.

6. Thompson, G. F., and Nagel, J. S.: *Illinois M. J.* **26**: 62 (Aug.) 1919.

The Hospital in a Small Community.—As usual in a small community, the two general hospitals seem to be regarded as competitors. It might seem that the community has work enough for both hospitals to do but, of course, there is room for competition if each seeks to monopolize the profitable patronage of the well to do. What will be the outcome of such rivalry? Will each institution, like a hotel, bid for trade regardless of the actual needs of the community? Will costly equipment be duplicated and high salaried employees multiplied until the cost of good hospital service reaches a maximum limit in both institutions? Or will one hospital, by virtue of its wealth and reputation, attract patients who can pay for the standards of service it maintains, while the other lowers standards as much as it dares, making its bid for patronage on the score of cheapness? And, meanwhile, what will be the fate of that part of the community which makes no demand for hospital care, both because it cannot afford the price and because it has not learned the value?—M. K. Chapin, *Modern Hospital*, December, 1919.

1. Houghton, W. H.: *Oxford Surgery*, Ed. 1, New York, Oxford University Press **1**: 119, 1913.

THE MEDICAL RESERVE OFFICER
IN THE WAR*

LOUIS J. HIRSCHMAN, M.D.

DETROIT

So much has been written about the medical reserve officer and his activities in the great war that anything more said may seem to be mere repetition and superfluous. What I shall say will not deal with the scientific aspect of his connection with the army or with the methods of treatment of wounds or diseases incident to military life. I wish to speak in a broad way of the medical reserve officer himself—what he did for the army and what the army did for him. Whatever may be said of a critical nature is brought out merely in the hope that in the reorganization of the Medical Reserve Corps, cognizance may be taken of the errors made in the past with the hope that these may be avoided in the future.

While it is true that services of tremendous value to the soldier were rendered by the medical reserve officer in the cantonments, training camps and hospitals situated in this country, it is not my intention to discuss this phase of the subject, first, because of my personal ignorance of their duties, since my service was overseas, and, secondly, because I wish to discuss only the medical reserve officer's work in the war zone.

In 1908, the original Medical Reserve Corps was organized. Its personnel was selected from among the leaders in the profession throughout the United States. This was done for the purpose of giving the Reserve Corps a high standing because of the high character and professional attainments of the individuals invited to become "charter members" of the corps. After a couple of years, interest was again revived in the Medical Reserve Corps, so that by 1911 a corps of approximately three times the size of the regular army medical corps was organized.

Under limitation by a law in force at that time, all medical officers were commissioned as first lieutenants. After a space of a few years, during which time the medical officers would occasionally receive pamphlets and booklets published by the army, a correspondence course was established, and Medical Reserve Corps officers were invited to take a short course in training camps established throughout the country. A few medical officers accordingly availed themselves of the opportunity to become acquainted with the mysteries of "squads right," "morning sick report" and "service records" and their importance as cogs in the army medical machine.

INEQUALITY OF RANK

When the new bill was made law, abolishing the old corps, making the Medical Reserve Corps a part of the Officers' Reserve Corps, the rank to which a medical officer might be commissioned was raised to that of major. For some strange reason, in every other division of the Officers' Reserve Corps, the maximum rank which a reserve officer could attain was that of colonel. This was an injustice which subsequent events proved to be a severe detriment to the fullest efficiency which officers of the Medical Corps of the highest professional standing in civil life were able to render in service.

It was very soon realized by officers in the Medical Reserve Corps in overseas service that a man's professional ability, experience or attainments were judged, not by his position in the profession in civil life but entirely by the insignia of rank which he wore on his shoulder. In the dealings with medical officers of allied armies and especially with line officers and those of other staff corps of our own, this was too often the rule; and, unfortunately, the American medical officer was often outranked by his professional brothers occupying a similar position with the allied armies.

Those medical reserve officers who responded at once to the nation's call after war was declared, and who accepted whatever commission was given them without question because of their patriotic desire to serve and who went overseas in the spring and summer of 1917, have good cause to remember the penalty imposed on them by the War Department. To be a pioneer proved to be a misdemeanor or crime, because medical reserve officers who blazed the medical trail in France and who had toiled for months in helping to work out our scheme for hospitalization and for the care of the sick and wounded were presently forgotten when promotions were handed out by the powers that be.

Several months after the medical work in France was fairly well organized by the early birds, who were mostly lieutenants and captains and a few majors sprinkled here and there, a crop of newly made majors arrived on the scene. These officers, for the most part, were younger in years and experience than many of the lieutenants and captains in overseas service, and were comfortably enjoying the emoluments and comforts of civil practice while their predecessors had gone overseas and prepared the way for them.

What was our astonishment to find that many of these officers had never heard of the original Medical Reserve Corps. These officers either received their majorities direct from civil life or, after spending from sixty to ninety days in training camps, were rapidly promoted to majors and sent overseas to outrank in many cases their teachers and hospital heads at home.

It was interesting to note that at the early meetings of medical officers in Paris under the auspices of the American Red Cross, there was an absence of service stripes on the sleeves of young officers whose shoulders shone with brand new brightly polished golden oak leaves; while beneath those single and double silver bars of their more mature companions sprouted a goodly number of gold service stripes on the left sleeve and, here and there, a wound stripe on the other.

The first assistant to the chief surgeon of the American Expeditionary Forces, none other than our present Surgeon-General, soon recognized the inequality of rank among his medical reserve officers, and earnestly endeavored to rectify this inequality by recommendations for promotions made toward the end of 1917. For some as yet unexplained reason, the general staff frowned down on any promotions in the Medical Reserve Corps, while they raised the regular army medical officers at least one grade.

In the meantime, promotions up to the grade of brigadier-general were being made in other reserve corps of the army, and the officers so promoted, a few months previously, in civil life, had never heard of the corps in which they were now occupying responsible positions. At the same time, the medical profession

* Read before the Mississippi Valley Medical Association, Louisville, Ky., Oct. 21, 1919.

was furnishing the only reserve officers who had technical training in the department in which they were to serve.

I know of one instance in which the president of a large bank whose only interest in railroad engineering was the possession of large blocks of railroad securities was commissioned as lieutenant-colonel in the engineering corps and rapidly promoted to colonel, later becoming brigadier-general. In the meantime, surgeons whose names were household words in America were serving as captains, in a few cases as majors.

ATTEMPTS AT CORRECTION

It was not until the spring of 1918, nearly a year after some of the reserve officers had begun their service in France that, through the loophole of the National Army, some majors became lieutenant-colonels. The lieutenants and captains, however, without regard to their professional attainments, were still outranked by their interns, assistants and students fresh from home. In spite of all this, let it be said for the medical reserve officers that they kept on doing their duty and attending the sick and wounded, always cherishing the hope that some day conditions would be remedied. The result was that in many hospitals and even in line organizations, lieutenants and captains whose professional and military worth was early recognized were holding responsible administrative positions which, according to the tables of organizations, should have been occupied by officers of field rank. In some of our base hospitals, a captain, and in at least one case a lieutenant, was director in charge of the surgical division; and in one of our famous National Guard divisions, the ranking regimental medical officer for several months, and at the front, was a first lieutenant!

In the spring of 1918, in all other departments of the army, promotions began to appear. The Medical Department, realizing that the position of the pioneer medical reserve officer was unjust and humiliating, endeavored to find some way to remedy the existing conditions. After much thought and many conferences, a wonderful scheme which secured the approval of the general staff was decided on. This was the scheme to promote medical officers, not by the value of their services or of their professional qualifications or of their length of active service, but first and foremost by their age. It was decreed that no matter how valuable a first lieutenant's services might be, if he was unfortunate enough to have been born at so recent a date that he was not 35 years of age, he could not be promoted to a captaincy. Until he had reached the dignity of 40 years of age, no matter how valuable and efficient an officer in the Medical Corps he was, a majority was denied him.

The chief surgeon's office, in an endeavor to get the approval of the general staff on these so-called "corrective" promotions, secured the following concession: For every three months of active service the officer was to receive a year's credit in computing his age for the purposes of promotion. In other words, a lieutenant 33 years of age, who had served six months, would be considered 35 years old for the purpose of promotion to a captaincy. When the first large batch of recommendations for promotions was sent to Washington in July, 1918, however, the actual age was the basis, and not the actual age plus the credit for active service. The names of the officers who did not attain

the actual age required were put on a roster for future promotion which was to include the added credit for actual service. Officers showing exceptional ability or meritorious service were supposed to be exceptions to the general rule. If such exceptional promotions did occur, the majority of medical reserve officers in France and England never heard of them.

UNFORTUNATE RESULTS

Why the reserve medical officer, professionally equipped for his work, was held down arbitrarily by an age limit, while in every other branch of the service the age limit was unheard of, is one of the mysteries of the war on which the medical reserve officer would be pleased to be enlightened.

Many faithful and efficient men were so disappointed by this ruling that their morale was severely affected, and, in spite of themselves, they were not giving their best efforts to their work. The conditions were so intolerable that apologetic and explanatory official circulars were published; in the meantime, however, promotions, except for a few which came through strictly on the age propositions, were slow to come to the medical reserve officer.

It was of the utmost importance that medical officers of high standing in the profession should insure the enforcement of their recommendations. Think of the humiliating position of a leading surgeon of one of our great cities, ranking as a captain, endeavoring to have certain important regulations enforced in a regiment whose colonel in civil life was a merchant who "hadn't much use for doctors."

When rank was needed the most by reserve medical officers, it was denied them by the general staff. Months after the armistice was signed and their relations with medical officers of allied armies and with other officers of our own were on an entirely different plane, then apparently as an act of eleventh-hour repentance, promotions were passed out freely. After the activity of war was over and medical officers were getting impatient awaiting their turns to go home, these belated promotions were not accepted in the spirit which they would have been had they come when higher rank was most needed. On account of the fact that the average practitioner of medicine is not a good business man, many left their families in meager circumstances. When one considers that a practitioner leaving his practice makes a greater sacrifice than the business man who leaves a "going concern" for his assistants to run, the financial part assumes great importance. The difference in salary and commutation between lieutenants' or captains' and field officers' rank meant often the difference between comparative want and comfort for the dear ones at home.

It would be interesting to see the proportion of medical reserve officers who saw overseas service who are now members of the Medical Reserve Corps, as compared with those who refused commissions in the corps. I have listened to conversations between discharged medical officers time and time again, and have found that the feeling of the great majority was that they had been unjustly treated, and that unless the situation was greatly improved, they would hesitate a long time before rushing into service again.

I believe that the "powers that be" at Washington are now commencing to realize that the medical reserve officer was not treated fairly, and I feel that with the

full knowledge of the valuable services rendered by the corps, the reorganization of the Medical Reserve Corps will give the medical officer at least an equal standing with the reserve officer of any other corps of the army.

Our regular army medical corps was, of course, pitifully small at the beginning of the war. Let me say this to the credit of those few men: They had to be spread out very thin in order to form any sort of a backbone to the organization. This meant, of course, that they were all required for headquarters and administrative work and to instruct reserve corps officers. It therefore necessarily followed that all of the professional work, with a very few exceptions early in the war, was done by the reserve corps officers.

The medical reserve officer showed such a marked aptitude for his work that very soon many important administrative positions were likewise filled by reserve officers. The glowing reports of Surgeon-General Ireland testify to the wonderful work done by the medical reserve officers.

From personal observation of the service rendered in front line positions by the reserve officers, I wish to say that patients came back to the field hospitals, in the main, in most excellent condition. The exceptions to this rule were so few that they need practically not be mentioned. In evacuation and base hospital work, medical and surgical teams were composed of men who were leaders at home, and sick and wounded soldiers received a type of professional care that has been seldom surpassed in our leading city hospitals. The casualties among medical reserve officers were high, as were also the citations and awards for individual bravery.

Let it be said to the credit of our profession that, though smarting under the lack of recognition of their work and deserved promotion, they "delivered the goods" in a way that will always remain a tradition to be looked up to by the coming generation. The fact, however, that of 35,000 medical officers in service, a little over 10 per cent. have accepted commissions in the present reserve corps indicates that much missionary work must be done by the officers in charge.

SUGGESTIONS FOR THE BUILDING UP OF AN EFFECTIVE MEDICAL RESERVE CORPS

It is hoped that this subject will be discussed by the members of this association, and that in the discussion will be brought out suggestions which will prove of value to the Surgeon-General's Office in the building up of a reserve corps of excellent personnel and of goodly numbers. Might I make the following suggestions:

1. In order to secure an efficient corps, we have now a wealth of material from which to select its personnel. Approximately 35,000 physicians have seen active service, and a goodly proportion overseas service in the theater of operations. It is proposed, therefore, that all commissions in the Medical Reserve Corps for the next five years be limited to men who have been in active service.

2. Since the Surgeon-General's Office is in possession of data as to the fitness, capability, medicomilitary experience and military adaptability of every medical officer, this information will be of the greatest value in securing the highest type of material for medical officers.

3. Since it is now well recognized that inequality and injustice were frequent in the grading of Medical Reserve Corps officers, particularly in overseas service, it is suggested that all officers be recommissioned in the reorganized corps. Many officers deserve, by the character of their work and the positions they filled, much higher grading than that with which they were discharged. Others were graded notoriously too high for the service they rendered.

4. It is recommended that all applicants for positions who have not seen military service be commissioned as first lieutenants. Since there are so many thousands of officers whose military experience and adaptability are on record, it is obviously unfair to these that a man from civil life should receive higher military commission than one who has shown his worth in active service. Every man in the profession, no matter how prominent he may be professionally or medicopolitically, had his opportunity to do his bit during the war. If he did not, he should take his place at the end of the line if he wants to join the corps at this late date. If all officers start as first lieutenants, they can be promoted as soon as they show that they are qualified to perform the duties of higher grade.

5. In securing professional information and data regarding the qualifications of civilians for commissions in the Medical Reserve Corps, it is hoped that such information will be secured from official rather than personal or political sources. It naturally follows that prospective medical reserve officers should be affiliated with their county medical society, the American Medical Association, hospitals, colleges or universities. From sources such as these, authentic information as to their professional qualifications, personal character and general suitability for the service can be gathered. It is assumed that a hospital in which a man practices his profession will be in a better position to report on his professional ability than will the congressman from his district.

6. As the soldiers of today were the civilians of yesterday, they are subject to the same illnesses and injuries as those of a purely military character. It therefore follows that all the specialties of medicine in civil life should be represented in like proportion in the army. If this had been done in the mobilization camps and recruiting stations, a more thorough system of preliminary examinations would have kept out those soldiers who later on required hospitalization overseas to the exclusion of battle casualties.

7. As different grades in the Medical Reserve Corps are in the same proportion as those in the regular army corps, it is recommended that all of those officers who held commissions who were not called to active duty be honorably discharged. It is well known that while many of these officers were prominent professionally, they were incapacitated for service either by age or unsuitability, and are holding commissions when they cannot possibly serve on active duty. These commissions, if vacated by honorable discharge, would assist in providing higher grades in the Reserve Corps for officers who have refused commissions because they felt they had not been fairly treated.

Let us hope that the Surgeon-General's Office, under its present able leadership, will take cognizance of the unfortunate error of our previous unpreparedness and will build up a Reserve Corps for future emergency which will have as its watchword "efficiency first."

Kresge Medical Building.

HEAT-RESISTANT ORGANISMS

A STUDY OF BACTERIA ENCOUNTERED IN HEAT
STERILIZATION OF SURGICAL LIGATURES
AND SUTURES *

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ELOISE B. CRAM

AND

PAUL RUDNICK

CHICAGO

We are dealing in this paper only with resistant organisms, which normally occur in commercial, unsterilized ligatures, as they are able to survive the drastic cleaning, bleaching and drying processes through which the raw sheep gut must pass before it becomes a finished ligature or suture.

In the course of the experimentation to determine the temperature necessary to insure sterility of the product, more than a hundred cultures were obtained, both from the raw, unsterilized ligatures and from those heated at various temperatures. These cultures were examined, and from them fourteen typical specimens were selected which included all the varieties observed. From these fourteen cultures five distinct types of bacteria were isolated: three spore-forming bacilli and two cocci. All were aerobic and facultatively anaerobic and grew at both 20 and 37 C., though somewhat more quickly at the latter temperature.

A careful search of the literature failed to disclose any descriptions that would apply to the cocci. The color of their growth on agar, however, indicated that they were saprophytic forms, and this was borne out by the fact that they were nonpathogenic for mice, guinea-pigs and rabbits, the animals showing no bad effects whatever from the injections. It is interesting, also to note the great resistance of these nonspore-forming organisms to extremely high temperatures when the conditions are such as found in the ligatures.

CULTURAL REACTIONS

1. Coccus giving yellow growth on agar:

Morphology.—A gram-positive coccus (from 1.2 to 1.75 microns in diameter) arranged in irregular clusters.

Cultural Reactions.—Agar Slant: A deep yellow, lustrous growth, nonspreading.

Gelatin Colonies: Small, lemon-yellow; under microscope edge entire; finely granular. No liquefaction.

Gelatin Stab: Slight growth on surface; no liquefaction.

Peptone Broth: Heavy turbidity and later a dense sediment.

Sugars: Slight acid production in glucose and saccharose; no gas production.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

2. Coccus giving a rose pink growth on agar:

Morphology.—Fairly small gram-negative cocci (from 0.7 to 0.9 micron in diameter) arranged in grapelike clusters resembling staphylococci.

Cultural Reactions.—Agar Slant: Slight rose pink lustrous growth along streak.

Gelatin Colonies: Minute lustrous deep pink colonies. Under microscope, circular shape, highly refractive, brown color. No liquefaction.

Gelatin Stab: No liquefaction; slight growth at puncture.

Peptone Broth: An even turbidity, later giving a fairly heavy powdery, orange pink sediment.

Sugars: No gas, no acid production.

Potato: A few minute pink colonies.

Milk: No visible change.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

Two of the bacilli were classified according to Lawrence and Ford.¹

3. *B. vulgatus*:

Morphology.—Gram-positive bacilli of medium size (from 1.75 to 3.5 microns by 0.9 micron); ends rather square; spores in center very slightly bulging the sides. Many shadow forms; rotatory motility.

Cultural Reactions.—Agar Slant: Heavy, spreading growth, deep cream color, nonlustrous; wrinkled at bottom and at top; edge uneven. Small round colonies apart from the main growth.

Gelatin Colonies: Small, waxy, cream white colonies; under microscope, highly refractive; edge entire. Rapid liquefaction.

Gelatin Stab: Crateriform liquefaction; scum production.

Peptone Broth: Heavy turbidity, dry, wrinkled white scum. Later an almost complete clearing of the broth.

Sugars: No gas, but acid production in glucose and saccharose.

Potato: Heavy, pink-white, dry, very wrinkled growth.

Milk: No acid production or coagulation; pronounced peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

4. *B. simplex*:

Morphology.—Gram-positive slender rods (from 3.5 by 0.58 to 0.87 micron) growing out in long filaments (from 14 to 17.5 microns), especially in glucose broth. The spores occur in the short rods and do not swell the sides. Very actively motile.

Cultural Reactions.—Agar Slant: Thin, transparent, cream colored growth.

Gelatin Colonies: Thin, white colonies, lustrous; edge entire.

Gelatin Stab: Cup shape liquefaction; no visible growth.

Peptone Broth: Even, faint turbidity.

Sugars: No gas, no acid production.

Potato: Heavy, moist, cream yellow, spreading growth.

Milk: No coagulation; pronounced peptonization.

Pathogenicity.—Negative for guinea-pigs.

5. *Bacillus*: This bacillus did not conform to any of the aerobic, spore-bearing, nonpathogenic bacteria classified by Lawrence and Ford, but its morphologic and cultural characteristics closely resemble those of *B. lacteus* as described by Chester.²

Morphology.—Gram-positive bacillus (3.5 microns by 0.9 micron in size), occurring in chains; spores developing at end, swelling the sides. Motility negative.

Cultural Reactions.—Agar Slant: Medium heavy, gray white, nonlustrous, moist growth; edge undulate; wrinkled at bottom.

Gelatin Colonies: No visible colonies in from two to ten days; no liquefaction.

Gelatin Stab: Slight liquefaction over entire surface.

Peptone Broth: Tenacious scum, smooth surface; when shaken, scum gives off heavy flocculi into broth.

Sugars: Acid production in glucose. No gas.

Potato: Fairly heavy, moist, nonlustrous, cream colored growth; uneven edge.

Milk: Decolorized; coagulation and peptonization.

Pathogenicity.—Negative for rabbits, guinea-pigs and mice.

A twenty-four hour broth culture showing heavy growth was used for the animal injections; 0.2 c.c. injected intravenously in rabbits, 0.5 c.c. intramuscularly in guinea-pigs and 0.3 c.c. subcutaneously in mice.

1. Lawrence, J. S., and Ford, W. W.: J. Bacteriol. 1:273 (May) 1916.

2. Chester, F. D.: Manual of Determinative Bacteriology, New York, the Macmillan Company, 1909, p. 291.

*From the Research Laboratories of Armour and Company.

Before surgical ligatures can be sterilized, it is necessary to remove all moisture from them in order to prevent hydrolysis. If this is not done, the application of heat readily converts the collagen of the ligatures into gelatin, thereby destroying or at least seriously injuring their tensile strength. Sterility must, consequently, be produced by dry sterilization. Fractional sterilization is of no avail, since the spores are unable to develop in the absence of water. Mercuric iodid and other radical germicides, even in solution, have little or no germicidal value in the absence of water. The tanning and chromacizing processes do not in the least inconvenience the resistant organisms found in ligatures, nor does vacuum drying for six hours at from 90 to 95 C. Chloroform does not destroy these organisms and spores, even after heating in sealed tubes at 125 C. for one and one-half hours. They are also indifferent to petroleum benzin, kerosene, carbon tetrachlorid, toluene, xylene and similar liquids at the above mentioned temperature.

The only effective means of producing sterility in plain and chronic ligatures is by the application of heat. This may be accomplished by heating the ligatures in oil or some other suitable, nonaqueous liquid to the desired temperature, as originally suggested by Bartlett.³ This temperature must be sufficiently high to destroy all living protoplasm, and it must at the same time be below the decomposition temperature of the ligature proteins in order to avoid destruction of the ligatures. Practical experience has demonstrated that such a margin exists, although its limits are rather narrow.

Absolute sterility is assured by heating the ligatures gradually up to 160 C. and maintaining this temperature for one hour. This confirms Bartlett's findings.³ Numerous tests have demonstrated that heating at 150 C. for one hour or at 140 C. for three hours does not always produce sterility. This applies to the cocci as well as to the spore formers described in this paper. These temperatures weaken or stunt the organisms and spores to such an extent that growths do not appear until the fourth, fifth or even sixth day of incubation, a point of considerable importance in the control examination of ligatures.

The thermometers employed were certified by the U. S. Bureau of Standards.

CONCLUSIONS

1. Of five distinct types of heat-resisting bacteria described, including both cocci and bacilli, which commonly occur in raw ligatures and sutures, none were found to be pathogenic.

2. Plain and chromicized ligatures and sutures can be sterilized only by heat. Antiseptics and germicides are of no value in the absence of water.

3. The thermal death point for the five types of bacteria lies between 150 and 160 C. under the conditions found in ligatures and in nonaqueous liquids.

4. Absolute sterility is assured by gradually heating the ligatures in oil or some other suitable nonaqueous liquid up to 160 C. and maintaining this temperature for one hour.

5. The great resistance to heat of the two types of cocci described is a very important fact.

ACUTE METHYL ALCOHOL POISONING ASSOCIATED WITH ACIDOSIS

REPORT OF CASE *

GEORGE A. HARROP, JR., M.D.

AND

E. M. BENEDICT

BALTIMORE

Ever since its introduction into commerce, methyl alcohol has been the prolific cause of a severe and frequently fatal type of poisoning. The recent increase in the number of cases reported, due to various preparations which have this alcohol as their basis and which have resulted in blindness or death, has indicated the possibility that the condition will assume still greater importance with the more rigid enforcement of the national prohibition amendment. It seems desirable to report the following case, together with the collected data, because it appears to offer a suggestion as to therapy, hitherto disregarded.

A brief summary of the clinical history follows:

REPORT OF CASE

History.—C. B. (Medical No. 137328), woman, aged 25, white, actress, admitted, Nov. 24, 1919, discharged, December 23, with irrelevant previous history, on the night of November 22 drank about half a pint of a fluid supposed to be brandy. Subsequent examination by a chemist of the small amount available for analysis indicated that 87 per cent. of the alcohol content was methyl alcohol.

The following afternoon (November 23), the patient felt weak and nauseated. On the morning of the 24th she vomited, and began to notice dimness of vision, which rapidly increased. She had pain in her back, headache, marked thirst, and considerable difficulty in breathing. Late in the afternoon she was seen by a physician, who had her removed to the hospital.

Physical Examination.—On admission the patient was drowsy and cyanotic, her breathing was deep and rapid, she was restless, and she complained that everything looked black in front of her. The temperature was subnormal. The pupils were dilated, but reacted to light. No particular odor was noted on the breath. Gastric lavage was done, and alkali was given by mouth, but it was not retained. The air hunger rapidly grew more marked, and about midnight the bicarbonate content of the blood plasma (Van Slyke) was equivalent to 36.4 per cent. by volume of carbon dioxide. The patient was then given 400 c.c. of 5 per cent. sodium bicarbonate solution intravenously.

November 25, her vision was practically gone. She was still nauseated, and although the hyperpnea was much less marked, the determination of the plasma bicarbonate still indicated a marked acidosis, and a second intravenous injection was given of 500 c.c. of 5 per cent. sodium bicarbonate. Thereafter there was no evidence of acidosis as indicated by the plasma bicarbonate. The clinical examination of the blood, spinal fluid and urine revealed nothing of diagnostic significance.

During the following two or three days she exhibited a rather marked delirium with visual hallucinations. Thereafter she was quite normal mentally. The vision improved gradually, but a well-defined central scotoma remained on the left side, and there was evidence on ophthalmoscopic examination of a mild postneuritic atrophy on the left.

The accompanying table shows the chemical studies made. There was at no time a disturbance of the phenolsulphonephthalein excretion or of the normal blood urea concentration. The acetone bodies were determined by the method of Van Slyke.¹ The titrable organic acids in the urine were

3. Bartlett, Willard, cited by Beckman, E. H.: *Operating-Room Technique*, Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, 1905-1909, Philadelphia, W. B. Saunders Company, 1911, p. 586.

* From the Medical Clinic of the Johns Hopkins University and Hospital.

1. Van Slyke: *J. Biol. Chem.* **30**: 347, 1917.

estimated by the method of Palmer and Van Slyke.² The formic acid in the urine was determined by the method of Dakin, Janney and Wakeman.³ The lactic acid in the urine was estimated by a modification of the Ryffel⁴ method. It was impossible to obtain accurate total collection of the urine during the first days on account of the patient's condition, so that the total excretion of the several factors studied could not be determined. The creatin and creatinin determinations were done by Folin's method, while the inorganic phosphates of the blood serum were estimated by Marriott's method.

As is indicated, the patient was admitted with an acidosis of a severe grade, which promptly disappeared following the intravenous use of sodium bicarbonate.

COMMENT

It was pointed out long ago that, whereas ethyl alcohol is completely oxidized with ease by the animal metabolism, such is not the case with methyl alcohol; and Pohl⁵ in 1893 showed that formic acid, a normal constituent of the urine, is excreted in greatly increased quantities following the administration of this alcohol to dogs by mouth. He found that the formic acid was excreted very slowly, and that the maximum amount of formates was not present in the urine until the third or fourth day. The total amount so excreted

hand, Bongers⁷ asserts that considerable quantities are thus disposed of.

Acting on a suggestion of Schmiedeberg's,⁸ that an acidosis might be produced in cases of methyl alcohol poisoning, on account of the formation of formic acid, Król⁹ was able to show a well-defined increase in the ammonia of the urine associated with the increased formic acid excretion in dogs. The formic acid excreted, however, accounted for only about one quarter of the ammonia. Król did not attempt to determine what acid might account for the major part of the ammonia, except that he states that it was not oxalic acid.

On the basis of somewhat crude methods, Tyson and Schoenberg¹⁰ concluded that they could produce an acidosis in rabbits following the inhalation of methyl alcohol. They considered methyl alcohol to be a "true hemotoxic," and their plan of treatment, "based on the findings, might be summed up in two words: eliminate and stimulate." Authors have generally ignored the specific indications for the treatment of the acidosis as such.

The description of the clinical findings in the large group poisoned at Christmas, 1911, in Berlin states that

CHEMICAL DETERMINATIONS

Date 1919 (11:30 p. m.)	Blood Plasma Carbon Dioxid Per Cent. by Volume	Blood Urea, Gm. per Liter	Acetone Bodies (Urine), Gm. per Liter	Acetone Bodies (Blood), Gm. per Liter	Lactic Acid (Urine), Gm. per Liter	Formic Acid (Urine), Gm. per Liter	Titrate Organic Acids (Urine), C.c. N/10 Acid per Liter	Creatin (Urine), Gm. per Liter	Creatinin (Urine), Gm. per Liter	Inorganic Blood Serum Phos- phates, Mg. per 100 C.c.
Nov. 24.....	36.4	.....	.....	.....	1.55	1.26	2,200	0.202	0.558	.....
Nov. 25.....	36.0	0.175	2.79	0	0.75	.....	2,258	0.283	1.000	3.0
Nov. 26.....	86.2	.....	0.83	.....	0.26	0.60	1,560	0.535	0.800	.....
Nov. 27.....	.....	.....	.....	.....	.....	.....	710	.....	.....	.....
Nov. 28.....	.....	.....	0	.....	.....	.....	220	.....	.....	.....
Nov. 29.....	76.7	0.091	.....	.....	.....	.....	406	0.300	0.590	.....
Nov. 30.....	.....	.....	.....	.....	.....	.....	420	.....	.....	.....
Dec. 1.....	.....	.....	.....	.....	.....	.....	256	0.180	0.538	.....
Dec. 2.....	.....	.....	.....	.....	.....	.....	270	0.137	0.557	.....
Dec. 3.....	.....	.....	.....	.....	0.68	0.07	364	.....	.....	.....
Dec. 11.....	.....	.....	.....	.....	.....	.....	199	0.105	0.378	.....
Dec. 17.....	.....	.....	.....	.....	.....	.....	260	0.024	0.476	.....
Dec. 20.....	62.1	0.165	.....	.....	.....	.....	.....	.....	.....	.....

by no means accounted for the entire dose given, and the maximum recovered after the feeding of sodium formate itself, which is quickly excreted, was but 18 per cent.

One experiment was made on a man who drank 25 c.c. of methyl alcohol, which caused similarly a marked rise in the formate excretion.

The fate of the remaining portion of the alcohol is not known. A considerable quantity can be recovered, according to Asser,⁶ in the expired air. Thus, he was able to recover, over a period of seven days following its administration, 55.8 per cent. of 25 c.c. of methyl alcohol given by mouth to a dog, while in the urine following such a dose he recovered only from 3.1 to 4.6 gm. of formates. This author has made the further interesting observation that when ethyl or amyl alcohol, or acetone, is given together with the methyl alcohol, the excretion of the formates is very appreciably diminished over the amount recoverable when methyl alcohol is given alone. As to the excretion of methyl alcohol itself in the urine, there is some disagreement. Pohl did not recover it but, on the other

in the most severe cases the patients had marked cyanosis and severe air hunger.¹¹ Many references can be found, in clinical reports, of respiratory distress and of forced breathing, in the severer cases, which may well have been the hyperpnea of acidosis.

The marked increase in the lactic acid excretion, together with the rise in the urinary creatin (which was far greater than could be accounted for simply by starvation), makes it evident that we are dealing with a more profound disturbance of the metabolism than is indicated by the simple failure of the body properly to oxidize the methyl alcohol. It would appear, however, that when an acidosis is demonstrated by the proper laboratory tests,¹² the employment of the usual therapy, particularly the administration of sodium bicarbonate, is urgently indicated. We feel convinced that a definite therapeutic aid was in all likelihood obtained by its use here. Certainly, so far as the formic acid is concerned, the excretion is limited by the amount of the

2. Palmer and Van Slyke: Proc. Soc. Exper. Biol. & Med. **16**: 80, 1919.
3. Dakin, Janney and Wakeman: J. Biol. Chem. **14**: 341, 1913.
4. Ryffel: J. Physiol. **39**: 9, 1909.
5. Pohl: Arch. f. exper. Path. u. Pharmakol. **31**: 281, 1893.
6. Asser: Ztschr. f. exper. Path. u. Therap. **15**: 322, 1914.
7. Bongers: Arch. f. exper. Path. u. Pharmakol. **35**: 429, 1895.
8. Schmiedeberg: Therap. Monatsh. **26**: 329, 1912.
9. Król: Arch. f. exper. Path. u. Pharmakol. **72**: 444, 1913.
10. Tyson, H. H., and Schoenberg, M. J.: Experimental Researches in Methyl Alcohol Inhalation, J. A. M. A. **63**: 915 (Sept. 12) 1914.
11. Berl. klin. Wchnschr. **49**: 193, 1912.
12. Possibly it is not necessary to state that the presence or absence of a ferric chlorid reaction in the urine is of no significance in types of acidosis other than acetone body acidosis. The ferric chlorid reaction in the urine in only one specimen was markedly positive in this case.

alcohol ingested, and more is to be expected as a result of its prompt neutralization than in other types of acidosis, in which the formation of acid metabolites may continue quite independently of our ability to neutralize them.

Of practical importance is the observation of Bongers,⁷ who gave methyl alcohol to dogs by mouth, and then estimated the amounts recoverable by gastric lavage repeated over several days. He asserts that he recovered about three times as much methyl alcohol in the combined washings of the second and third days as he was able to obtain in those of the first. He was also able to recover formic acid in the stomach washings twenty-seven hours after the alcohol was given. This work would appear to point out clearly the importance of thorough and repeated lavage.

SUMMARY

1. In case of severe acute poisoning with methyl alcohol, associated with a marked grade of acidosis, recovery followed the use of alkali therapy.

2. The acidosis was associated with an increase in the amount of titrable organic acids in the urine, and specifically with a marked increase in the excretion of lactic and of formic acids.

3. The acidosis, when present, furnishes an indication for the use of prompt therapeutic measures.

4. On the basis of the work quoted, it is submitted that gastric lavage should probably be done over a period of several days.

CULTURAL STUDIES ON A CASE OF SPRUE

PRELIMINARY NOTE *

WADE W. OLIVER, M.D.

BROOKLYN

The purpose of this preliminary communication is to record briefly certain laboratory findings in a case of sprue.

REPORT OF CASE

Charles W., an American, resident in Porto Rico, invalided north, was admitted to the Long Island College Hospital, where stool cultures were made. Following this, tongue cultures, sputum cultures and a culture from a tooth abscess were taken, as well as a blood culture. On two occasions from the stool, twice from tongue scrapings, once from the sputum and once from the tooth abscess, a growth of yeasts was obtained which corresponded in the main to *Monilia psilosis*, described by Ashford¹ as the cause of sprue.

Isolation of Organism.—In the case of the stool, cultures were obtained by emulsifying a standard loopful of stool in from 1 to 2 c.c. of sterile physiologic sodium chlorid solution and streaking from 1 to 2 loopfuls of the suspension across large (135 mm.) + 1 glucose agar plates which had previously been allowed to harden. Cultures from the tongue were taken in one case by scraping the inflamed tongue with a sterile knife, after preliminary swabbing of the tongue with sterile water, and in the other instance by thoroughly swabbing the tongue with a sterile cotton swab. In both instances, *Monilia* was isolated when a large + 1 glucose agar plate was streaked, and the culture incubated at 37.5 C. (99.5 F.). A positive culture was obtained from the tooth abscess by inserting into the latter a small sterile pledget of cotton mounted on a sterile stick and immediately streaking several large plates of

+ 1 glucose agar. From the sputum, which was lightly streaked with blood, cultures were secured by thoroughly washing a small fragment of bloody sputum in several tubes of sterile physiologic sodium chlorid solution and then streaking the fragment over three large 1 per cent. glucose agar plates (+ 1). The plates were incubated at 37 C. (98.6 F.). A blood culture was negative, and after two weeks' continuous incubation at body temperature, the + 1 glucose blood agar plates and the + 1 glucose blood broth were discarded.

Morphology.—The yeast exhibited quite a striking variation in size and form, which seemed somewhat independent of the medium, as a mount made from a single colony showed a polymorphism among its members. The single cells were round or oval, varying in diameter from about 2 to 7 microns, were sharply defined in outline, and possessed a nucleus which was recognizable in fresh preparations. Many cells showed an oval or spherical, faintly outlined vacuole. Mycelial elements were occasionally observed in + 1 glucose agar but best apparently in gelatin.

On + 1 glucose agar plates incubated at 37 C. for two days, the colonies of *Monilia* were white, glistening, elevated, and soft, with clearly defined borders. In cultures, a rather "yeasty" odor was observed. In + 1 infusion broth, at the end of twenty-four hours at 37 C., the broth was evenly clouded. Broth cultures incubated for three or four days or longer usually exhibited a sedimented growth at the bottom and a white growth ring at the surface of the medium where it was in contact with the glass.

In gelatin stab cultures, the growth resembled that of an inverted pine tree. Smears made from the growth in gelatin showed considerable numbers of mycelial elements, which varied in size and usually were somewhat wavy in outline.

Fermentation Tests.—Fermentation tests were made by the Durham tube-within-a-tube method. The medium employed was peptone water in which the respective sugars were present in a concentration of 1 per cent. The Andrade indicator was used to determine acid production. Readings were made daily, and the tubes were incubated for at least two weeks at 37 C. before they were discarded. The material used for inoculation was taken from twenty-four hour + 1 glucose agar slants. Between thirty-six and forty-eight hours' incubation was found to give the optimum acid and gas readings. In the tests herewith recorded, sugars that were not fermented within this time failed to be fermented on longer incubation, nor did transplants made from such sugars to respective sugar broths incubated at 37 C. for two weeks result in fermentation. From the table of fermentation tests, it is to be noted that the stool and tongue strains agree in their acid producing power, but that the tongue strain produces both acid and gas in saccharose, whereas the stool strain splits off acid alone from this disaccharid.

RESULTS OF FERMENTATION TESTS

Medium	<i>Monilia</i> from Stool	<i>Monilia</i> from Tongue Scrapings
Glucose	Acid +; gas @ 90%	Acid +; gas 100%
Levulose	Acid +; no gas	Acid; no gas
Galactose	Acid; no gas	Acid; no gas
Saccharose	Acid (faint); no gas	Acid +; gas @ 80%
Maltose	Acid; no gas	Acid; no gas
Lactose	No acid; no gas	No acid; no gas
Mannite	No acid; no gas	No acid; no gas
Dextrin	Acid (very faint); no gas	Acid (faint); no gas
Xylose	No acid; no gas	No acid; no gas
Inulin	No acid; no gas	No acid; no gas
Glycerin	No acid; no gas	No acid; no gas

Animal Inoculations.—Two standard platinum loopfuls of a twenty-four hour + 1 glucose agar slant culture suspended in 0.5 c.c. of sterile physiologic sodium chlorid solution were injected intraperitoneally into a guinea-pig weighing about 250 gm. Twenty-four hours after inoculation a lump about the size of the little finger nail was easily palpable in the abdomen at the site of inoculation. The guinea-pig, after the first day, refused to eat, and died on the seventh day after inoculation. At postmortem, a rather discrete, large abscess was found subcutaneously around the site of inoculation. The abscess extended into the peritoneal cavity and involved the omentum, spleen, colon and the lower lobe of the liver. Scattered, small discrete abscesses were also found on the under surface of the

* From the Department of Bacteriology, Hoagland Laboratory, Long Island College Hospital.

1. Ashford, B. K.: Etiology of Sprue, Am. J. M. Sc. 154: 157 (Aug.) 1917.

colon and in the liver. The gallbladder was dilated, the fluid increased in amount, hemorrhagic, and contained a large white mass resembling a colony of yeasts. From the gallbladder, as well as from a liver abscess, *Monilia* was recovered in culture, mixed with *Staphylococcus aureus*.

SUMMARY

From this case of sprue, a yeast was recovered which corresponds in the main to *Monilia* of Ashford. It is perhaps somewhat of interest because there are few recorded cases of sprue studied in temperate climates from an etiologic standpoint.

The organism was isolated on +1 glucose agar plates from the stool, tongue, sputum and a tooth abscess.

Intraperitoneal injection of a guinea-pig killed the animal in seven days, and from the liver and gallbladder, the yeast was recovered, mixed with *Staphylococcus aureus*.

Henry and Pacific Streets.

Clinical Notes, Suggestions, and New Instruments

A NEW STAIN FOR DIPHTHERIA BACILLI *

HENRY ALBERT, M.D., IOWA CITY

The report of one or several "new" stains for diphtheria bacilli almost every year since 1895 would seem to indicate that none of those previously recommended have been entirely satisfactory.

I have tried practically every stain heretofore described. A rather critical review of these will appear before long in the *American Journal of Public Health*.

My purpose here is to make available the formula for a new method of staining diphtheria bacilli which I have developed and which my associates and I have found to be more satisfactory than any stain heretofore described. Two solutions are used:

SOLUTION 1	
Toluidin blue	0.15 gm.
Acetic acid (glacial)	1.00 c.c.
Alcohol (95 per cent.)	2.00 c.c.
Water (distilled)	100.00 c.c.

Solution 2 is the same as the iodine solution used in the Gram stain:

SOLUTION 2	
Iodine	1 gm.
Potassium iodide	2 gm.
Water (distilled)	300 c.c.

TECHNIC OF STAINING

Smears are made on slides or cover glasses in the usual manner, fixed by heat, and stained with toluidin blue solution for five minutes. The stain is then drained off without washing, and the iodine solution applied for one minute. It is then briefly washed with water and dried, preferably by means of filter paper. It is now ready for examination.

Occasional lots of toluidin blue stain the diphtheria too uniformly. One that stains the granules well should be selected.

If staining is done in staining dishes, the iodine solution should be replaced with a fresh supply daily, since a precipitate results from the introduction of the toluidin blue stain carried over on the slide.

MICROSCOPIC PICTURE

The granules of the diphtheria bacilli are stained black—standing out in marked contrast to other elements in the microscopic field. The bars of the bacilli take a color varying from dark green to black; and the intermediate portions, as well as other bacteria, take a light green.

The granules of diphtheria bacilli stand out very much more prominently than they do when stained by Loeffler's methylene blue and other stains that are commonly employed. The bars stain with varying intensity. Sometimes they stand out better, sometimes not so well as with the Loeffler stain. They are, however, easily recognized. In this respect it is much better than certain stains, such as the Neisser, which sometimes stain the granules very well.

ADVANTAGES

1. Diphtheria bacilli are more readily recognized by virtue of the fact that the granules of the bacilli stand out in very sharp contrast to other portions of the bacillus and more especially to other bacteria which are but feebly stained.

2. Diphtheria bacilli may be recognized in younger cultures, and hence the diagnosis made earlier.

3. The bacilli may be seen equally well by daylight and artificial light.

4. The results of staining are uniformly good.

STEREOSCOPIC ROENTGENOGRAPHY WITH THE BEDSIDE UNIT *

HOWARD CURL, M.D., MADISON, WIS.

With the development by Dr. Coolidge of the self-rectifying roentgen-ray tube and the portable transformer, and the subsequent production of large numbers of these completed units, a long felt want has been realized.

Designed especially as a portable unit for bedside use in hospitals, they are nevertheless capable of handling a large part of the work that comes to the general practitioner. This fact, together with the low cost, ease of installation, and simplicity of operation, will mean that many of these units will soon be in the hands of the profession.

There is, however, one very important feature which until now the designers have apparently overlooked, and that is a means for shifting the tube for stereoscopic plates. The man accustomed to stereoscopy will feel this loss keenly, and the physician who has not yet learned to use stereoscopic roentgenography in his roentgenographic examinations should know that the difference between a single plate and

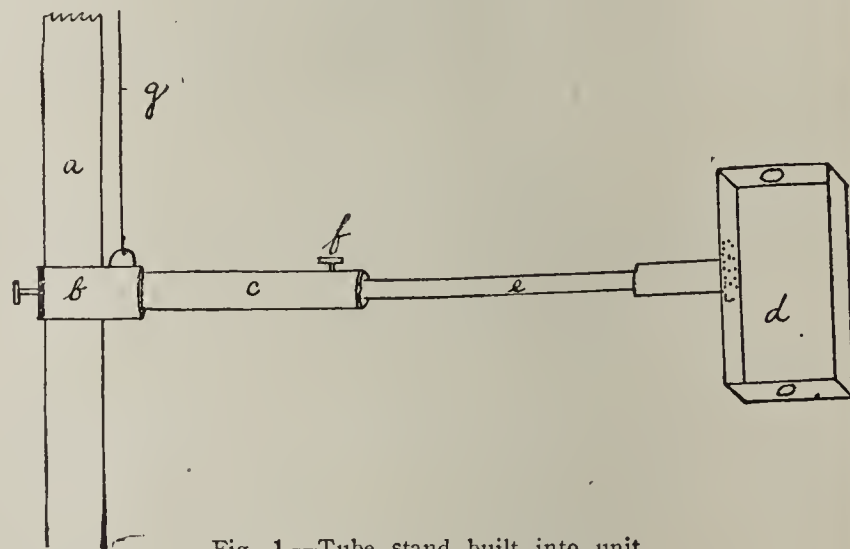


Fig. 1.—Tube stand built into unit.

a pair of stereoscopic plates is often the difference between failure and success in making a diagnosis. Especially is this true in regions about the hip or shoulder joint where it is impossible to obtain a two-way view.

Stereoscopic plates may be obtained with the bedside unit (1) by using a regular stereoscopic tube stand, or (2) by adapting the stand which is built into the unit to this type of work. The second method, besides being cheaper, eliminates the use of a second piece of apparatus. It is my purpose in this article to suggest a simple means of converting the unit tube stand into one that is suitable for stereoscopy.

Figure 1 illustrates the tube stand built into the unit: a, upright stand; c, horizontal sleeve, supporting extension

* Brief description of a stain described before the Laboratory Section of the American Public Health Association at New Orleans, Oct. 26, 1919.

* From the Department of Clinical Medicine, University of Wisconsin Medical School.

arm *e*; *f*, screw for holding extension arm at any given setting; *d*, holder for self-rectifying tube, and *g*, wire cable passing over pulley to counter weight.

To obtain stereoscopic plates the extension arm was marked with circular grooves (Fig. 2, 6) at 6-cm. intervals. On this arm was also placed a sliding collar (5). The tube is adjusted over the patient with one of the circular markings on *e* flush with the end of the sleeve. The collar is set at 6-cm. distance, which will be at the next mark. The first

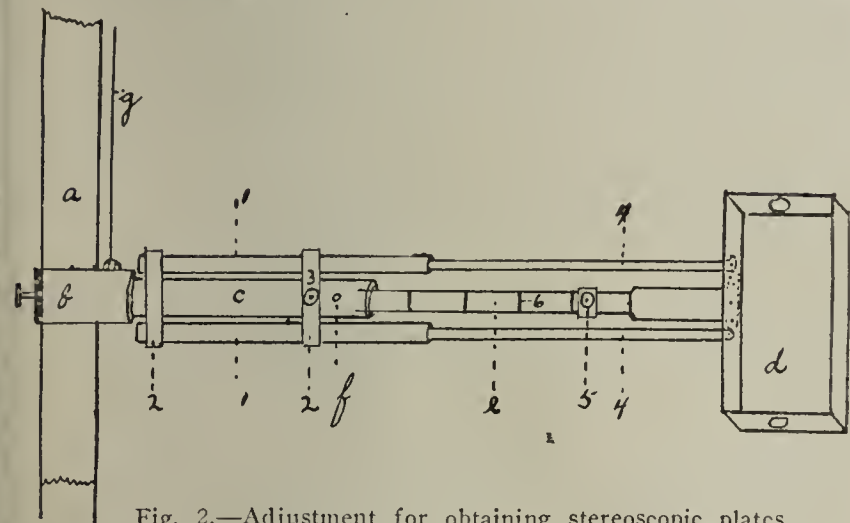


Fig. 2.—Adjustment for obtaining stereoscopic plates.

plate is taken, the tube is slid in as far as the collar will permit, and the second plate is taken. Care must be taken in shifting the tube to see that the tube does not rotate, i. e., that the same angle is preserved for the second plate. To eliminate this danger, we added two auxiliary sleeves (1, 1),

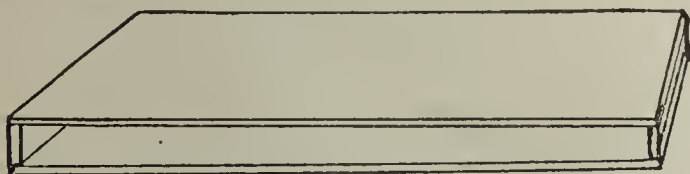


Fig. 3.—Plate changing tunnel.

parallel to *c* supported on it by two circular bands (2, 2). Two auxiliary rods (4, 4) fit into the sleeves. The tube may now be rotated to any angle and held by screw 3, screw *f* being no longer needed.

Thus, we have a tube stand with a horizontal displacement of several inches, a means for obtaining the regulation 6-cm. shift for stereoscopic plates, and a device for holding the tube at any desired angle while making the shift. With the aid of a plate changing tunnel, Figure 3, stereoscopic plates of any part of the body may be made at the bedside with a minimum of discomfort to the patient. This will be of especial value in fractures of the leg, femur or hip joint when the part is up in extension, and of which a two-way view would be difficult or impossible to obtain.

Tuberculosis in the Malay States.—Dr. J. T. Clarke, health officer of Kinta, has collected evidence in support of his thesis that the "massive dose" of tubercle bacilli is the all important factor in the causation of phthisis. He notes, as rather remarkable, that there is a higher proportion of phthisis among Chinese males than females in Singapore, the proportion being 6.04 to 3.81. But if all cases of phthisis, bronchitis and pneumonia be classed together, the difference is much less, the proportion being 8.99 males to 8.1 females. Bovine tuberculosis does not exist in the Malay Peninsula; no case of tubercle in a domestic animal has been discovered, and among more than 250,000 pigs killed in the Ipoh abattoirs during the last four years, there was no case of tuberculosis. The disease in man must, therefore, be exclusively due to infection from human sources. In Singapore, phthisis causes 16 per cent. of the total deaths. Discussing von Behring's theory of infection, which he rejects, Dr. Clarke observes that the Chinese seldom take milk, even as children, and that in the straits settlements the cattle are at present free from tuberculosis.—*Lancet*, Nov. 29, 1919.

Therapeutics

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A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Continued from page 1939)

PHENOLPHTHALEIN

About twenty years ago the Hungarian government decreed that wine, adulterated by certain harmless additions, be earmarked by means of phenolphthalein, because of the property of this substance of assuming a brilliant red color on addition of alkali, and of its supposed harmlessness. This was done with the intention of enabling the poor man to buy this "necessity of life" at a price within his reach. But it was soon found that people partaking freely of this wine suffered from diarrhea, which at one and the same time led to a hasty repeal of the law and the discovery of a new purgative.

This recent addition to the cumbersome list of cathartics is of interest only because of the fact that it is almost tasteless and is active in small doses. It lends itself admirably to palatable administration, even to being given in the form of bonbons, which makes it especially suitable for children and for the insane; though women generally and even men prefer it on account of the inoffensiveness of its taste.

It is a yellowish-white powder, odorless and almost tasteless, very slightly soluble in water, and soluble in alcohol (13 parts) and in aqueous solutions of alkalis, yielding a pink fluid. It is also soluble in olive oil to the extent of about 2 per cent.

Being insoluble in acids, it passes through the stomach unchanged; hence it may be given in conditions of gastric irritation when many other cathartics would be contraindicated. On reaching the intestine, it is partially dissolved in the alkaline secretions, becoming converted into salts which are irritant, and thus becoming active. Very little is absorbed; more than 85 per cent. of it has been found unchanged in the feces. After large doses, however, traces are found in the urine, which then turns pink when rendered alkaline by decomposition or otherwise. That it does not irritate the kidney is shown by the fact that subcutaneous injection of a very similar substance—phenolsulphonephthalein—has become an accepted test for the functional capacity of the kidney. There are no known systemic effects produced after absorption.

Phenolphthalein probably acts chiefly by influence on peristalsis; in other words, it belongs among such drugs as cascara sagrada and senna, so far as mode of action is concerned. It is even effective as a cathartic when given subcutaneously, though Abel and Rowntree¹ found phenoltetrachlorphthalein (0.4 gm. in 20 c.c. of oil) superior for this purpose.

The chief disadvantage of phenolphthalein is a certain degree of variability of action. At times, a small dose acts excessively; at times, a larger dose fails to act. An overdose, and in especially susceptible persons even a therapeutic dose, may cause, in addition to free

* This is the twelfth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. Abel and Rowntree: *J. Pharmacol. & Exper. Therap.* 1:231 (Aug.) 1909.

purgation and colic, rapid pulse, palpitation, difficult breathing and general uneasiness, even collapse. The substance is otherwise quite free from toxic tendency. Doses of several grams have been tolerated without more severe effects than those just detailed. There are no fatal cases on record.

It should be borne in mind that phenolphthalein may cause reddish stools, when the reaction of the evacuation is alkaline, or is made so by a soap enema, for instance. Under such circumstances, the suspicion may arise that there is blood in the stools. Of course, the diagnosis can readily be made by the fact that acidification removes the color, which reappears when excess of alkali is added. In view of the frequency with which this drug is now being used, we must beware of making a diagnosis of blood in the stools by mere inspection.

The dose of phenolphthalein for adults is from 0.10 to 0.20 gm. (1½ to 3 grains). The U. S. Pharmacopeia states that the average dose is 0.15 gm., or 2½ grains. As little as 0.06 gm. (1 grain) is often sufficient for an adult, and this dose is none too large for a child. Babies aged 18 months are given 0.03 gm. (one-half grain). In obstinate cases, as for instance bed-ridden patients, from 0.5 to 1.0 gm. (8 to 15 grains) may be given without fear. It will be noted that, on the whole, the dose of this drug is quite independent of age. It is also true that at any age the effect is somewhat independent of dose. Evidently the activity depends on the amount of alkali in the intestine available for solution; and it is probable that variation in intestinal reaction accounts for the variability in intensity of action.

As phenolphthalein is a comparatively slowly acting drug, requiring from six to twelve hours for effect, it is generally given at bedtime. While, when large doses are needed, these would best be prescribed in powder form, the usual method of administration for the ordinary dose is in the form of sweet tablets to be eaten like candy. The National Formulary contains a formula for pink, vanilla flavored *troches of phenolphthalein*, each containing 0.06 gm. (1 grain) of the drug. These are made with acacia, and therefore disintegrate rather slowly. This is undesirable. Lozenges made in this way are suitable for mouth and throat medication; more rapid disintegration is desirable in candy medication for systemic action, as sick children sometimes refuse to suck candies that healthy children would enjoy. Friable tablets can be obtained by light compression in a tablet machine. The following formula² will yield such a product, which can be prepared extemporaneously by a pharmacist equipped with a tablet machine. Without compression into tablets the same formula yields a palatable powder.

SWEET TABLETS OF PHENOLPHTHALEIN, 0.06 GM. EACH

Phenolphthalein	6.00 gm.
Saccharin	0.12 gm.
Tincture of vanilla	1.50 c.c.
Cacao powder	3.00 gm.
Sugar, powdered	21.00 gm.

Mix the saccharin with the tincture of vanilla and incorporate the phenolphthalein. Finally add the sugar and the cacao by thorough trituration in a mortar. Compress in a tablet machine, using ⅜-inch die and punches, to make 100 0.30 gm. tablets.

All the various manufacturing houses of pharmaceuticals put up fairly acceptable sweet tablets con-

taining 0.06 gm. each and up to 0.30 gm. Such tablets might simply be prescribed for as follows:

R 12 Sweet tablets of phenolphthalein . . 0.06 gm. (1 grain) each
Label: One or two at bedtime.

For infants, sweet tablets might be crushed and given in a little water.

The novelty and the inoffensiveness of this remedy has rendered it an inviting object for commercial exploitation. Soon after its introduction, the market became literally flooded with phenolphthalein in various disguises and combinations, the only original feature of most of which was a coined name. The following is a partial list of names under which phenolphthalein preparations and combinations are or were advertised:

Alophen,
Cholelith Pills,
Elzernac,
Ex Lax,
Exurgine,
Laxophen,
Laxine,
Laxirconfect,
Laxothalen Tablets,

Paraphthalein,
Phenalein,
Phenolax Wafers,
Phenolphthalein Laxative,
Probilin,
Prunoids,
Purgatol,
Purgen Konfect,
Purgella,

Purglets,
Purgo,
Purgolade,
Purgotin,
Purgylum,
Rhuphen,
Thalosen,
Veracolate,
Zam Zam.

What a Babeldom would arise in medical practice if this business policy of manufacturers to protect their product by coined names were encouraged by the patronage of physicians. Self-respecting manufacturers owe it to the progress of medical science to do away with such camouflage for revenue only; and the medical profession owes recognition to these manufacturers by prescribing products by their scientific names.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

SULPHOICHTHYOLATE PREPARATIONS

(See N. N. R., 1919, p. 319)

ICHTHYOL.—**Ammonium Ichthyol.**—An aqueous solution the important medicinal constituents of which are ammonium compounds containing sulphur in the form of sulphonates, sulphones, and sulphides. These characteristic forms of sulphur result from the sulphonation of the tar-like distillate obtained from the bituminous shales, found near Seefeld in the Tyrol, and containing the fossil remains of fish.

Actions and Uses.—Ichthyol is weakly antiseptic and mildly irritant. It penetrates the skin to some extent and is said to cause some vasoconstriction on mucous membranes. Taken internally it produces some gastro-intestinal irritation, with diarrhea, etc. Its influence on metabolism has not been determined.

It is used locally under the supposition that it will secure the absorption of swellings and effusions in contusions, burns, etc., and especially in gynecologic practice, and in various skin diseases. Ichthyol has been tried internally in a great variety of conditions, but its therapeutic value in many of its suggested applications has not been fully established.

Dosage.—Internally, from 0.2 to 2 Cc. (3 to 30 minims) mostly in simple solutions in water, or peppermint water, sometimes in the form of pills or capsules. Locally, in vaginal, uterine or rectal suppositories, in from 0.06 to 0.18 Cc. (1 to 3 minims) bougies, or from 1 to 3 per cent. solution in treatment of gonorrhea. Ointments containing from 10 to 40 per cent. petrolatum may be prepared, using as a base fat, lanolin or petrolatum.

2. From Fantus, Bernard: Candy Medication, St. Louis, C. V. Mosby Company, 1915.

Manufactured by the Ichthyol Co., Hamburg, Germany (Merck & Co., New York). German patent No. 35,216. U. S. trademark No. 62,603.

Ichthyol is a reddish-brown to brown-black, syrupy liquid having a characteristic, empyreumatic odor and burning taste.

It should be completely soluble in water; incompletely soluble in alcohol or ether, but nearly soluble in a mixture of equal volumes of alcohol and ether; also soluble in a mixture of equal volumes of alcohol, water and ether. It is miscible with glycerine.

The aqueous solution of ichthyol (1:10) has a faintly acid reaction on blue litmus paper. The aqueous solution of ichthyol (1:10) yields a greenish-black, resin-like precipitate on the addition of hydrochloric acid. This precipitate is nearly insoluble in ether; it is partially soluble in alcohol; soluble in water, but if dissolved in the latter solvent it may again be precipitated from solution by the addition of hydrochloric acid. With barium chloride test solution the aqueous solution of ichthyol (1:10) gives a brownish-black precipitate which is insoluble in diluted hydrochloric acid. If the aqueous solution (1:10) be boiled with potassium hydroxide test solution ammonia should be evolved. If 1 Gm. of ichthyol be ignited it should leave no weighable residue. If 10 Gm. of ichthyol be diluted with 90 Cc. of water, the mixture placed in a glass-stoppered cylinder and allowed to remain undisturbed for twenty-four hours, no deposit should form.

If dried at 100 C. ichthyol should not lose more than 47.0 per cent. of its weight (absence of an undue amount of water). If from 5 to 6 Gm. of ichthyol be weighed into a flask, 25 Cc. of potassium hydroxide test solution and 100 Cc. of water be added, the mixture distilled until no more ammonia passes over, the distillate collected in 15 Cc. of normal sulphuric acid to which 1 drop of methyl orange test solution has been added, and the excess of acid then titrated with tenth-normal potassium hydroxide, the amount of normal sulphuric acid consumed should correspond to from 2.9 to 3.4 per cent. of total ammonia (NH₃). If from 5 to 6 Gm. of ichthyol be weighed into a beaker, diluted with 50 Cc. of water, 10 Cc. of a 10 per cent. solution of albumin added, followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition, the mixture made up to a volume of 500 Cc. and filtered through a dry filter, and if 200 Cc. of the filtrate be heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate obtained should correspond to from 5.7 to 6.2 per cent. of ammonium sulphate. If from 0.5 to 1 Gm. of ichthyol be weighed into a Kjeldahl flask, diluted with 30 Cc. of water, 5 Gm. of potassium chlorate added, followed by 30 Cc. of nitric acid, the mixture evaporated to about 5 Cc., 25 Cc. of hydrochloric acid added, this solution evaporated to about 5 Cc., 25 Cc. of hydrochloric acid again added, this solution evaporated to about 5 Cc., 100 Cc. of water added, this solution heated to boiling, 10 Cc. of barium chloride test solution added, the mixture allowed to stand for twenty-four hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate should correspond to at least 10 per cent. of total sulphur. If the ammonia contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total ammonia" as previously determined, the remainder should represent the ammonia combined with the organic-sulphonic acids. If this value be multiplied by 1.88 the result should represent the sulphur present in the sulphonic acids in an oxidized state, i. e., the "sulphonic sulphur." If the sulphur contained in the ammonium sulphate as previously determined in ichthyol be calculated, and the result subtracted from the "total sulphur" as previously determined, the remainder should represent the sulphur present in the organic sulphonic acids contained in the substance. If the "sulphonic" sulphur in ichthyol as previously calculated be subtracted from the sulphur in the organic-sulphonic acids as previously calculated, the remainder should correspond to at least 5.5 per cent. of "organic" ("sulphid") sulphur.

Ichthyol is incompatible with acid and saline solution, fixed alkalies, their carbonates and iodides, alkaloidal salts and mercuric chloride.

MERCUROCHROME-220

Preliminary Report of the Council on Pharmacy and Chemistry

A report on the experimental and clinical status of this new germicide for use in the genito-urinary tract by Young, White and Swartz was published in THE JOURNAL of the American Medical Association, Nov. 15, 1919. This product is prepared and marketed by Hynson, Westcott and Dunning, Baltimore, Md., who request its acceptance for New and Nonofficial Remedies. The available evidence on Mercurochrome-220 is thus far limited to the article mentioned—obviously confirmation of the work there reported is necessary before more than a tentative acceptance can be accorded. However, Mercurochrome-220 is a definite and nonsecret compound. This, together with the evidence presented in the publication referred to, may be sufficient to warrant its use by physicians, provided, however, it is recognized that its therapeutic status is in the experimental stage. The Council has, therefore, deferred acceptance of this product for New and Nonofficial Remedies, and authorized publication of this preliminary report.

For the information of those who desire to use this compound, the following preliminary statement, based chiefly on the article by Young, White and Swartz, of its physical and chemical properties, pharmacologic actions and proposed therapeutic application is published.

W. A. PUCKNER, Secretary.

MERCUROCHROME-220.—Mercurochrome-220 is stated to be dibromo-oxymercury fluorescein.

The empirical formula is C₂₀H₁₁O₆Br₂Hg.

Mercurochrome-220 is described as occurring as a red powder, odorless, containing about 28 per cent. of mercury.

Mercurochrome-220 is insoluble in water, but soluble in alkalies, forming a deep cherry-red solution which fluoresces on dilution. The solution is stable in the air at ordinary temperatures, is not affected by moderate heating and does not respond to the usual tests for mercury ions. Alkaline solutions are incompatible with acids. The solution stains the skin red but the stain may be removed by rubbing first with 2 per cent. potassium permanganate solution and then with 2 per cent. oxalic solution. On ignition, Mercurochrome-220 leaves no ash.

Pharmacologic Action.—According to Young, White and Swartz, this compound is a strong and rapidly active germicide; it is active in urine, a 1:1,000 solution killing *B. coli* and *Staphylococcus aureus* in this medium in one minute. It penetrates the tissues readily. The drug is tolerated in a strength of 1 per cent. by the bladder, renal pelvis and urethra; a 2.5 per cent. solution applied to the anterior urethra caused only temporary discomfort. The toxicity, when tested by intravenous injections into rabbits, was found to be rather high, 10 Mgm. per kilo. invariably causing death within 24 hours and 5 Mgm. causing a decrease in phenolsulphonaphthalein output and an albuminuria that lasted about a week. Dogs were more resistant. No systemic effects have been observed following its local application in the human.

Therapeutic Applications.—The drug has been used by Young, White and Swartz in infections of the renal pelvis, in cystitis and urethritis and in chancroidal ulcerations. In the treatment of infections of the kidney pelvis, the ureters were catheterized and the pelvis gently filled with a 1 per cent. solution of the drug; the catheter was plugged and the solution retained in the pelvis for five minutes. In the treatment of bladder conditions, one ounce of the 1 per cent. solution was introduced into the bladder and retained for one hour or longer, the treatment being given daily or on alternate days or at longer intervals according to circumstances. In anterior gonococcus urethritis, the anterior urethra was filled with a 1 per cent. solution and retained for five minutes; if the posterior urethra was involved, the solution was gently forced into the posterior urethra and bladder and retained for an hour or more.

Later, in the treatment of acute anterior gonorrhea, 2.5 per cent. solution¹ was used every three hours. In the case of chancroidal ulcerations, the drug was applied as a moist dressing (1 per cent.) or as a starch paste (5 per cent.) or as an ointment (5 per cent.).

The results have been satisfactory and no untoward effects observed. Cases of long-standing, purulent cystitis have cleared up in a few days; in the case of gonorrhea, the discharge became free of the organisms in from three to seventeen days, the average being ten. The chancroidal ulcerations cleared off in from one to four days.

BARBITAL SODIUM (See N. N. R., 1919, p. 83).

Veronal-Sodium—A brand of barbitol sodium complying with the N. N. R. standards.

Manufactured by the Winthrop Chemical Co., Inc., New York. U. S. patent No. 782,739. U. S. trademark No. 40,115.

PROCAINE (See New and Nonofficial Remedies, 1919, p. 30).

Procaine-Calco.—A brand of procaine complying with the N. N. R. standards.

Manufactured by the Calco Chemical Co., Bound Brook, N. J. U. S. Patent No. 812,554 (Feb. 13, 1906; expires 1923) by license of the U. S. Federal Trade Commission.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1919, p. 292).

E. R. Squibb and Sons, New York.

Typhoid-Paratyphoid Bacterin (Special Bacterial Vaccine No. 13).—Marketed in 5 Cc. vials, each cubic centimeter containing 1,000 million killed *B. Typhosus*, 750 million killed *B. Paratyphosus* "A," and 750 million killed *B. Paratyphosus* "B."

1. In the article by Young, White and Swartz, J. A. M. A. 73: 1483, 1919, it was stated that a 25 per cent. solution was being used; this was an error, J. A. M. A. 73: 1708, 1919.

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SATURDAY, JANUARY 3, 1920

CAROTINEMIA

Abnormal pigmentation of the body, as well as the appearance of unusual pigments in the fluids and secretions of the organism, has always elicited the interest of physicians. In recent years a new appreciation of the significance of some of these manifestations has come through the recognition that certain ingested pigments, notably the so-called carotinoids, are easily incorporated into the tissues. Under the general designation of "lipochromes" they have been recognized as the coloring matters of milk fats and body fats, of egg yolk, of the corpus luteum, and of other structures. Recently the lipochrome of nerve cells has also been identified as carotinoid coloring matter—carotin and xanthophyll pigments—derived from the food.

Through numerous researches of Palmer and his associates¹ in this country, it has become known that different species vary in their tendency to carry carotinoids in the blood serum. Man represents one of those capable of such distribution of the pigments, frequently derived from plant sources, which tend to give a yellow color to body fats, analogous to that of butter and egg yolk. Not until quite recently has it been appreciated, however, that certain unusual colorations indicated by a yellowish complexion are referable to the food pigments. Under the designation of carotinemia, Hess and Myers² have recently described in *THE JOURNAL* what they regard as a new clinical picture. The yellow discoloration of the skin observed in their cases resembled a mild jaundice except for the noninvolvement of the sclera. Hence, as they suggest, this pigmentation has no doubt frequently been confused with mild grades of icterus or attributed to some obscure metabolic disturbance. Through the careful laboratory examinations made by Hess and Myers it is demonstrated that a diet rich in carotin, as it is furnished by carrots, spinach, egg yolk and oranges, may produce the manifestations. It is the merit of these American investigators to have demonstrated an

actual carotinemia, that is, tingeing of the blood plasma with pigment which was chemically identified as carotin. They point out that as carotin pigment is a constituent of much of our vegetable food, carotin discolorations are most likely to occur in those subsisting on diets rich in vegetables.

By a coincidence attributable to war-time dietary conditions, necessitating widespread liberal use of vegetable foods, what is evidently the same type of coloration has been widely observed in Europe during the past few years. Kaupe³ described the jaundice-like complexion of children in Bonn who had received considerable quantities of carrots as food. The pediatrician Stoeltzner⁴ at Halle, who has observed similar cases after the ingestion of carrots, designates the condition as "pseudo-icterus," and issues a warning against confusion with jaundice. The lack of sclerotic discoloration affords an easy differential diagnosis. Klose,⁵ who observed the same phenomenon in Silesia, has called attention to the peculiar hue or orange-yellow tint which serves to differentiate the discoloration due to carotin-bearing foods. He also points out that it is most commonly observed in the better nourished children. This can be understood if we recall that the carotin pigment is fat-soluble and hence tends to migrate more readily when an abundance of fat is available.

Moro⁶ evidently observed long ago the same type of discoloration in infants after the feeding of so-called carrot soup, and its cause was ascribed to carotin at that time. The phenomenon is by no means confined to the young or adolescent individual. The possibility of comparatively larger intakes of the responsible pigments in the diet may render the incidence of the discoloration more frequent in children; or it may be that the paler skin of the young renders the yellow complexion more readily detected and hence only apparently more common in childhood. Schüssler⁷ has described what is undoubtedly a carotinoid pigmentation in three men beyond middle life who had been obliged to subsist largely on carrots because of the shortage of potatoes where they lived. Furthermore, it was in adults that von Noorden and Salomon⁸ observed the comparable pigmentation termed by them "xanthosis" and most frequently seen in diabetics, presumably because the latter frequently subsist on vegetable (that is, carotin-containing) diets. Hymans, van den Bergh and Snapper,⁹ as well as Umber¹⁰ sus-

3. Kaupe, W.: *Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung*, München. med. Wehnschr., March 21, 1919, p. 330.

4. Stoeltzner, W.: *Ueber Psuedoikterus nach Mohrrüben-genuss*, München. med. Wehnschr., April 11, 1919, p. 419.

5. Klose, E.: *Hautverfärbung bei Säuglingen und Kleinkindern infolge der Nahrung*, München. med. Wehnschr., April 11, 1919, p. 419.

6. Moro, E.: München. med. Wehnschr., 1908, No. 29, p. 1562; *ibid.*, June 13, 1919, p. 674.

7. Schüssler: *Ueber Hautverfärbung durch Mohrrüben-genuss*, München. med. Wehnschr., May 30, 1919, p. 596.

8. Von Noorden: *Internat. Dermatologenkongress*, 1904. Salomon, H.: *Von Noorden's Handbuch der Pathologie des Stoffwechsels*, Ed. 2, 2: 290; München. med. Wehnschr., May 23, 1919, p. 564.

9. Hymans, van den Bergh and Snapper: *Deutsch. Arch. f. klin. Med.* 110.

10. Umber: *Berl. klin. Wehnschr.*, 1916.

1. Palmer, L. S., and Eckles, C. H.: *J. Biol. Chem.* 17: 191, 211, 223, 237, 245 (March) 1914. Palmer, L. S.: *Ibid.* 23: 261 (Nov.) 1915; 27: 27 (Oct.) 1916.

2. Hess, A. F., and Myers, V. C.: *Carotinemia: A New Clinical Picture*, *J. A. M. A.* 73: 1743 (Dec. 6) 1919.

pected the identity of the "xanthosis" pigment with that of carrots. Spectroscopic examination seemed to verify this.

Hess and Myers,² whose investigations represent the latest word on this subject and thus serve to direct the attention of American clinicians to a phenomenon earlier noted in Europe, have noted that in cases of carotinemia the urine as well as the blood serum was colored yellow. When a small quantity of concentrated carotin was fed, the pigment reappeared rapidly in the urine. This significant fact, so far as we are aware, has never before been reported for man.¹¹ It will henceforth be necessary to deal with the possibility that some of the yellow urine pigment—the indefinite so-called urochrome—is of exogenous origin rather than the descendant of blood or bile pigments, as is now commonly taught.

METHYL—WOOD—ALCOHOL AND ITS END-PRODUCTS IN THE BODY

The menace of methyl alcohol or wood spirits to human health, though long known to physicians, has never been adequately appreciated by the public. Heretofore the dangers arising from its introduction into the body have for the most part been confined to some accidental or casual intake of the substance, and larger numbers of fatalities have arisen only in unusual circumstances, such as the criminal adulteration of alcoholic beverages with wood alcohol. With the enforcement of national prohibition, however, the prospect of more frequent instances of harm through the use of this intoxicant in place of the forbidden grain spirits and other drinks containing ordinary ethyl alcohol is unfortunately before the nation. Within the last few weeks the newspapers have reported the deaths of more than a hundred persons from the adulteration of alcoholic beverages with methyl alcohol. It therefore becomes more necessary than ever to understand the toxicology of methyl alcohol and its behavior in the body. To combat an enemy we must learn to know its mode of attack.

Chemically, the difference between methyl alcohol (CH_3OH) and ethyl alcohol ($\text{CH}_3\text{CH}_2\text{OH}$) is not striking, though the methods of preparation are dissimilar. When wood is subjected to destructive distillation, methyl alcohol is one of the products formed. Ethyl alcohol is derived from the fermentation of grains or fruits. Wood alcohol, about 10 per cent., may be added to ethyl alcohol to render the latter unfit for beverage purposes, and the government has ruled recently that such denatured alcohol must bear on the label a special warning concerning the dangers of methyl alcohol. Elsewhere in this issue appears the report of a case of wood alcohol poisoning thoroughly

studied with reference to the symptomatology and pathology.¹ When death occurs, there is usually coma, with death from respiratory paralysis. According to our present knowledge, methyl alcohol is eliminated slowly from the body, an end-product of the oxidation in the body being formic acid.

Formic acid, HCOOH , has been recognized as an excretory product of methyl alcohol since Pohl² demonstrated, in 1895, that introduction of this alcohol into the stomach leads to an increased output of formic acid in the urine. Hence the latter affords a possible means of ascertaining whether or not wood alcohol has been taken into the organism. A mere qualitative test for formic acid, however, will not suffice; for this substance has been known, at least since 1877,³ as a normal constituent of the urine. Therefore it is essential to know something regarding the extent to which formic acid may occur in the urine under what may be called normal conditions of living. According to Autenrieth,⁴ the quantity eliminated may vary considerably in different persons, though it tends to exhibit a uniformity in an individual living on a fairly uniform diet. The figures approximate 0.25 gm. a day as an illustrative average.

When methyl alcohol is ingested, the output of formic acid in the urine promptly increases. For example, a person who had taken 80 gm. of pure methyl alcohol in the course of eight days showed an extra elimination of formic acid above his usual output equivalent to 5 per cent. or more of the consumed spirits. It will be observed that even when these relatively innocuous doses were taken, a quantitative investigation betrayed the intake. With larger doses, methyl alcohol itself, which is missed in such instances as that just cited, may appear in the urine. Other alleged precursors of formic acid, such as glucose, and lactic acid which might readily be taken into the body in exceptionally large quantities in the course of an ordinary regimen, were found by Autenrieth to be without appreciable influence on the output. Formaldehyd, HCOH , did not produce an increment; but formic acid itself was quite resistant to oxidation in the body, so that unlike many other organic acids it again reappeared in the urine in considerable proportions unchanged. Fortified with these facts, the chemist will be better prepared to ascertain the occurrence of poisoning with wood alcohol when the direct evidence may be lacking or inconclusive. At the present juncture the public should be made to appreciate that methyl alcohol is a dangerous poison; that one of its serious effects is permanent blindness, and that it may be so prepared as to be ordinarily indistinguishable by

1. Harrop, G. A., Jr., and Benedict, E. M.: Acute Methyl Alcohol Poisoning Associated with Acidosis, *THE JOURNAL*, this issue, p. 25.

2. Pohl, J.: *Arch. f. Exper. Path. u. Pharmacol.* **31**: 286, 1895.

3. Thudichum: *Arch. f. d. ges. Physiol.* **15**: 129, 1877.

4. Autenrieth, W.: Ueber den Ameisensäuregehalt des Harns, normalerweise und nach Eingabe verschiedener Substanzen, *München. med. Wchnschr.*, Aug. 1, 1919, No. 31, p. 862.

11. Kaupe (Footnote 3) specially records the absence of apparent changes in the urine in the cases observed by him.

odor or taste from ethyl alcohol. It should be emphasized that the selling or promoting the sale of or use of either methyl or ethyl alcohol as a beverage is the doing of an unlawful act.

DEATHS OF PHYSICIANS IN 1919

During 1919, the deaths of 2,105 physicians of the United States and Canada were noted in THE JOURNAL. Adding 2.5 per cent. to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths to have been 2,163. As the total number of physicians classified in the American Medical Directory is 159,444, we may estimate that the annual death rate approximates 13.29 per thousand. The average annual mortality for the period from 1914 to 1919, inclusive, is approximately 14.81.

Ages.—The age at death varied from 24 to 100, with an average of 59 years, 1 month and 25 days. Of the decedents, 88 were under 30; 239 between 31 and 40; 280 between 41 and 50; 442 between 51 and 60; 498 between 61 and 70; 366 between 71 and 80; 156 between 81 and 90, and 18 between 91 and 100. The greatest mortality occurred at the age of 59, at which 62 deaths were recorded.

Years of Practice.

—The number of years of practice varied from 1 to 76, the average being 32 years, 5 months and 26 days.

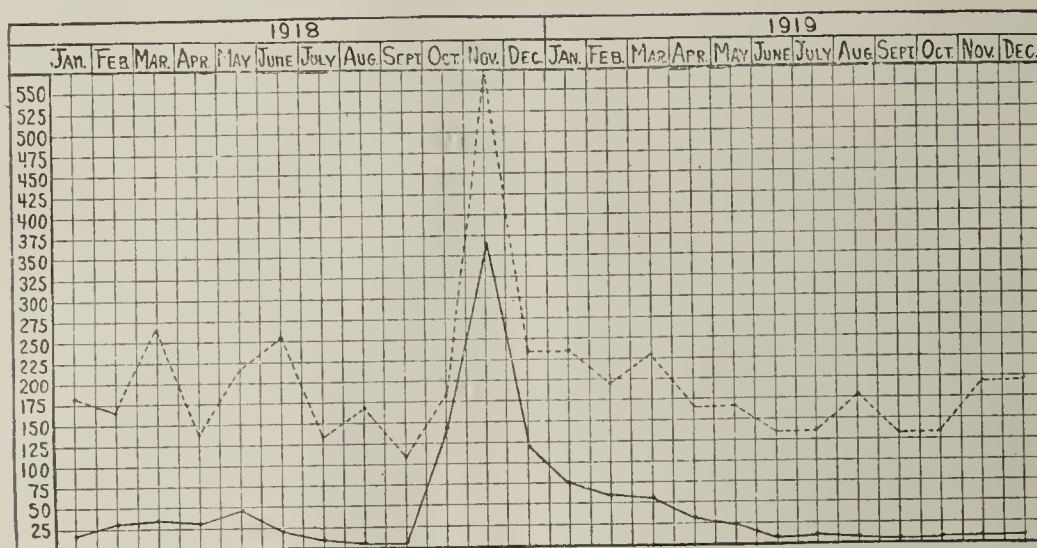
Causes of Death.—General diseases caused 250 deaths; diseases of the nervous system, 248; diseases of the circulatory system, 369; diseases of the respiratory system, 334; diseases of the digestive system, 114; diseases of the genito-urinary system and skin, 156; senility, 320; suicide, 38; accident, 103; homicide, 35, and 90 deaths occurred after surgical operations. Among the principal assigned causes of death were: pneumonia, including influenzal pneumonia, 313; organic heart disease, 222; cerebral hemorrhage, 203; nephritis, 121; malignant disease, 78; tuberculosis, 66; angina pectoris, 53; arteriosclerosis, 35; septicemia, 31; diabetes, 30; appendicitis, 27; myocarditis, 23; uremia, 17; anemia, 16; kidney disease (unclassified), 15; cirrhosis of the liver, and gastritis, each, 14; peritonitis, 12; acute dilatation of the heart, and endocarditis, each, 11; embolism and thrombosis, each, 10, and other diseases, less than 10.

Violence.—There were 176 deaths from violence. Of these, 103 were due to accident and were: automobile, 42; automobile-railway (grade crossing), 15; poison, 10; drowning, 7; street car accidents, falls and railway accidents, each 5; injuries by horses and vehicles, 3; asphyxia, gunshot wounds and other accidental traumatism, each 2; aeroplane, injuries by animals, explosion, burns and crushing, each 1. The 38 physicians who ended their lives by suicide selected the following methods: firearms, 18; poison, 11; strangulation, 3; cutting instruments, and causes not stated, each, 2; asphyxia, 1, and jumping from high places, 1. Of the 35 homicides, 21 occurred as the result of wounds received in battle; 10 were due to firearms; 3 were unclassified, and one was due to strangulation.

Influenzal Pneumonia.—The graphic chart shows the deaths of physicians from pneumonia and influenzal pneumonia and from all causes for the years 1918 and 1919, and indicates clearly the exceedingly rapid increase that occurred during October, November and December, 1918.

Military Service.

—The deaths of 21 officers of the Army and Navy are reported to have occurred as the result of wounds received in battle; 37 officers died abroad from disease; 3, from accident; 2, from suicide, and one was murdered. During the year, 143 physicians died who had served in the Civil



Deaths from influenzal pneumonia and from all causes during 1918-1919: solid line, deaths from all causes; broken line, deaths from influenzal pneumonia.

War, and of these 33 had followed the fortunes of the Confederacy, 45 had been officers of the United States Volunteers, 17 were veterans of the war with Spain, and 5 had served in foreign wars. The Medical Corps of the Army, including the Medical Reserve Corps, lost 325 officers and 11 contract or acting assistant surgeons. The Navy lost 29 medical officers, the United States Public Health Service, 9; the United States Indian Service, 4, and the organized militia, 22, of whom 5 had attained the grade of Surgeon-General.

Civil Positions.—Of those who died, one had been a member of Congress; 22, members of the lower house of legislature; 29 had been mayors; 15 had been members of state boards of health; 12, members of state boards of medical examiners, and 2, members of other state boards.

Association Officers.—Among those who died, one had been President of the American Medical Association, three had been members of the House of Delegates, and two members of the Board of Trustees.

THE TEACHING OF CLINICAL MEDICINE

Teachers of technical subjects naturally fall into one of two groups: first, the type whose interests lie mainly in the philosophic aspects of the subject taught, and second, the type who think of problems in terms of the individual. As Addis¹ has recently pointed out, this is true of clinical medicine, and it is equally true of clinical surgery or of any other clinical subject. Some clinicians who are mainly interested in underlying principles may be described as the investigative type. Others who are chiefly interested in the problem of the individual patient may be regarded as the practical type.

Quite frequently it has been assumed, particularly by the general practitioner and by the man on the street, that the two types are antagonistic, and this assumption is not without some basis in fact. It is doubtless true that the person with the investigative type of mind dislikes to be torn from his laboratory to attend to the details of the wards. We can all recall John Hunter's famous remark under circumstances of this sort that he must "go out and earn that damned guinea." It is equally true that the so-called practical clinician finds it difficult to detach himself from the study of disease in the patient to study disease by laboratory investigation. To this extent there is antagonism between the two types of clinicians; but the assumption that the investigative type is necessarily a feeble-minded putterer when it comes to practical medicine is not correct. Nor is it correct to assume that the practical type of clinician is incapable of grasping the principles of research and of appreciating its importance.

As Addis points out, the teacher of clinical medicine at the present time is in difficulties because he is expected to combine in one person the attributes of these two types. He is expected to be a practical clinician capable of diagnosing and treating disease in the individual, and he is also required to demonstrate his ability to do laboratory research. True, there are those who possess the characteristics of both types, but they are exceptional. The details concerned in the study and treatment of disease have become more and more complicated as our theoretical knowledge has increased. New principles and new methods are constantly being discovered by the investigator, and new applications of these principles and methods to clinical work are continually being made. This has caused a great increase in the routine work involved in the study of a given case and has greatly complicated the task of the practical clinician. Indeed, as Addis points out, the complexity of modern diagnosis and of modern treatment is so great that all of the energies of one man may well be utilized in organizing and conducting this side of the work of a teaching hospital.

It is quite possible that, as has been suggested, we are approaching the time when there will be two types of persons connected with each clinical department, namely, the clinical physiologist, whose chief work will be the intensive study of selected groups of cases and the instruction of students in the application of the principles of physiology to the elucidation of disease, and the clinician, whose chief function will be the care of the patient and the instruction of the student in the practical methods of diagnosis and treatment. Obviously, some such arrangement already exists in some of our better schools. In institutions in which full time medicine has been introduced, there has been a distinct effort to appoint as heads of the clinical departments men of the investigative type. One question that Addis' discussion raises is whether in our enthusiasm for laboratory research we have not overlooked the importance of purely clinical investigation and of the type of physician that naturally tends toward this.

Current Comment

HORSE SERUM VS. DIPHTHERIA ANTITOXIN

Many physicians have been wondering what would be revealed when the veil was raised which has hidden Germany and Austria from the rest of the world during the war. Physicians have been scanning German literature as it began to filter in to see what the Germans have done in medical science. Thus far nothing has been revealed which might be regarded as epoch making. One episode is especially interesting and worthy of note. We are indebted to *Medical Science, Abstracts and Reviews* of London for the references referred to. The average physician believes that the use of diphtheria antitoxin in the treatment of diphtheria had long ago been accepted as a specific and satisfactory method. It has often been cited as typical of definite progress in therapeutics and as an example of what scientific medicine has accomplished. It was startling, therefore, to read that a German investigator, Bingel,¹ perhaps carried away by recent work with nonspecific proteins had come to the conclusion that ordinary horse serum was just as effective as antidiphtheritic serum. He reports his conclusions in 471 cases of diphtheria treated with antitoxin, comparing them with 466 cases treated with ordinary horse serum; he claims to have found no difference in the results; in fact, that the results with ordinary horse serum in some instances were better. He concluded finally that the success of serum therapy in diphtheria could not be attributed to the antitoxin content of the serum and suggested that the large doses used, containing thereby large quantities of horse serum, were responsible for the good results. As might have been expected, Bingel's results and conclusions were not accepted. Numerous articles

1. Addis: *Edinburgh M. J.*, N. S. 23: 235, 1919.

1. Bingel, A.: Ueber Behandlung der Diphtherie mit gewöhnlichem Pferdeserum (Vergleich zwischen 471 mit antitoxischem Diphtherieheilserum und 466 mit gewöhnlichem Pferdeserum behandelten Diphtheriefällen—kein Unterschied), *Deutsch. Arch. f. klin. Med.* 125: 284-332, 1918.

appeared invalidating the conclusions. Feer,² working in the Zurich University Children's Clinic, at once compared sixty-five cases of diphtheria treated with antitoxin with fifty-seven treated with ordinary serum, giving the ordinary serum only in mild cases. He found that the cases treated with ordinary serum, although mild and not ill for so long a time as the others, required five to seven days for the throat to become clean, as compared with three days for those treated by antitoxin. In six cases it was necessary to inject diphtheria antitoxin subsequently in order to obtain a satisfactory result. Moreover, he observed that the membrane again appeared in from three to nine days after the injection of ordinary serum. His results were so definitely in favor of antitoxin that the experiment was not continued. Feer was unable to understand Bingel's results and even suggests that they may have been due to his having used serum from horses which had previously supplied antitoxin. In the same way other German clinicians and experimenters, including Joannovics,³ Friedberger⁴ and Kolle,⁵ confirmed the prophylactic and curative value of diphtheria antitoxin and demonstrated the inefficacy of ordinary horse serum in experimental diphtheria.

THE PROTEIN SHOCK REACTION

When vaccine therapy came into vogue many years ago, one of the points on which the earlier writers laid emphasis was the specificity of the reaction. As time has gone on, more and more doubt has been expressed regarding this specificity. It has been shown experimentally that a variety of substances of a protein nature are capable, when introduced into the body, of causing a reaction on the part of the body cells and fluids with the stimulation of the immunity-producing mechanism. Practical advantage of these studies in the treatment of disease was first sought in this country. Among the earlier studies were those of Miller and Lusk, of Cecil, and of Gay, which indicated the possible value of this form of treatment. In typhoid fever to some extent, but particularly in the treatment of various forms of arthritis, the administration of protein has proved of value. Such administration leads to a reaction that is now spoken of as the protein shock reaction, and this reaction is indeed the greatest drawback to the treatment. Patients capable of reacting to the treatment usually have a severe chill with fever and very often headache and general pains, which may be accompanied by nausea and vomiting and may last for several hours. This is accompanied by a primary fall and a secondary rise in the leukocytes, which may be taken as an indication that the tissues are reacting. Recently Gow⁶ has substantiated previous studies regarding the reaction on the part of the

leukocytes and the general reaction on the part of the patient. While the method is not one that has as yet been widely used, it seems to merit more extensive, careful study.

SIR WILLIAM OSLER

Osler is dead. These three words announce the passing of a man most influential for all that was good; noted for his kindly spirit, well beloved as a teacher and physician. The life of Sir William Osler, more than his works, placed him at the pinnacle of his profession. His winning personality, his cheerful disposition, his faith in mankind, but above all his love for his profession made him what he was—the great physician. Added to these is the fact that from boyhood to his last illness he was a tireless student, an enthusiastic, unceasing worker. His contributions to medical literature, recently compiled, include 730 titles; elegance of style, conciseness of statement and literary quality of his manuscripts marked him as a careful, conscientious writer. His contributions, whether as textbook, periodical literature or spoken word, were examples of masterly English diction. During his long career Sir William Osler was the recipient of practically every honor which the medical profession could bestow on those of merit in its ranks, culminating last July in the international celebration of his seventieth birthday. The occasion was marked by the felicitations and congratulations of the medical world. A memorial volume was prepared containing essays by students and colleagues and presented to him by a distinguished committee. In response to the presentation address Dr. Osler said:

"To have had the benediction of friendship follow one like a shadow, to have always had the sense of comradeship in work, without the petty pinpricks of jealousies and controversies, to be able to rehearse in the sessions of sweet, silent thought the experiences of long years without a single bitter memory, fill the heart with gratitude. That three transplantations have been borne successfully is a witness to the brotherly care with which you have tended me. Loving our profession, and believing ardently in its future, I have been content to live in it and for it. A moving ambition to become a good teacher and a sound clinician was fostered by opportunities of an exceptional character, and any success I may have attained must be attributed in large part to the unceasing kindness of colleagues and to a long series of devoted pupils whose success in life is my special pride."

The statement quoted is characteristic of the man. It shows why he was loved, why he succeeded—why his name will appear in the history of medicine as an example of the ideal physician.

Cuba's Fine Smallpox Record.—Our exchange *Vida Nueva* of Havana cites the recent smallpox death rate in various countries from 70 in France, 78 in England and 1,057 in Portugal to Spain's 1,262, while Cuba was the only country on the direct paths of commerce which had no cases. Havana had 1,654 cases in 1887; 1,404 in 1897; 2 in 1900, and then for ten years not a single case. As was mentioned recently, there has been a small epidemic in Cuba, for the first time in seventeen years, notwithstanding the opportunities for importation of the disease.

2. Feer, E.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, München. med. Wchnschr. **66**: 343-344, 1919.

3. Joannovics, G.: Zur Behandlung der Diphtherie mit gewöhnlichem Pferdeserum, Wien. klin. Wchnschr. **32**: 220-222, 1919.

4. Friedberger, E.: Hat das normale Pferdeserum einen Einfluss auf die experimentelle Infektion des Meerschweinchens mit Diphtheriebazillen? Berl. klin. Wchnschr. **56**: 151-158, 1919.

5. Kolle, W., and Schlossberger, H.: Zur Frage der Heilwirkung des Diphtherieserums, Med. Klin. **15**: 553-555, 1919.

6. Gow: Quart. J. Med. **13**: 82, 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Convicted of Misuse of Mails.—Dr. George F. Purcell of Los Angeles was found guilty of misusing the mails to give information where an illegal operation might be performed. The case is the first of a series of six brought by the government for similar offenses.

Illegal Practitioners Arrested.—Drs. Harry G. Palmer and Jay G. McMath, osteopaths of Compton, according to report, have been arrested on a charge that they murdered Mrs. Marie Vegas Martinez, who died as the result of an alleged illegal operation performed by them. The report states also that T. Wah Hing, a Chinese herb doctor, who has been practicing in Sacramento for many years, was convicted of practicing medicine without a state license.

Personal.—Dr. John A. Reily, medical superintendent of the State Hospital, Patton, has been reelected executive head of the institution.—Dr. Ethel M. Watters, San Francisco, has been appointed head of the new bureau of child hygiene.—Dr. Ray W. Karras has been reappointed surgeon to the Soldiers' Home, Los Angeles.—Robert M. Dodsworth, Major, M. C., U. S. Army, Long Beach, was honor guest at the meeting of the Harbor Medical Association, November 28.

Popular Medical Lectures.—Stanford University Medical School announces the thirty-eighth course of popular medical lectures, to be given at Lane Hall, San Francisco, on alternate Friday evenings at 8 o'clock.

Jan. 9, 1920: "The Cause and Prevention of Nervousness," by Dr. Julian Mast Wolfsohn, San Francisco; Jan. 23: "The Philosophy, Cause and Prevention of Disease," by Dr. Walter V. Brem, Los Angeles; Feb. 6: "The Hospital and the Public," by Dr. William Raymond Dorr, San Francisco; Feb. 20: "The Out-patient Clinic as a Health Center," by Dr. Alfred Cummings Reed, San Francisco; March 5: "The Problem of the Drug Addict," by Dr. Robert Eugene Bering, San Francisco, and March 19: "The Health Age," by Mr. Celestine Sullivan.

ILLINOIS

Personal.—Dr. Boleslaus Klarkowski, member of the Chicago Board of Education, sustained serious burns of the eye by explosion of chemicals, December 22.—Dr. John A. Wheeler, Springfield, formerly sheriff of Sangamon County, has been appointed medical director of the juvenile court.

Illegal Practitioner Again Fined.—J. P. Vizgird, St. Louis, has again been fined \$200 and costs by the Department of Registration and Education for practicing medicine in Illinois without a license. The case had been pending against Vizgird in the St. Clair (Ill.) County Court for several months. Following the formal disposition of this case, five more informations were filed against Vizgird for violating the Medical Practice Act and he was compelled to give bond before he was permitted to return to St. Louis. Vizgird paid his fine and promised never to practice medicine in Illinois again so the remaining charges were dismissed. He had been fined for a similar offense in June, 1918.

Venereal Diseases in Illinois.—The division of social hygiene, state department of public health, has recently issued a report of known cases of venereal diseases in Illinois for the year ending June 30, 1919. The total number of cases reported is 11,915 with about 5,000 additional cases treated in the several clinics conducted by the state. There were 7,756 cases reported among males with 502 cases of syphilis, 5,752 cases of gonorrhea and 474 cases of chancroid. Total number of women infected was 4,159 of whom 1,808 were victims of syphilis, 2,342 were suffering from gonorrhea and nine from chancroid. Six hundred and fifty-six of these victims of venereal disease were employed in the handling of foodstuffs.

Chicago

The Quine Dinner.—A dinner was given to Dr. William E. Quine, December 27, in celebration of his completion of half a century in the practice of medicine. More than 300 of Dr. Quine's friends were present to do him honor. Dr. Frank Billings was toastmaster; Dr. David Kinley, dean of the University of Illinois, Urbana, spoke on "The Doctor and

the Community"; Dr. Daniel A. K. Steele, on Dr. Quine as "The Colleague"; Mr. John T. Richards, on Dr. Quine as "The Man," and Dr. James B. Herrick, on Dr. Quine as "The Physician." Dr. William A. Pusey presented Dr. Quine with a book containing the autographs of those present at the dinner.

INDIANA

Personal.—Dr. Varney Hazlewood, Bedford, has been appointed head physician of the Indiana State Sanatorium, Rockville.

Smallpox at Evansville.—The Evansville Board of Health reported, December 4, that there were eighty cases of smallpox in the city, three fourths of the number being children.

Judgment Awarded Physician.—Dr. William F. Walsh, Indianapolis, was awarded a judgment of \$4,000 against Patrick, Edward and Dennis Bryan, whom he charged with malicious prosecution.

Parking Privileges Extended.—Mayor Jewett of Indianapolis has signed an amendment to the traffic ordinance, extending to three hours the limit for parking in the congested districts for physicians who have downtown offices.

Illegal Practice Charged.—The State Board of Medical Registration and Examination filed affidavits, December 5, against B. C. Hendricks, a chiropractor of Kendallville, and A. J. Newman, Gary, who are alleged to be practicing medicine without a state license.

Society Reorganized.—Marshall County Medical Society has been reorganized and the following officers have been elected: president, Dr. Frank H. Kelly, Argos; vice president, Dr. Howard P. Preston, Plymouth, and secretary-treasurer, Dr. Harry Knott, Plymouth.

Anderson Clinic Organized.—The Anderson Clinic has been incorporated by Drs. Lee F. Hunt, Thomas M. Jones, Albert W. Collins, Weir M. Miley, George A. Whitledge, Henry W. Gante, S. G. McDonald, and Earl E. Brock. The clinic will be housed in a two-story brick building at Jackson and Twelfth streets, and will have clinical and pathologic laboratories, roentgen ray and all other necessary equipment. The clinic is incorporated for \$75,000.

Osteopath Sues Physicians.—A suit for \$50,000 damages for an alleged conspiracy to prevent him from practicing surgery in any of the hospitals of Fort Wayne, has been instituted by Kent L. Seaman, an osteopath, against Drs. Henry O. Bruggeman, Miles F. Porter, Ralph M. Bolman, Ben P. Weaver, Lyman T. Rawles, Edgar N. Mendenhall, John E. McArdle, L. Parker Drayer, Albert E. Bulson, Maurice I. Rosenthal, Homer E. Glock, all of Fort Wayne, and the Poor Handmaids of Jesus Christ, a corporation. An injunction is brought against all the defendants to restrain them from hindering him from the practice of surgery in St. Joseph's Hospital or elsewhere.

IOWA

Tuberculosis Hospital for Polk County.—Announcement is made that Polk County will have a \$100,000 tuberculosis hospital as soon as a suitable location is found.

Inebriate Hospital Closed.—The State Inebriate Hospital, Knoxville, was closed, December 1, on account of lack of patronage. At the time of closure only eleven patients were under treatment.

Personal.—David S. Fairchild, Jr., Col., M. C., U. S. Army, Clinton, chief surgeon of the Forty-Second Division, has been honorably discharged from the United States service.—Dr. Williams Cammack and Libby Seymour Cammack, formerly of Fort Dodge, have returned after twelve years' service as medical missionaries in Angola, Portuguese West Africa.

Laboratory Opened.—The Physicians' Club of Keokuk celebrated the formal opening of the Keokuk Clinical and Pathological Laboratory, December 2. The laboratory is operated by the state board of health, and Dr. Sarah R. Kellman is director. The physicians of the surrounding country were invited to a banquet which was followed by addresses by Dr. Henry Albert, Iowa City, who spoke on the laboratory from the standpoint of the laboratory man, and Dr. William H. Rendelman, Davenport, who discussed the value of the laboratory from the standpoint of the clinician.

Hospital Items.—St. Luke's Hospital, Davenport, was opened, October 15.—The United Lutheran Church Hospital has purchased the old Oaks Hotel, Clear Lake, and

will remodel the building for a hospital at an estimated cost of \$300,000.—Cedar Valley Hospital, Charles City, has resumed operation.—Sisters Hospital, at Grinnell, has been turned over by the contractors, and will soon be opened formally.—The Eleanor Moore Hospital, Boone, has been taken over by Boone County.—The cornerstone of the new main building of St. Thomas Emergency Hospital, Marshalltown, was laid recently with impressive ceremonies.

MASSACHUSETTS

King Thanks Harvard Unit.—King George V of England, in a communication received by Harvard University, expresses his personal appreciation of the service contributed by the Harvard Unit during its three years and a half of duty with the British Forces in France.

Floating Hospital Opens Shore Work.—The new on-shore department of the Boston Floating Hospital, which will care for babies during the winter, and specialize in research study, has been opened at 40 Wigglesworth Street, Boston, where three three-story houses rented from Harvard University have been renovated at a cost of about \$40,000.

Personal.—Dr. Ernest William Goodpasture, Boston, has been appointed assistant professor of pathology in Harvard University Medical School.—Dr. John H. Wyman, Medway, has been appointed associate medical examiner (coroner) for the Norfolk District.—Dr. Isidor D. Bronfin, superintendent and medical director of the Beth Israel Hospital, Roxbury, Boston, has resigned.—Dr. Robert B. Scales, Dorchester, Boston, has been commissioned lieutenant-colonel, M. R. C., U. S. Army.—Dr. Edward H. Bradford, Boston, has been reappointed president of the Massachusetts Hospital School.—Dr. Ernest B. Emerson, superintendent of the Brockton Hospital, has resigned and has returned to his former post as superintendent of the Rutland State Sanatorium.—Dr. Henry P. Walcott, chairman of the metropolitan water and sewerage board, Boston, has been retired after more than forty years in the service of the commonwealth of Massachusetts.—Dr. Thomas F. Joyce has been appointed superintendent of the Lawrence Municipal Hospital.

MICHIGAN

Club Election.—Charlotte Medical Club has elected Dr. Vinton J. Rickerd, president, Dr. Flavius J. Knight, vice president, and Dr. Stanley A. Stealy secretary-treasurer.

Fritch Sentenced.—A jury in Detroit is reported to have found Dr. George A. Fritch guilty of manslaughter, and he was sentenced, October 28, to serve from one to fifteen years in the state branch prison, Marquette, and was taken there to begin his sentence December 9.

Fires in Hospitals.—Fire destroyed Mercy Hospital, Big Rapids, December 1, with the loss estimated at \$100,000. Forty patients were removed, and it is reported that one individual lost his life.—Reid City Hospital burned, November 18, with a loss of \$5,000. The patients were removed without casualty.

Personal.—Dr. Griffith A. Thomas, Detroit, who resigned as police surgeon to enter the army in 1917, has returned to Detroit and resumed his work at police headquarters.—Dr. Eugene Miller, health officer of Battle Creek, has been elected director of the Michigan State Health Association.—Dr. Alvin H. Rockwell, Kalamazoo, has been elected president of the Michigan State Health Association.

Clinics for Practitioners.—The staff of the University Hospital, Ann Arbor, announces a series of medical, surgical and special clinics to be given on the afternoon and evening of the second Wednesday of every month and the morning of the following day. These clinics are intended to help practitioners to keep abreast of new and interesting developments. Difficult cases will be demonstrated and discussed. An added feature will be a clinicopathologic conference on cases coming to necropsy. The plan has been arranged to enable practitioners to see the maximum amount of clinical material with the least expenditure of time, and to carry out the policy of the hospital to put its teaching facilities at the service of the profession. Conferences will be held in the surgical amphitheater of the University Hospital unless otherwise stated. The schedule has been arranged with the view of allowing practitioners to make the best train connections in reaching and leaving Ann Arbor. The exercises will start at 1:30 p. m., 7:30 p. m. and 8:30 a. m. The first conference will be held, Jan. 14 and 15, 1920.

NEW JERSEY

Personal.—Dr. Wilfred M. Post, Princeton, has returned from Asia Minor, where he served with the Near Egypt Relief.—Dr. John Cook, Bayonne, has been appointed a member of the staff of the Dyersburg (Tenn.) General Hospital.

Banquet to Service Men.—Mercer County Medical Society gave a banquet, November 12, at Trenton, to thirty-one physicians of Mercer County who were in the United States service during the world war. Dr. Irvine F. P. Turner, Toronto, president of the society, officiated as toastmaster.

New Officers.—The nineteenth annual meeting of the Tri-County Medical Association of Morris, Sussex and Warren was held at Hackettstown, October 14, and the following officers were elected: president, Dr. Frederick P. Wilbur, Franklin; vice presidents, Drs. Henry W. Kice, Wharton, and Louis C. Osmun, Hackettstown; secretary, Dr. Charles B. Smith, Washington, and treasurer, Dr. Frederick W. Flagge, Rockaway.

Infant Mortality Rate.—During the first nine months of 1919, the infant mortality rate for Newark was 80.6 per thousand, as against 87.8 for the same period in 1918. This is held to be a very low rate, among the lowest in the country, and is especially noteworthy because Newark presents all the conditions that are held to make difficult a very low infant mortality rate, such as congestion, industrial community, milk supply coming from great distances, large foreign population, and a large percentage of births attended by midwives.

Mental Hygiene.—A new work has been introduced in the Bureau of Mental Hygiene, Mental Hygiene Social Service. A psychiatric social worker has been appointed to carry on the work. The objects are to aid the promotion of mental hygiene; to give assistance to the mentally maladjusted; to maintain psychiatric clinics, and to inform the public as to the cause and means of prevention of mental diseases and deficiencies. In the first month of its existence, forty-two cases were referred to this bureau by various organizations, charities and private individuals.

NEW YORK

Tuberculosis Survey.—The recent survey of Schenectady County shows that of 120 individuals examined, 17, or 14 per cent., were found positive, and 35, or 29 per cent., suspicious.

Laboratory for Montgomery County.—At a recent meeting of the board of supervisors of Montgomery County, it was voted to appropriate \$5,000 for the establishment of a county laboratory at Amsterdam.

Water Purification for Tonawanda.—The town of Tonawanda has voted to issue \$200,000 in bonds for a water purification works. The town has just recovered from an epidemic of typhoid fever, which was demonstrated to have been water borne.

Personal.—Dr. Thomas B. Carpenter, Buffalo, for many years first assistant bacteriologist of the laboratories of the department of health of Buffalo, has been appointed director of laboratories, succeeding Dr. William G. Bissell, deceased.—Dr. Grace M. Norris, Utica, has been elected coroner of Oneida County.

Want Reformatory Reopened.—An appeal has been made to John D. Rockefeller, Jr., to reopen the buildings which he established at a cost of \$500,000 near the Bedford Reformatory for Women, as a psychopathic hospital and institute for the study of social and mental hygiene, in connection with the work of the Bedford Reformatory. At the time Mr. Rockefeller erected the buildings he gave the state the privilege of buying them, but, as no action was taken, the buildings were closed.

New Officers.—The Albany County Medical Association, December 12: president, Dr. James N. Vander Veer; vice president, Dr. George W. Papen, Jr., secretary, Dr. Percival W. Harrig, and treasurer, Dr. Nelson K. Fromm, all of Albany.—Rensselaer County Medical Society, in Troy, December 9: president, Dr. Christopher J. Patterson (reelected); vice president, Dr. William J. Fleming; secretary, Dr. William Kirk, Jr., and treasurer, Dr. Russell F. Benson, all of Troy.—Onondaga County Medical Society at Syracuse, December 9: president, Dr. Harry J. Brayton; vice president, Dr. Robert Burns; secretary, Dr. George S. Reed, and treasurer, Dr. George M. Retan, all of Syracuse.

Clinics Combined.—The State Hospital Commission, which for some years, has been conducting clinics successfully

throughout the state in order to provide communities with facilities for the examination of cases of nervous and mental disorder, and the commission for mental defectives have evolved a program for a system of state-wide clinics. It is believed that better service can be rendered by combining the clinics for mental defectives with those for nervous and mental diseases. The first of these combined clinics was opened recently at Watertown, through the cooperation of Dr. William C. Sandy, New York City, and Dr. Paul G. Taddiken, Ogdensburg. It has been further suggested that these clinics could well be coordinated with the proposed system of health centers which the department of health desired to establish throughout the state.

Aid for Industrial Cripples.—The committee on education of the state reconstruction commission recently held a conference for the purpose of discussing plans for dealing with the problem of industrial cripples. According to statistics obtained by the commission, industrial casualties in the United States every year equal or exceed in number the country's total of wounded during the war. The questions particularly discussed were whether special schools and employment bureaus for industrial cripples were to be started and whether retraining and reeducation should be made compulsory. It was decided to urge the state immediately to inaugurate a policy of caring for men and women who are crippled through industrial accident or otherwise. A committee was appointed to draft proposals for the consideration of the legislature and to map out a program of rehabilitation. This is to be carried through irrespective of the federal bill now pending, in which \$1,000,000 is appropriated for the work, to be matched dollar for dollar by the several states.

New York City

Personal.—Dr. Abraham Strachstein has been appointed an instructor in urology in Columbia University.

Harvey Society Lectures.—The fifth lecture of the Harvey Society series will be delivered by Dr. Homer F. Swift, New York City, of the Rockefeller Institute, at the New York Academy of Medicine, January 10, on "Trench Fever."

New Hospital for Jamaica.—The trustees of the Jamaica Hospital, Queens, have planned to erect a new hospital building at a cost of \$250,000 on a plot of ground 200 feet square extending along Ridgewood and Lester avenues, Jamaica.

Fund for Visiting Nurses.—The Brooklyn Visiting Nurses' Association has adopted resolutions authorizing the raising of \$250,000 for work in that borough. A fund of \$25,000 to endow a visiting nurse in memory of Miss Elizabeth Hedin, who died during the influenza epidemic as a result of her devotion to cases under her care, will be a part of the campaign.

Division of Lectures Established.—The bureau of public health education of the department of health has instituted a division of lectures which is prepared to fill requests for lectures on any health subject, and especially on venereal disease. Societies or organizations desiring lectures may secure an appointment by communicating with Christine Kefauver, supervisor of lectures, bureau of public health education, 505 Pearl Street, Manhattan.

Health Department Sells Milk.—The health department has begun the sale of Grade B milk at 15 cents a quart at nine of its baby health stations. If the scheme is successful it will be extended to the entire sixty milk stations conducted by the health department. This is the grade of milk ordinarily retailing at 17 and 18 cents a quart. In this way Dr. Royal S. Copeland is endeavoring to develop a healthy competition which will eventually result in lower prices of milk delivered to consumers.

Cardiac Classes for Schoolchildren.—The cardiac class, conducted for the past two years by the Educational Alliance at East Broadway and Jefferson Street, has been so successful that three others have been started in Manhattan and one in Brooklyn. The results have been so gratifying that an appeal has been made to the board of education to provide special classes for children suffering from cardiac conditions. Beth Israel Hospital has been assisting at these cardiac classes with its social service department.

New Officers.—At the ninety-ninth annual meeting of the Medical Society of Kings County, December 16, Dr. John A. Lee was elected president; Dr. Arthur H. Bogart, vice president; Dr. Charles E. Schofield, secretary (reelected), and Dr. Robert L. Moorhead, treasurer, all of Brooklyn.—At the annual meeting of the Queens-Nassau County Medical

Society at Jamaica, L. I., December 9, the following officers were elected: president, Dr. Arthur D. Jaques, Lynbrook; vice president, Dr. Thomas C. Chalmers, Forest Hills, and secretary-treasurer, Dr. James S. Cooley, Mineola.

OHIO

Personal.—Dr. Willard J. Stone, formerly of Toledo, has moved to Pasadena, Calif.

New Academy Officers.—At the annual meeting of the Dayton Academy of Medicine, December 12, Dr. Lynn M. Jones was elected president; Dr. Matthew Porter, vice president, and Dr. Edmund E. Bohlender, treasurer.

Academy to Issue Journal.—A new monthly medical journal to be called the *Academy Journal* is to be issued by the Cincinnati Academy of Medicine. Dr. Charles L. Bonifield is chairman of the committee to carry out this project.

Officers Elected.—The following officers of the Cleveland Medical Library Association were elected to serve during 1920: president, Dr. John P. Sawyer; vice president, Dr. Arnold Peskind; secretary, Dr. George E. Follansbee; treasurer, Dr. Clyde L. Cummer, and directing librarian, Dr. Carl A. Hamann.

Prizes to Nurses.—At the last meeting of the Medical Board of the Jewish Hospital, Cincinnati, it was announced that an anonymous donor had arranged to give prizes of \$60 each to the two highest ranking nurses in the first and second years of the training school, and prizes of \$120 each to the two highest ranking nurses among the graduating nurses of the institution.

Clinic Opened.—The Canton City Clinic was formally presented to the city by the Canton Chapter of the American Red Cross, December 11, and was accepted for the Canton Medical Society and the people of Canton by Dr. Austin C. Brant. The clinic is intended to be a stepping stone for a public or free city hospital. Dr. Harry P. Pomerene has been elected president, Dr. Charles A. Crane vice president, and Dr. Loyal E. Leavenworth secretary, all of Canton.

Prizes Awarded.—The Cleveland Medical Library Association awarded as prizes, to Cleveland physicians, the income from a fund established by Dr. Hamilton Fisk Biggar as follows: \$250 to Dr. Roy Gentry Pearce, for an essay on "Cardiorespiratory Mechanism in Health and Disease"; \$250 to Dr. Roy Wesley Scoti, for an essay on "Studies of Pulmonary Emphysema," and \$100 to Dr. Marvin Da C. Shie for an essay on "The Importance and Scope of Modern Industrial Medicine."

PENNSYLVANIA

Increased Space for Sanatorium.—Dr. Edward Martin, Philadelphia, state commissioner of health, purchased, December 9, for \$20,000, the White Pine Inn and other property adjacent to the Mont Alto Sanatorium.

New Contagious Disease Hospital.—Bower Hill, near Woodville, Allegheny County, has been tentatively decided on as the site for a proposed new contagious disease hospital, to be erected under the direction of the county commissioners. A plan has been presented providing for a ninety-six room institution to cost about \$240,000.

Personal.—Dr. Stephen E. Tracy has been elected medical director of the Stetson Hospital, Philadelphia, succeeding Dr. Lewis S. Somers, resigned.—Dr. Robert B. Mackey, Clark's Summit, has been commissioned major, M. C., Pennsylvania National Guard, and assigned to duty with the Thirteenth Infantry.—Dr. John Murphy, Loretto, was given a testimonial, December 24, by the people of Loretto, in recognition of his services to the community for nearly forty years, and especially during the influenza epidemic of last year.—Dr. Charles C. Cooner, Kulpmont, has been appointed deputy coroner of Northumberland County.

WASHINGTON

Personal.—Joseph A. McKee, Lieut.-Col., M. C., U. S. Army, has returned to Seattle, after an absence of three and one-half years, abroad.—Dr. Frank P. C. Davis has been appointed city health officer of Kelso, succeeding Dr. Jeremiah Ballard.

New Hospital Building Plan.—The announcement is made that the Sisters of St. Joseph of Peace who have conducted the Wenatchee General Hospital for the last three years will immediately commence the erection of a \$75,000 hospital on a 3-acre site at the edge of the town.

WEST VIRGINIA

Clinical Conference.—The Ohio Valley General Hospital, Wheeling, announces that its attending staff holds clinical conferences twice a month, at the hospital, at which other physicians are invited to be present.

Staff Named.—Dr. Hugh H. Carr, Fairmont, has been named chief of the surgical staff of the Cook Hospital, and Dr. Edward W. F. Howard, Fairmont, chief of the medical staff of the institution, by the Marion County Medical Society.

Society Meetings.—The Eastern Panhandle Medical Society met at Charleston, December 10, and elected Dr. H. G. Tomkin, Berkeley County, president, Dr. Briscoe B. Ranson, Harper's Ferry, vice president, and Dr. Joseph M. Miller, Charles Town, censor. The next meeting will be held at Martinsburg. —Harrison County Medical Society at its annual meeting in Clarksburg, December 4, elected Dr. Solomon L. Cherry, Clarksburg, president, Dr. Arthur T. Post vice president, Dr. Irving D. Cole secretary, and Dr. Jesse F. Williams, treasurer.

WISCONSIN

Dispensary Opened.—The new Milwaukee Dispensary, on the third floor of the Saxe Building, has been opened under the charge of Dr. A. Harry Cohn.

Radium Association Incorporated.—The Physician's Radium Association has been incorporated at Milwaukee, with a capital stock of \$20,000, by fourteen physicians of Milwaukee.

Hospital Items.—A movement was recently started which promises to provide a modernly equipped hospital for Ripon. —Announcement has been made that the erection of a \$50,000 hospital at Stanley has been definitely planned.

Personal.—Dr. Francis W. Starr, Stanley, is said to have been fined \$25 for having broken the rule of the state board of health regarding public funerals over remains of persons having contagious diseases. —Dr. Augustus L. Beier, Chippewa Falls, has been appointed to succeed Dr. Alfred W. Wilmarth as superintendent of the State Home for Feeble-minded, Chippewa Falls.

New Officers.—At the annual meeting of the Milwaukee County Medical Society, December 11, Dr. Frank C. Studley was elected president; Dr. Clarence A. Baer vice president; Dr. Daniel Hopkins, secretary, and Dr. Arthur R. F. Grob, treasurer. —Waukesha County Medical Society at its annual meeting held in Waukesha, December 4, elected Dr. Floyd W. Aplin, Waukesha, president; Dr. George H. Perrin, Menomonee Falls, vice president, and Dr. S. Breck Ackley, Oconomowoc, secretary-treasurer. —At the sixteenth annual meeting of the West Wisconsin District Medical Society held in Eau Claire, November 23, Dr. Johan B. Mathiesen, Eau Claire, was elected president, and Dr. Herman F. Derge, Eau Claire, secretary.

CANADA

New President of McGill.—Sir Auckland C. Geddes, M. P., Montreal, who served during the war as Minister of National Service and Reconstruction, and president of the Local Government Board, formerly professor of anatomy at the Royal College of Surgeons, Ireland, and later professor of anatomy in McGill University, has been elected principal of the latter institution.

GENERAL

Tristate Physicians to Meet.—The annual meeting of the Tristate Medical Society of Virginia and the Carolinas will be held in Charlotte, N. C., February 18, under the presidency of Dr. Robert C. Bryan, Richmond, Va.

More Gifts by Rockefeller.—Of the \$100,000,000 Christmas gift of John D. Rockefeller, one half was given to the Rockefeller Foundation, and of this sum, \$5,000,000 is to be expended to the development and improvement of the leading medical schools in Canada, these schools being required to raise additional sums from other sources.

Congress on Internal Medicine.—The American Congress on Internal Medicine will meet in conjunction with the American College of Physicians in Chicago, February 23 to 28. The sessions will include daily clinics and laboratory demonstrations in hospitals and teaching institutions, and evening meetings, one of which will embrace the fourth annual convention of the American Congress of Internal Medicine.

Deaths from Wood Alcohol.—As a result of the use of substitutes for liquor containing methyl alcohol since prohibition became effective, 255 deaths have been reported in the United States, and of these about 140 followed Christmas celebrations. Of these deaths thirteen have thus far been reported in Chicago alone, and in New York there are said to be at least 100 cases of blindness following the use of wood alcohol.

Tristate Physicians Meet.—The Tristate Medical Society of Louisiana, Arkansas and Texas held its fifteenth annual meeting at Marshall, Texas, under the presidency of Dr. Edwin L. Beck, Texarkana, and elected the following officers: president, Dr. Charles R. Hargrove, Marshall; vice presidents, Drs. Lucian H. Lanier, Texarkana, Texas, Henry W. Jarrell, Mansfield, La., and Joe Becton, Greenville, Texas, and secretary, Dr. Frank H. Walke, Shreveport, La.

Ship Named for Red Cross.—The *Amcross*, a cargo vessel of 9,000 deadweight tons, was launched in the yards of the Merchant Ship Building Company, Chester, Pa. *Amcross*, which is the cable-code word for the American Red Cross, was selected as the name of the new ship as a compliment to the war work of the Red Cross. Miss Margaret Farrand, daughter of Dr. Livingston Farrand, chairman central committee, American Red Cross, was sponsor for the vessel.

Southern Surgeons Meet.—At the annual meeting of the Southern Surgical Association held in New Orleans, December 16 to 18, the following officers were elected: president, Dr. Willard Bartlett, St. Louis; vice presidents, Drs. C. Jeff Miller, New Orleans, and Edward G. Jones, Atlanta, Ga.; secretary, Dr. Hubert A. Royster, Raleigh, N. C. (reelected), and treasurer, Dr. Guy L. Hunner, Baltimore (reelected). Hot Springs, Va., was chosen as the place of meeting for 1920.

The Seessel Fellowships.—Yale University announces the two Theresa Seessel Research Fellowships to promote original research in biologic studies. These fellowships yield an income of \$1,000 each, and are open to men or women. Preference is given to candidates who have already obtained their doctorate, and have demonstrated, by their work, their fitness to carry on successfully original research of a high order. The holder must reside in New Haven during the college year from October to June. Application should be made to the dean of Yale University, before May 1, and should be accompanied by reprints of scientific publications, letters of recommendation and a statement of the particular problems which the candidate expects to investigate.

Child Surveys.—Special investigations made by the children's bureau of the U. S. Department of Labor in three American cities show how babies have suffered as a result of the advance in the price of milk. In Baltimore, of the 728 children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink as against 60 per cent. a year ago; in Washington, half of those between 2 and 7 years of age, who were visited by the public health nurses were receiving no fresh milk to drink; and in New Orleans conditions were even worse. Studies of the type recommended by the chief of the children's bureau would seek to determine all a child's needs. They would be based on actual living conditions in various types of communities; and would accordingly have a practical and not merely a theoretical value. Through them mothers would obtain an authoritative statement concerning the basic needs of growing children, and communities would be given an insight into the way in which those needs may be supplied.

Bequests and Donations.—The following bequests and donations have recently been announced:

To establish and maintain a nurses' home and training school in connection with the Goshen, Ind., Hospital a bequest of \$65,000, by the will of Mrs. Laura A. Kindig, Goshen.

Washington University Medical School, St. Louis, \$300,000 to endow a department of pharmacology. Of this amount, one half was given by the General Education Board and the other half was raised by the medical school.

New York Post Graduate Medical School and Hospital, New York City, \$25,000, by the will of Frederick Meade.

Presbyterian Hospital, New York City, the residuary estate valued at \$500,000, at the death of his two sisters, by the will of Charles G. Thompson.

Grant Hospital, Chicago, a donation of \$50,000 toward the endowment fund; \$25,000 remitted from the Christmas sale at the Parkway Hotel, and an addition to the present nursery to accommodate twenty more beds, by Mrs. William C. Seipp.

Michigan Hospital and School for Crippled Children, \$1,100,000; for a new nurses' home, \$650,000; Children's Free Hospital, Detroit, \$125,000, and St. Vincent's Orphan Asylum, Detroit, \$75,000, a Christmas gift from Mayor James Couzens of Detroit.

FOREIGN

Deaths in the Profession Abroad.—Dr. E. J. Pontoppidan, professor of skin and venereal diseases at the University of Copenhagen and member of Danish, Swedish, Argentine and Italian dermatologic societies, elected at Rome in 1912 to preside at the Eighth International Dermatology Congress; surgeon in chief of the Rudolph Berghs Hospital; aged 72. —Dr. Raphaël Lépine of Lyons and Dr. C. Ladame, professor of psychiatry at the University of Geneva.

Semicentennial of Sainte-Beuve.—It is just fifty years since the death of Sainte-Beuve whose "Monday essays" in the Paris dailies are said to have been events of European importance. As our French exchanges are recalling, he was a physician before he turned to literature, and his training in psychology and biology helped to make him, as he was called, the world's greatest literary critic. It was Sainte-Beuve who said when some one remarked that charlatanism was everywhere, "Yes, in politics, in the art of governing mankind that is perhaps true. But in science, in art, the glory, the eternal honor is that charlatanism shall find no entrance; herein lies the inviolableness of that noble portion of man's being."

The Flemish Congress of Physicians and Naturalists.—The Amsterdam section of this Flemish association recently gathered at Antwerp for its first meeting since the beginning of the war. About thirty members were present, and Professor De Bruyne presided. Prof. F. Daels delivered an illustrated address on clinical cures of cancer. The members voted unanimously—four refraining from voting—to drop twenty-four members from the membership of the general association on account of pro-German "activism." The *Nederlandsch Tijdschrift* states that the assembly discussed the foundation of a Flemish medical journal, in connection with publishing the transactions of the congress, but no decision was reached.

Citations for Bravery.—The *Presse Médicale*, November 29, gives a long list of official citations of French medical officers for exceptionally devoted services during the war, and two American names are included in the list. The first is Dr. Lester Pratt, medical officer in the Fifth Regiment of Marines. He is stated to have had charge of an advanced station in Belleau Wood, June 11, 1918. "His post being exposed to a violent bombardment, he displayed remarkable self possession and devotion to duty." The other is Dr. Richard Shea, also a medical officer of the Fifth Regiment of Marines. "During the attack of Belleau Wood, he displayed extraordinary heroism, tending the wounded during a violent bombardment, June 11, 1918." The official notice of the citations in the French records is dated Oct. 15, 1919.

Tuberculosis and Housing.—The medical officer of health for the city of Edinburgh claims that statistics have clearly proved the close relationship which exists between tuberculosis and overcrowding. Out of 263 cases of tuberculosis notified in Scotland in 1914 and 1915, no less than 159 came from houses of one, two and three apartments. The old country cottages of Scotland are badly situated and very damp. Thorough ventilation is impossible, and, indeed, there is often scarcely any ventilation at all, the windows being so fixed that only one small pane can be opened. The situation is not very much better in England. Of the tuberculous persons visited in Somerset between 1913 and 1918 more than 40 per cent. were found to be sharing their bedrooms with other persons, and in less than 10 per cent. of all cases was it found possible to remedy this state of affairs at a later date.

Inaugural Exercises of the French University of Strasbourg.—A most imposing ceremony, historical pageant and general tribute ushered in the opening exercises of the University of Strasbourg under French rule November 21. The president of the republic and the three marshals of France took part in the festivities, as also delegates from many other universities in France and abroad. The dean of the university is Professor Weiss of the chair of biology. Other well known names on the medical faculty are Ambard (physiology), Duverger (ophthalmology), Forster (obstetrics), Masson (pathologic anatomy), L. Blum and Bard (clinical medicine), Chavigny (forensic medicine), Nicloux (biologic chemistry), Stolz and Sencert (surgery), and Pautrier (skin and venereal diseases). The French Académie de Médecine was represented by Professors Delorme, Netter and Schwartz.

LATIN AMERICA

No Examination Required for Uruguayans with Foreign Degrees.—The *Analcs de la Facultad de Medicina* gives the text of the law recently enacted which abrogates the requirements hitherto prevailing in regard to reexamination on returning to practice in Uruguay after obtaining degrees in foreign countries from institutions that grade to correspond with the Uruguayan faculties.

Deaths in the Profession.—Dr. J. Lemos, a prominent bacteriologist and clinician of Mendoza, Argentina, chief of the local Asistencia Publica and of the Pasteur Institute. His antiserums and vaccines have been widely used.—Dr. L. J. Velarde, the veteran of the Argentine naval medical service in which he occupied various high posts, displaying great initiative and executive ability.—Dr. A. J. Drago, medical expert for the courts in Argentina and director in the Obras Sanitarias of the nation, aged 58.—Dr. Luis Manzone, a physician of San Isidro, Argentina, succumbed to pneumonia, November 3, aged about 60.—Dr. F. de Paula Valladares, professor of clinical surgery in the University of Rio de Janeiro, and head of a private surgical clinic, aged 67.—Dr. Ernesto Samit of Santiago, Chile, succumbed to typhus while combating the recent epidemic there. The obituary notices of him mention also the deaths in the prevailing epidemic of three other young physicians, two medical students, nine trained nurses and numbers of the personnel of the different hospitals.

Sexual Enlightenment.—The *Semana Médica* states that great interest has been aroused in the work of the Federación Abolicionista Internacional by the Argentine-Uruguay committee. This committee is organizing an extensive conference at Montevideo to discuss sexual hygiene and venereal prophylaxis. Dr. R. E. Baethgen will open the discussion on sexual enlightenment of the young; addresses will be given also by Dr. Paulina Luisi, secretary-general of the Argentine-Uruguay committee and school medical inspector, and by Sr. J. A. Seniliosa. The closing address will be by Dr. José Brito Foresti, president of the committee, professor of syphilography at the University of Montevideo.

Uruguay Remits Import Duties on Drugs for Treatment of Syphilis.—The *Bolctín del Consejo Nacional de Higiene*, published at Montevideo, gives the discussion in the senate and the text of the law signed by the president, October 1, which remits all duties on the importation of the specific products which the Consejo Nacional de Higiene regards as efficacious in combating syphilis. The Asistencia Pública Nacional is authorized by the law to purchase the necessary quantity of drugs and to sell them at cost price to physicians and pharmacists on demand. Reserve supplies of not less than 10,000 doses are also to be kept on hand. The Consejo Nacional de Higiene is to fix the price for sale to the public; this price must not be more than 10 per cent. above the cost price.

The Conference on Tuberculosis at Rosario, Argentina.—A large gathering of persons especially interested in the campaign against tuberculosis was held recently at Rosario, and the important resolutions adopted are reproduced in a number of our South American exchanges and have been sent to us by the secretary general. A general outline for the whole work was drawn up, advocating a preventorium for each 100,000 inhabitants at least, with simple inexpensive sanatoriums for the curable tuberculous; enforcement of hygiene for foods, vehicles, etc.; better housing facilities, with penalties for owners of insanitary dwellings; enlightenment of the public, and the compulsory declaration of tuberculosis. The conference suggested that part of the income from the lottery be devoted to the prophylaxis of tuberculosis. One resolution urged that a commission of experts should be appointed to have exclusive charge of the whole system of antituberculosis prophylaxis and coordinate all efforts, with ample means at its disposal. Larroque's proposal for insurance against tuberculosis was adopted also, the expense to be borne by both workingman and employer, and special preventorium to be organized by the insurance societies. Another resolution urged that the state should interfere to enable workingmen to buy materials cheaply for home building. Other resolutions voted that vacation or colony schools should form an integral part of the public school system; that a premarriage certificate of freedom from serious disease should be enforced; that illiterate, new recruits should be taught to read, and that the army and navy should inaugurate a section for anthropometry. Other resolutions specified various desirable hygienic regulations.

Government Services

Appointment to Relief Commission

Walter P. Davenport, Major, M. C., U. S. Army, on duty with the American Committee for Relief of the Far East, Caucasus Branch, Tiflis, has been appointed medical advisor to the Interallied High Commissioner for the Caucasus. The commission is doing food and medical relief work in Armenia, Georgia and Azerbaijan.

Hospital Discontinued

Army General Hospital No. 7, Roland Park, Md., has been discontinued as a separate institution and will be maintained and administered as an annex from Subdivision of General Hospital No. 2, Fort McHenry, Md. The federal educational board and American Red Cross will maintain General Hospital No. 7 as a reconstruction school for disabled soldiers.

Army Medical Estimates

In the estimates submitted by the Army and Navy for the fiscal year ending June 30, 1921, about \$6,800,000 is asked for the medical department of the Army, including an outlay of \$500,000 for commencement of the structure of the army medical center at Walter Reed General Hospital, Takoma Park.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

ALABAMA

Birmingham—Hamilton, G. C. (C.)
Center—Tatum, W. B. (C.)
Henagar—Mason, C. D. (C.)
Springville—Hagood, E. C. (L.)
Talladega—Dixon, D. P. (C.)

CALIFORNIA

Bishop—Doyle, G. P. (C.)
Long Beach—Ross, R. L. (L.)
Los Angeles—Bennett, W. H. (C.)
Blanchard—W. O. (M.)
Seager, H. W. (M.)
Pasadena—Riggin, L. L. (L. C.)
San Bernardino—Owen, C. C. (L.)
San Francisco—Harrington, J. G. (C.)
Stockton—Schermerhorn, L. J. (C.)

CONNECTICUT

New Britain—Faulkner, J. F. (L.)

DISTRICT OF COLUMBIA

Washington—Manning, W. J. (C.)
Sampson, D. G. (C.)

FLORIDA

Jacksonville—Black, H. O. (M.)
Miami—Skaggs, P. T. (L.)

GEORGIA

Chickamauga—Chase, C. L. (L. C.)

IDAHO

Twin Falls—Leigh, C. A. (L.)

ILLINOIS

Aurora—Berkheiser, E. J. (C.)
Chicago—Marcus, S. M. (C.)
Teixler, A. M. (C.)
Van Alyea, O. E. (C.)
Oak Forest—Morris, E. (C.)
Springfield—Beilin, L. M. (L.)

INDIANA

Evansville—Dyer, W. C. (M.)
Indianapolis—Martin, J. A. (M.)
Logansport—Holt, E. K. (L.)

IOWA

Cedar Rapids—Conn, H. R. (C.)
Iowa City—Secoy, H. R. (L.)
Laurens—Nilsson, F. C. (C.)

KANSAS

Morrill—Rushton, J. S. (L.)
Morrowville—Horn, M. H. (L.)
Pittsburg—Nichols, W. J. (C.)
Topeka—Miller, N. D. (L.)

KENTUCKY

Kevil—Aubrey, G. E. (C.)
Louisville—Choate, B. D. (M.)

MARYLAND

Baltimore—Davis, P. L. (C.)
Glenarm—Reier, A. W. (L.)

MASSACHUSETTS

Fort Revere—Pascoe, J. B. (M.)
Fort Rodman—Lowe, T. S. (M.)
Lowell—Johnson, J. B. A. (C.)
Medford—Burrell, H. C. (C.)
North Adams—Curran, A. M. (C.)
Worcester—Deering, G. E. (C.)

MICHIGAN

Franklin—German, F. D. (L.)
Gay—Schmidt, A. W. (L.)

MINNESOTA

Eveleth—Saari, J. A. (C.)
Minneapolis—Darling, W. H. (M.)
Red Wing—Bjerken, F. N. (C.)
Rochester—Ott, W. O. (L.)

MISSISSIPPI

Electric Mills—Champenois, C. (C.)

MISSOURI

Kansas City—Cohen, F. (C.)
Stewart, E. L. (M.)
St. Joseph—Underwood, M. L. (C.)
St. Louis—Altheide, C. H. (C.)
Esselbruegge, F. C. (C.)
Hagler, F. (C.)
Wachenfeld, C. H. (L.)

MONTANA

Bew—Davis, G. H. (L.)

NEVADA

Tonopah—Masterson, J. R. (L.)

NEW HAMPSHIRE

East Andover—Durgin, E. C. (C.)
Manchester—Stickney, H. L. (M.)

NEW JERSEY

Leesburg—Spence, G. S. (L.)

NEW YORK

Brooklyn—Pilzer, H. L. (C.)
Pudney, W. K. (C.)
Reynolds, J. H. (L.)
Camillus—Shaw, G. H. (M.)
Fonda—Glenn, G. M. (L.)
New York—Boyd, L. F. (C.)
Donnelly, J. E. (L. C.)
Fitzgerald, J. J. (L.)
Gardner, F. E. (C.)
Harris, H. C. (L.)
O'Neill, J. C. (L.)
Steele, P. A. (L.)
Zuckerman, S. (L.)

Poughkeepsie—Tighe, L. R. (C.)
Schenectady—Overton, D. W. (C.)
Stottville—West, J. (L.)
Troy—Curtis, S. II. (L.)
Valatie—Dimock, A. R. (C.)
Willard—Rexford, H. I. (L.)

NORTH CAROLINA

Davidson—MacConnell, J. W. (L. C.)

OHIO

Akron—Drury, R. F. (C.)
Rambo, E. F. (L.)
Cincinnati—Dunham, H. K. (M.)
Sauer, F. J. (L.)
Dayton—George, J. C. (M.)
Salem—John H. J. (C.)
Winchester—Fenton, W. W. (C.)

OKLAHOMA

Broken Bow—McDonald, C. R. (C.)

OREGON

Duffer—Griffith, T. E. (C.)
Junction City—Love, D. P. (L.)
Portland—Wellington, R. H. (C.)

PENNSYLVANIA

Bowmansville—Henderson, R. J. (M.)
Chambersburg—Gans, C. C. (C.)
Philadelphia—Gibbon, J. H. (Col.)
Koenig, C. F. (L.)
Tamaqua—Speer, O. K. (C.)
Washington—Ramsey, G. W. (L.)
Waynesburg—Orndoff, H. E. (C.)

SOUTH CAROLINA

Charleston—Guess, J. D. (L.)

TENNESSEE

Columbia—Pillow, R., Jr. (C.)
Memphis—Granbery, R. (C.)

TEXAS

Commerce—Hyder, C. (C.)
Fort Worth—Powell, E. V. (C.)
Itasca—Robison, D. K. (C.)
Killeen—Ellis, J. W. (L.)
Palacios—Elliott, J. R. (L.)
San Antonio—Harris, W. T. (C.)
Whitesboro—Acton, G. P. (C.)

VERMONT

Pittsford—Hagan, T. J. (M.)
Shelburne—White, W. J. (C.)

VIRGINIA

Hopewell—Evans, R. J., Jr. (C.)
Lynchburg—Deekens, A. H. (L.)
New Castle—Caldwell, B. R. (C.)
Warrenton—Spilman, R. S. (M.)

WASHINGTON

Seattle—Calhoun, A. P. (M.)
Henderson, J. M. (M.)
Wood, C. B. (M.)
Tacoma—Janes, E. W. (C.)
Steele, J. F. (L.)
Turner, J. R., Jr. (L.)

WEST VIRGINIA

Huntington—Dickerson, W. M. (C.)

WISCONSIN

Cambria—Prees, R. L. (L.)
Walworth—Crowe, N. F. (C.)

WYOMING

Gebo—Williams, D. A. (C.)

Foreign Correspondence

LONDON

Dec. 10, 1919.

The Prevention of Venereal Diseases

The National Council for Combating Venereal Diseases has issued a memorandum stating that the prevention of venereal diseases is a large sociomedical problem. In the direct line of attack, ample facilities for treatment and instruction of the public—both social and hygienic—occupy the first place. Concerning the question of personal disinfection after risk is taken, it is no part of the council's policy to conceal the truth, and it has always acknowledged the value of cleansing and disinfecting material, applied early and thoroughly, in diminishing risk. But abstention from exposure is the only certain safeguard. Continence is to be encouraged by every means and on every ground both social and hygienic. As no person who has indulged in promiscuous intercourse can be sure that he is not infected, he is bound in duty to himself and to society to seek means of cleansing at the earliest moment. For this purpose a thorough local application of soap and water is of the greatest value, followed (if possible) by the use of such disinfectants as may be recommended by a physician. While such applications, if properly used, do sensibly reduce the risk of disease, if applied within four hours of exposure, they afford no certain security. They do not in the slightest degree prevent the contraction of syphilis in other parts of the body (as the lips, face or hands) than those disinfected. Satisfactory self-disinfection of women is practically impossible, and skilled medical attention at the earliest possible moment is absolutely necessary. No one should be urged to arm himself in advance with a prophylactic packet.

This advice differs little from that of another organization, formed with the same object though differing somewhat in policy, the Society for the Prevention of Venereal Diseases, which has already been mentioned. This society (which consists mainly of leaders of the profession—Osler, Mott, Arbuthnot Lane, Rolleston and others) is inviting the public to become members at an annual subscription of \$5. All who are interested are asked, whether they become members or not, to send a stamped and addressed envelop, whereupon a leaflet giving the necessary instructions will be sent.

Report of Medical Officers of Board of Education

The annual report of the chief medical officer of the board of education, Sir George Newman, just published, is an important document in which future policy is outlined. In a section on "The Beginnings of Disease," Sir George says:

that we are profoundly ignorant of this subject, but the school medical service gives an opportunity for examining "the nation in its childhood" and studying the earliest symptoms of disease, the importance of which has been so much insisted on by Sir James Mackenzie. A scheme for investigation of symptoms on a national scale is sketched. Beginning with the antenatal clinic, which the board of education supports in some measure, the work is to be continued through the school for mothers, the infant clinic, the day nursery and the nursery school to the secondary school and finally into the sphere of industrial employment. The observations are to be continuous and handed on from place to place with the child. Coincident with this work, efforts will be made to improve the health and physique of the child "other than by medical treatment. Playgrounds and playing fields, physical culture and games are to be provided and their effects noted.

As to the present condition of schoolchildren: In 1917 the death rate per thousand living was 94 for children under 1 year of age, 29 between the ages of 1 and 2 years, 13 for children aged 2 to 3, 8 for children aged 3 to 4, and 6 for children aged 4 to 5. One of the chief defects noted in "entrants" is malnutrition, expressed either as lack of growth or as rickets and dental defects. From 2 to 3 per cent. of entrants show a serious degree of rickets. Many districts have 60 per cent. of dental caries. Next in importance come infective diseases—measles, whooping cough, tuberculosis and rheumatism. From 50 to 60 per cent. of the entrants have suffered from measles, which leave behind ailments which cause prolonged or permanent disablement. Finally there are catarrhal conditions, which undermine the health and physique of the child and predispose to and create a nidus for various forms of permanent disease. It is these beginnings that must be attacked first by discovery and then by treatment. Both the normal and the abnormal child must be studied. "Why is this child normal? Has it had measles, diphtheria, rickets, tuberculosis or rheumatism? If not, why not? If so, how has it overcome these maladies and escaped their sequelae? The answer is of the first importance to the child, to other children, to science, and to the national well-being."

The number of children in average attendance at school during 1917-1918 was 5,194,493. The number medically inspected during the year ending December 31 was 1,317,657. Compared with 1917 there was a great improvement in cleanliness, but the condition of the teeth was not so good. There are now 465 special schools for defective children accommodating 34,478. Defectives are estimated as follows: cripples, 4,500; mentally defective, 30,800; deaf and dumb, 5,500; blind, 4,250. Thus accommodation has not been provided for more than half of the defective.

Australasian Medical Congress for Queensland

The Australian federal authorities have announced that after an interval of six years, the Australasian Medical Congress will meet in Brisbane in August, 1920. At the 1911 congress, held in Sydney, it was decided to recommend the federal government to increase the funds for an Australian institute of tropical medicine, so as to enable an organized inquiry to be made into matters relevant to the permanent settlement of tropical Australia by the white race. The federal government, when approached, made a permanent subsidy for this purpose, with the result that much good work has been done. At the congress next year the principal item for discussion will be the white settlement of tropical Australia. Other matters for consideration are the doctors and lodges' dispute, the control of venereal disease, military surgery, and hygiene, in the light of war experience, and the adjustment of health administration as between the commonwealth and the states. All the states and New Zealand will be represented at the congress.

Sir Auckland Geddes' Criticism of the Medical Profession

Sir Auckland Geddes, president of the board of trade, who, it may be remembered, is a qualified physician and was professor of anatomy in McGill University, in an address to the students of Charing Cross Hospital on the occasion of the annual presentation of prizes, delivered some severe criticisms of the profession. It was extraordinarily unequal not only in its technical knowledge but also in its public spirit. The glorious record of the profession in the war was won by a minority. A large number were now appearing in the glory who had done nothing to help. He had fought at a good many medical schools and therefore knew how limited was the outlook of the profession. What was lacking for medical education in some schools was really

only technical instruction with very little education about it. Men from schools where that type of mind predominated failed to rise to the occasion when the time came. All, whether teachers or students, should get clearly into their minds the difference between technical instruction in the medical schools and the educational side. Because of the state of the educational side for twenty years before the war, we witnessed some of the deplorable exhibitions during the war. There were three great emotions in every human being—the appreciation of beauty, the desire to serve one's generation, and the desire to know the truth. It was in relation to these three great emotions that the medical school was lax. On those sides they saw most in national service (Sir Auckland Geddes was minister of national service in the war), and they had found in the medical service a less satisfactory development than in some others.

As might be expected, this criticism has proved unpalatable to the profession. In a press interview published in the *Daily Chronicle* Dr. Cox, medical secretary of the British Medical Association, said that Sir Auckland Geddes' statement was in conflict with the opinion of men in as good a position to judge the work of medical service. "The medical service has been consistently praised and its work compared with that of other branches of the army." Physicians won 5,227 war decorations. Of these ten were V. C.'s (the most coveted decoration in the British army). More than 11,000 civilian physicians were passed into military service. Dr. Cox shared Sir Auckland's dissatisfaction with medical education, but his remarks did not apply only to it. All education was inferior to what it ought to be.

British Science in the War

At the anniversary dinner of the Royal Society, the president, Sir Joseph J. Thompson, O.M., in replying to the toast of the society, said that there was no country, excepting France, in which men of science threw themselves with such ardor as in this country into making researches which would benefit our troops at the front—certainly not Germany. One remarkable fact that stood out in this war was that every branch of science had its application in the service and defense of this country and was superior to that of our enemies. There had been nothing more conspicuous in the war than the triumph of medicine. They had made up leeway in the war, but it took them five years of suffering and sorrow and loss. That period would have been shortened if the nation before the war had been alive to the part which science must play in any war and had provided departments in which the development of the science of war could have been worked out under more favorable conditions. If they had had such departments, many requirements would have been anticipated.

PARIS

Nov. 27, 1919.

Death of Prof. Raphaël Lépine

French medical circles have suffered a great loss in the person of Professor Lépine, who died at Menton, November 17, in his eightieth year. Raphaël Lépine was born at Lyons in 1840, where he pursued his classical studies. His medical studies were also begun here. After having been intern at the Hôpitaux de Lyon for four years, he came to Paris, where he secured an internship in the Hôpitaux de Paris in 1865. Here he became a pupil of Charcot. In 1867 he studied in Berlin and later (1869) in Leipzig in the laboratory of Ludwig, where he made the interesting discovery of the vasomotor nerves of the tongue. On his return from Germany he entered the service of Brown-Séquard. In 1872 he became clinical chief, and in 1874 physician to the Hôpitaux de Paris. The following year he was appointed agrégé professor on the Paris Faculty of Medicine. Two years later (1877) he secured the chair of clinical medicine at the Lyons Faculty of Medicine. In 1888 Lépine was chosen correspondent of the Academy of Medicine, and in 1896 he was elected *associé national*. He was likewise correspondent of the Academy of Science. Dating from his stay in Paris he had been vice president of the Société de biologie. In 1905 he was chairman of the Congrès français de médecine. He was repeatedly chosen delegate of the French government at the Congrès internationaux de médecine.

Being at once clinician and physiologist, Professor Lépine constantly pursued parallel clinical and experimental researches. He published numerous works on diabetes, its complications and treatment; on kidney diseases, etc. He was an active collaborator of the *Semaine médicale*, in which

he published many valuable essays on therapeutics, among others, one entitled, "Doit-on traiter la fièvre?" which constituted his report on this subject to the therapeutic section of the thirteenth Congrès international des sciences médicales, held in Paris in 1900.

In collaboration with Bouchard, Charcot and Vulpian, Lépine founded the *Revue mensuelle de médecine et de chirurgie* (1877), which in 1880 was segregated as the *Revue de médecine* and the *Revue de chirurgie*. Lépine remained one of the directors of the *Revue de médecine* up to the time of his death.

Lépine's hospital service and scientific researches did not absorb all his time and attention. He was far from indifferent to the great social problems of his day. He was president of the Lyons chapter of the Ligue des droits de l'homme from its foundation in 1898 until 1903.

Strasbourg University Festival

The reopening of the University of Strasbourg was recently celebrated with great enthusiasm. The president of the republic delivered an important address, in which he alluded to Pasteur, who, at the height of his fame, spoke feelingly of the course in chemistry that he took at the Ecole de pharmacie de Strasbourg and at the Faculté des sciences during the years 1848-1852. The president expressed his approval of the idea of forming a Société des amis de l'Université de Strasbourg, analogous to the Société des amis de l'Université de Paris. The object of such a society will be to aid in the establishment of professorial chairs, a wide range of courses and lectures, and in the more extended equipment of the laboratories and libraries. It is also hoped to found certain prizes to encourage study in certain fields, and to establish scholarships and traveling fellowships.

Concurrently with the celebration of the reopening of the university, the eighth Congrès des étudiants was held in Strasbourg, at which the chief topic of discussion was the devising of ways and means to bring about a betterment in the moral and physical life of students. American, Belgian, Dutch, English, Italian, Norwegian, Polish, Swiss and Czechoslovak delegations were present at the congress.

Personal

Dr. Cunéo, agrégé, has been appointed professor of medico-surgical anatomy on the Paris Faculty of Medicine.

Dr. Pinard, formerly professor of clinical obstetrics on the Paris Faculty of Medicine, who was a candidate at the parliamentary elections, as I mentioned in my letter last week, has been elected a member of the chamber of deputies.

Marriages

HARRY EVANS TRIMBLE, Asst. Surg., U. S. P. H. S., to Miss Agnes Evelyn Malley of St. Paul, at Washington, D. C., December 18.

CHARLES THOMAS MAXWELL, Sioux City, Iowa, to Miss Nelontine Jane Alderson of Russellville, Ky., November 22.

CHARLES HAMILTON HARBAUGH, Philadelphia, to Miss Minnie Anna Moore Hall of Hayfield, Va., December 11.

WILLIAM OSCAR OTT, Rochester, Minn., to Miss Maggie Jane Smith of Lexie, Miss., December 7.

STANLEY ERNEST CRAWFORD, Pittsburgh, to Miss Caledonia Stroud of Franklin, Va., December 6.

LIONEL FRANCIS LORIO, Lakeland, La., to Miss Marie L. Green of Lottie, La., December 4.

FOWLER BURDETTE ROBERTS, Akron, Ohio, to Miss Marie dePaul of Chicago, November 1.

JAY DEVER LINTON to Dr. Nellie Cameron Craig, both of Philadelphia, December 20.

HARRY AUGUST NAUMER to Miss Anna Alvira Risch, both of Brooklyn, December 13.

FRANCIS WELD PEABODY, Boston, to Miss Virginia Chandler of Chicago, December 18.

HYMAN GREEN, Boston, to Miss Leona Freedman of Brookline, Mass., November 11.

JOHN CHARLES MAHR to Mrs. Ollie Dunn, both of Oklahoma City, December 11.

ALBERT JACOB MISHKIND, Denver, to Miss Mollie Ettelson of Chicago, December 17.

Deaths

Sir William Osler, Regius professor of medicine in the University of Oxford, England, whose seventieth birthday was chronicled in THE JOURNAL of July 12, 1919, died at his home in Norham Gardens, Oxford, December 29, from pneumonia.

Dr. Osler was born in Tecumseh, Ont., the son of Rev. F. L. and Ellen Frere Osler. He received his preliminary education in Trinity College School, Trinity College, Toronto, and the Toronto University, and took his medical course in McGill University, Montreal, from which he was graduated in 1872. His graduation thesis on topics in pathologic anatomy was awarded a special prize, "because it was greatly distinguished for originality and research."

On his return after two years of study abroad Dr. Osler began to teach pathology in his alma mater. He was made professor of the institutes of medicine of McGill University in 1874, and remained in this position until 1884, when he accepted the professorship of clinical medicine in the University of Pennsylvania, Philadelphia. In 1889 he became professor of principles and practice of medicine in Johns Hopkins University, Baltimore, leaving this position in 1905 to become regius professor of medicine at Oxford.

In 1911 he was created a baronet of the United Kingdom, by King George V. He was deservedly honored by many universities and scientific bodies. He received the honorary degree of LL.D. from McGill University in 1895, the universities of Aberdeen and Edinburgh, in 1898; University of Toronto, 1899; Yale University, 1901; Harvard University, 1904, and Johns Hopkins, 1905; the degree of Doctor of Civil Law from Trinity University, Toronto, in 1902, and the University of Durham in 1913; the degree of Doctor of Science, from Oxford University in 1904, Liverpool University in 1910, and the University of Dublin in 1912. He was made a fellow of the Royal College of Physicians in 1883, and a fellow of the Royal Society in 1898.

Dr. Osler was an accepted authority in medical science, and as a teacher he aroused affection and enthusiasm in his students. The model medical clinic which he organized at Johns Hopkins was the first of its kind in this country, and in this clinic were trained many medical students and young physicians for higher work in clinical medicine, inspired by Dr. Osler's example and precepts. His literary work was of a high degree of literary and scientific merit, and was always inspired by lofty ideals. His literary works comprise 730 titles, chief among which were his Principles and Practice of Medicine, which appeared in 1892, and the encyclopedic Modern Medicine, of which he was coeditor.

Dr. Osler was taken ill with pneumonia in November, and later was reported to be convalescing; but pleurisy with effusion developed, necessitating a thoracentesis. On Christmas day he sent a typically cheerful telegram to Johns Hopkins Hospital, announcing that he was making a good fight; three days later he died. He is survived by his wife; his only son died while on active service in the war.

Thomas Terrell Jackson ⊕ San Antonio, Texas; University of Texas, Galveston, 1893; aged 51; president-elect of the State Medical Association of Texas; division surgeon of the Southern Pacific System; formerly president of the Bexar County Medical Society and Western Texas Medical Association; formerly secretary of the State Board of Medical Examiners, and a member of the State Board of Health; formerly president of the board of directors of the Southwestern Insane Hospital, San Antonio; a member of the San Antonio Board of Health, and health officer of Bexar County; captain and assistant surgeon, United States Volunteers, during the War with Spain; and major, M. C., U. S. Army, during the world war, and honorably discharged, Dec. 4, 1918; died December 12, from heart disease.

Charles Henry Cook ⊕ Natick, Mass.; Bellevue Hospital Medical College, 1875; aged 74; a trustee of the Leonard Morse Hospital, Natick, since its organization in 1893; a member of the Massachusetts Board of Registration since 1909, and first president of the Federation of State Medical Boards of the United States, serving from 1913 to 1916; died December 3, from cerebral hemorrhage.

Daniel Eli Haag, Liberty Center, Ohio; Cincinnati College of Medicine and Surgery, 1880; aged 84; for many years professor of materia medica and therapeutics and dean of the faculty of the Toledo Medical College, and president of

⊕ Indicates "Fellow" of the American Medical Association.

board of trustees of Robinwood Hospital, Toledo; president of the Liberty State Savings Bank; died December 9, from heart disease.

Paul Gillespie ♂ Wyoming, Ohio; Miami Medical College, Cincinnati, 1897; aged 48; local surgeon of the Cincinnati, Hamilton and Dayton Railroad; while driving his automobile over a grade crossing at Hartwell, December 15, was struck by a Baltimore and Ohio train, and sustained injuries from which he died a few hours later in Christ Hospital, Cincinnati.

Alexander James Connell ♂ Scranton, Pa.; Bellevue Hospital Medical College, 1877; aged 63; attending surgeon to Moses Taylor Hospital, Scranton, since 1889; surgeon and chief of staff and a member of the board of trustees of State Hospital of the Northern Anthracite Coal Region, Pennsylvania, Scranton; died December 18.

Clarence W. Schaeffer ♂ Philadelphia; Medico-Chirurgical College of Philadelphia, 1907; aged 34; diagnostician for the board of health for diphtheria and scarlet fever, and a member of the staff of the Lankenau, Episcopal, and Pennsylvania hospitals; died, December 19, from heart disease.

William McCarroll ♂ Pontiac, Mich.; University of Michigan, Ann Arbor, 1881; aged 65; one of the organizers of the Oakland County Medical Society, and its president in 1906; one of the organizers and secretary of the Pontiac Medical Society in 1901; died December 12, from pernicious anemia.

Benjamin F. Gardner, Bloomsburg, Pa.; Medical College of Virginia, Richmond, 1865; aged 66; a member of the Medical Society of the State of Pennsylvania; a surgeon in the Confederate service during the Civil War; died at the home of his daughter, December 5, from senile debility.

Percy C. Hoskins ♂ West Chester, Pa.; Jefferson Medical College, 1875; aged 66; once president of the Chester County Medical Society; a member of the staff of the Chester County Hospital and physician to the With Memorial Home; died in Chester County Hospital, December 13.

Paul Ruhnke Lanz ♂ Oakland, Calif.; University of California, Berkeley, and San Francisco, 1899; aged 44; who was awaiting trial on the charge of giving names to prescriptions of narcotics; was found dead at the Hotel Herrick, San Francisco, December 8.

William Bayles VanDuyn, Trenton, N. J.; University of City of New York, 1866; aged 79; a veteran of the Civil War, and later surgeon, U. S. Army, from which he resigned in 1880; surgeon for the police and fire department of Trenton in 1888; died December 6.

James Van Siclen Woolley, New York City; University of City of New York, 1868; aged 76; attending surgeon to Northeastern Dispensary, New York City, since 1870, a visiting physician to the Presbyterian Hospital since 1875; died December 14.

Armond Willis Murphy, Vancouver, B. C.; Queens University, Kingston, Ont., 1909; aged 38; while driving in his automobile over a grade crossing near Beaconsfield Station, December 6, was struck by an electric railway freight train and instantly killed.

Erastus Van Hood ♂ Ocala, Fla.; College of Physicians and Surgeons, Baltimore, 1884; aged 58; a medical officer during the Spanish-American War; for several years a member of the State Board of Medical Examiners; died December 5.

Elvin H. Turner ♂ Ticonderoga, N. Y.; Albany (N. Y.) Medical College, 1873; aged 57; once president of the village of Ticonderoga; died in Moses Hospital, Ticonderoga, December 12, after two operations for carbuncle.

Giuseppe Dalla-Chiara, New York City; University of Turin, Italy, 1892; aged 53; died in Presbyterian Hospital, New York City, December 15, from carcinoma of the lungs and bronchial tubes.

Florence Nightingale Ferguson Ward, San Francisco; Hahnemann Medical College of the Pacific, San Francisco, 1887; professor of obstetrics in her alma mater; aged 59; died December 15.

John Holloway Pratt ♂ St. Stephens, S. C.; Medical College of the State of South Carolina, Charleston, 1909; aged 44; was shot and killed in an affray near St. Stephens, December 14.

Francis Marion Elliott, Aurora, Ill.; Rush Medical College, 1869; aged 75; a member of the staff of the Aurora City Hospital and St. Charles Hospital, Aurora; died December 9.

John Louis Metzger, Jr., Philadelphia; Hahnemann Medical College, Philadelphia, 1912; aged 29; died in the Hahnemann Hospital, Philadelphia, December 9, from heart disease.

Millard F. Gerrish ♂ Seymour, Ind.; University of Pennsylvania, Philadelphia, 1881; aged 63; secretary of the Seymour board of health; died December 16, from heart disease.

Richard C. Mackey, Hobart, Ind.; Loyola University, Chicago, 1883; aged 57; a member of the Indiana State Medical Association; died December 1, from cerebral hemorrhage.

Stephen D. Yerrington, Bailey, Mich.; Michigan College of Medicine and Surgery, Detroit, 1899; aged 73; died at Grant, Mich., November 27, from valvular heart disease.

John T. Townley ♂ Milwaukie, Ore.; University of Oregon, Portland, 1906; aged 50; for many years a practitioner of Portland; died December 9, from arteriosclerosis.

Van Buren Newman, Tilden, Ky.; Miami Medical College, Cincinnati, 1872; aged 80; died at his country home in Henderson County, December 7, from senile debility.

Samuel Augustus Wood, Elmhurst, L. I., N. Y.; College of Physicians and Surgeons in the City of New York, 1879; aged 64; died December 12, from heart disease.

John E. Haggerty, Jr., New York City; Electric Medical College of the City of New York, 1911; aged 43; died December 18, from pneumonia.

Henrietta Eason Holbrook, Lebanon, Ohio; University of Nashville, Tenn., 1899; aged 59; died in an infirmary in Mobile, Ala., December 6, from tuberculosis.

John Edgar Crawford, Ray, Ariz.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 39; died at the home of his brother in Crafton, Pa., December 14.

Francis R. Stone, Savannah, Ga.; Savannah, Ga., Medical College, 1860; aged 83; surgeon in the Confederate service during the Civil War; died December 9.

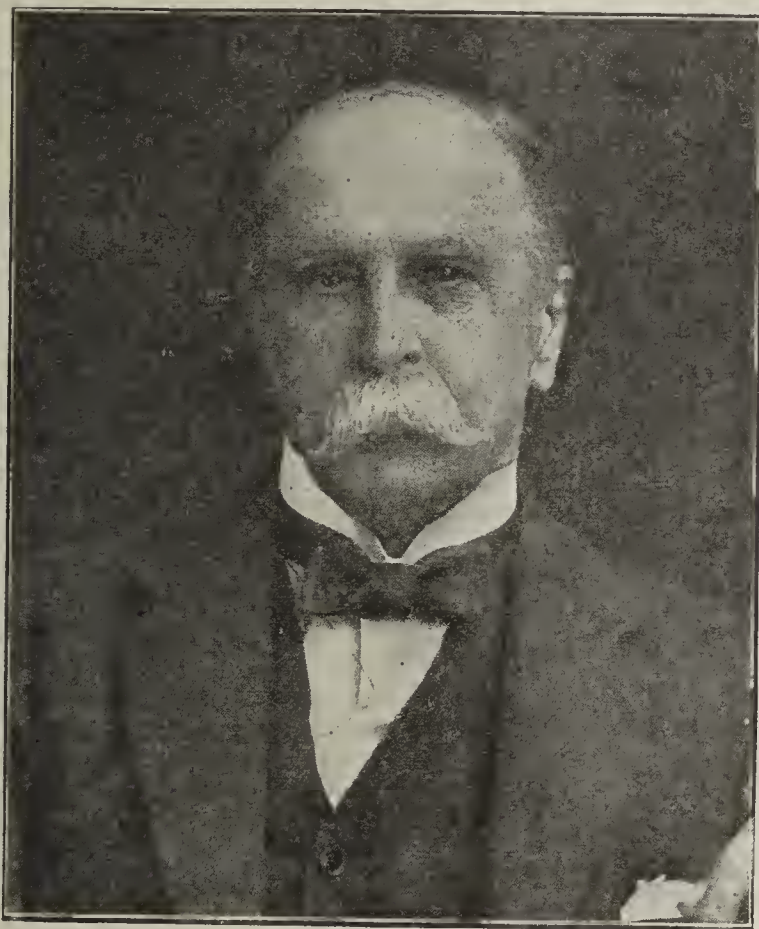
William Bruce Stricker ♂ Nanticoke, Pa.; Medico-Chirurgical College of Philadelphia, 1901; aged 42; died November 18, from pneumonia.

William P. Hanna, Lafayette, Ind.; Jefferson Medical College, 1877; aged 69; died in his apartment, December 13, from cerebral hemorrhage.

John Gray Blount ♂ Washington, N. C.; Bellevue Hospital Medical College, 1892; aged 49; died December 8, from cerebral hemorrhage.

Chester Jennings, Little Rock, Ark.; Tulane University, New Orleans, 1883; aged 61; died December 11, from bronchial pneumonia.

Charles H. Janney, Washington, D. C.; University of Maryland, Baltimore, 1885; aged 57; died December 4.



SIR WILLIAM OSLER, 1849-1919

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"ANTI-PNEUMOCOCCIC OIL" AND THE USE OF CAMPHOR IN PNEUMONIA

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Anti-Pneumococcic Oil" (a solution of camphor in oil sold by Eimer and Amend, New York) ineligible for New and Non-official Remedies because (1) the recommendations for its use in pneumonia are not warranted by the evidence, (2) the name is not descriptive of its composition but is therapeutically suggestive, and (3) the sale of a solution of camphor in oil under a name nondescriptive of its composition is unscientific and a hindrance to therapeutic progress.

W. A. PUCKNER, Secretary.

The Council having decided to consider Anti-Pneumococcic Oil (Eimer and Amend, New York), the preparation was assigned to the Committee on Therapeutics for report. The report that follows was made by a member of this committee:

According to the advertising, Anti-Pneumococcic Oil is a "twenty-five per cent. solution of camphor in a thin oil" which was "originated" by August Seibert, M. D. The following directions are given for its use:

"10 c.c. (150 minims) to every 100 pounds of body weight, to be injected hypodermically every eight to twelve hours in pneumococcic pneumonia, as soon after the initial chill as possible."

It is claimed that the prescribed dose one hour before general anesthesia begins, "safeguards against postoperative pneumonia," and, that "animals can so be immunized against later and otherwise fatal intravenous pneumococcic infection (Boehnke, Institute for Experimental Therapy, Frankfort)." The advice is given:

"In pneumococcic meningitis, endocarditis and pleuritis, 3% of salicylic acid should be added to this oil."

In an article by Seibert, "Camphor and Pneumococci" (*Medical Record*, April 20, 1912), a reprint of which is used to advertise Anti-Pneumococcic Oil, previous work (*München. med. Wchnschr.*, No 36, 1909) is mentioned as the starting point for the use of camphor in pneumonia. In this article, the author reports his first case, that of a young woman who entered St. Francis' Hospital on the third day after the initial chill "with the symptoms of severe toxemia (unconscious, temperature 105.5 F., pulse 130, and respiration 40) and involvement of both lower lobes." "Large doses of camphor," 12 c.c. of a 20 per cent. solution, were injected hypodermically "every twelve hours, resulting in gradual improvement and recovery by the fourth day, without a crisis." Seibert reports success in its use in twenty-one cases, but gives no case histories or protocols. He admits, however, that in four out of sixteen cases, following the first twenty-one so reported certain "limitations of this treatment were observed," and a "sudden rise of temperature in two patients on the second and third days of treatment, respectively, proved to be due to pneumococcic nephritis, promptly subdued by appropriate doses of urotropin, while the camphor injections were continued and resulting in speedy recovery." He further admits that empyema occurs, and states: "This proves that the camphor brought into the blood cannot prevent the as yet living organisms, constantly entering the blood current from the affected alveoli, from colonizing in the renal and pleural tissue."

He reports, among thirty-seven patients treated in this manner, one death, that of a man 68 years old, weighing 200 pounds, with a fatty heart. Heart failure was the real

cause of death. Seibert also reports some very incomplete experimental work; Dr. Hensel, assistant and pathologist of the German Hospital, found that "1/40,000 part of camphor added to the usual culture media inhibited the growth of pneumococci, while the controls all thrived"; Dr. J. C. Welch, pathologist of the Lying-In Hospital, found that rabbits infected with lethal doses of pneumococcus cultures intravenously were saved by large doses of camphorated oil; fragmentary protocols are given. The assistant pathologist of St. Francis' Hospital carried on the experimental work, adding salicylic acid to the camphor. No blood cultures are reported. The conclusion reached by Dr. Seibert is that salicylic acid up to 3 per cent., added to the camphorated oil, is effective in preventing pleural infection. In the article by Dr. Seibert, there appear most sketchy reports of cases, recovery being reported without crisis in from three to nine days.

The referee has made a careful search of the literature, with the following results: Boehnke (*Berl. klin. Wchnschr.* 50:818, 1913), using white mice, failed to confirm the experiments reported in Seibert's paper, unless camphorated oil were given before the pneumococci, and even then, he felt that the results were too irregular to be of great significance. When given with anti-pneumococcic serum, however, he felt that there was some benefit to be seen by the administration of camphor; his protocols, however, are not detailed. There is no report of blood cultures, etc.

Another worker, H. Leo (*Deutsch. med. Wchnschr.* 39:690, 1913), reported that camphor water given intravenously prolonged the lives of thirty-eight rabbits inoculated with pneumococci. Here again there were no adequate protocols and very little evidence of careful experimental work appears.

In the literature of the past ten years, there appear sketchy clinical articles on the value of huge doses of camphor in pneumonia. Markevitch (*Russk. Vrach*, June 27, 1914; abstr., *THE JOURNAL*, Dec. 5, 1914, p. 2081) treated 226 cases of pneumonia with 5 c.c. of camphorated oil hypodermically four times daily, at the same time giving digitalis (amount not stated), with a mortality of 6.6 per cent., whereas, in 322 cases untreated, there was a mortality of 13.3 per cent. He reports 133 grave cases; sixty-six received no camphor; 48 per cent. died. Of sixty-seven treated with camphor, only 22 per cent. died. He reports temperature falling by lysis when camphor is used, and comments on the symptomatic improvement following its use. With the great variation in the clinical course of pneumonia, the above figures, though suggestive, certainly need further support before the routine use of camphor as recommended by Seibert can be sanctioned.

Later articles found on the subject refer to it in a very cursory way, giving no protocols and no cases, and giving the referee the feeling that the conclusions were very impressionistic.

RÉSUMÉ

After careful search of the literature, the referee concludes that: Huge doses of camphor, to 250 grains in twenty-four hours, may be given to man without serious results. No satisfactory evidence, however, appears that camphor has a specific germicidal action on pneumococci (similar to that of ethylhydrocuprein). The clinical evidence, as found in the literature, is certainly of very little value. It appears that the sale of a simple solution of camphor in oil under the guise of "Anti-Pneumococcic Oil" is to be deplored (a 20 per cent. solution of camphor in cottonseed oil is official in the U. S. Pharmacopeia as camphor liniment). It is recommended that the preparation be held inadmissible to New and Nonofficial Remedies because exaggerated therapeutic claims are advanced for it, and because the name is not descriptive of the composition, but is, instead, therapeutically suggestive.

Health First Means Safety First.—Eyestrain is a cause of headache and general bodily fatigue which could be eliminated with but little expense or loss in time and with an obviously great reduction in the amount of accidents.—*Minnesota Health J.*, Nov. 20, 1919.

Correspondence

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—In an editorial comment (THE JOURNAL, Dec. 6, 1919, p. 1774), based largely on certain clinical observations recorded by Hammett and McNeile, your conclusions appear to be that we must "hesitate to give the placenta a place in endocrinology." I heartily concur with the display of such a laudable spirit of conservatism in the new and untried field of endocrinology, in which the tendency has been to allow speculation to outrun discretion. However, neither in Hammett's articles (let me instance the one on the "Function of the Internal Secretion of the Placenta," *Endocrinology* 3: 307 [July-Sept.] 1919, which contains a summary of his work) nor in your comment has the evidence of the endocrine function of the placenta been favorably presented. The difficulties confronting research on this problem, because of the presence of ovaries and fetus, are numerous and baffling, and until recent years little progress had been made:

1. The earlier work of Veit and his successors who attempted by means of precipitin, complement fixation and similar tests to prove that eclampsia is due to an overwhelming of the maternal organism by foreign (placental) protein has been discredited, although the hypothesis has not been disproved.

2. The researches of Lane-Clayton and Starling and of others dealing with the growth of the breasts during pregnancy were performed with aqueous extracts of the placenta which contain none of the active principle, or mere traces of it. Moreover, these investigators were unaware of the cyclic changes occurring in the breasts during rut and were misled by these periodic changes, as Unger and I pointed out (*Arch. int. Med.* 7: 812 [June] 1911).

3. Not until extracts prepared by extracting placental material with lipid solvents had been used (Iscovesco: *Compt. rend. Soc. de biol.* 73: 104, 1912. Aschner: *Arch. f. Gynäk.* 9: 534, 1913. Herrmann: *Monatschr. f. Geburtsh. u. Gynäk.* 1:1, 1915. Frank and Rosenbloom: *Surg. Gynec. & Obst.* 1: 646 [Nov.] 1915) were the results positive or concordant. The positive results were due to the greatly increased concentration of the active substance which is present in minute quantity only in the fresh placenta.

4. The problem is still further complicated by the fact that the corpus luteum of the pregnant ovary contains an active principle which acts similarly on the breasts (and uterus) to the substance contained in the placenta. So far as studied, a close biologic identity exists between these two substances (Frank: *Surg. Gynec. & Obst.* 25: 329 [Sept.] 1917). For that reason, experiments dealing with breast hyperplasia must be conducted not only on virgin animals but also on animals castrated before their first rut (compare paragraph 2). As an additional precaution, at least one breast should be removed and kept for control before beginning the experiment.

5. A sharp distinction must be drawn between the physiologic growth of the glandular structures of the breast during pregnancy (hyperplasia) and the post partum secretory activity of the fully formed gland. This question was discussed by me as early as 1912 (*Arch. f. Gynäk.* 97: 183, 1912), as the distinction between substances causing breast hyperplasia and galactagogues was already frequently lost sight of. Hammett appears to have fallen into the same error. "In an experiment carried on at the Boston Lying-In Hospital during the winter of 1917-1918, it was impossible to detect by bedside observation [the italics are mine] an increased growth of mammary tissue when desiccated placenta was fed post partum to lactating women, as compared with a series of patients not receiving the placental material" (Hammett: *Endocrinology* 3: 307 [July-Sept.] 1919). Post partum, let it be understood, the mammary gland has reached its maximum development and is not amenable to further stimulation (the increasing refractoriness to stimulation, as the physiologic maximum is approached, has been mentioned

by me in the *Journal of Cancer Research*, Proceedings of the American Association for Cancer Research, 2: 515, 1917). Moreover, bedside observations do not lend themselves to delicate quantitative determinations. The question as to whether placental extracts exert a galactagogue action is quite distinct from the question of placental internal secretory activity. With Halban (*Arch. f. Gynäk.* 75: 353, 1905), I believe that the placenta inhibits milk secretion. The infinitesimally small amount of active substance contained in 10 grains of desiccated placenta, as given by Hammett, is far too small to produce such an effect, were it obtainable, particularly when introduced by mouth.

6. The report of Hammett that "it is evident that there is produced in the placenta some substance capable of acting as a stimulus to growth, when ingested by the mother and passed on to the infant in the lacteal secretion . . ." need not be dilated on in this connection. This is a question for pediatricians and food experts to settle from the clinical standpoint, but cannot be proved or disproved by means of infants observed under the varying and uncontrollable conditions existing in the best conducted maternity hospital; nor is an observation period of two weeks sufficient to permit the drawing of conclusions. To apply these observations to the fetus in utero is even more unjustified.

7. The evidence in favor of considering the placenta as a true gland of internal secretion may be thus indicated, in bare outline: By extraction of placental substance with lipid solvents, a viscid concentrate is obtained which is thermostabile and resists fairly concentrated acids and alkalis. When it is injected subcutaneously into virgin immature castrates (rabbits show the changes most conclusively, but guinea-pigs, white rats and female dogs also react positively), rapid hyperplasia of the uterus and breasts results. On withdrawal of the extract, both uterus and breasts (the latter mainly in their acinous structures) regress. Colostrum then appears in the breasts, if the stimulation has been carried to the proper degree of development, in from three to seven days after conclusion of the injections. (For a short outline, the reader may consult Frank: The Placenta Regarded as a Gland of Internal Secretion, *Surg. Gynec. & Obst.* 25: 329 [Sept.] 1917.)

8. As stated in the article just referred to, the possibility cannot be denied that the active substance originates in the corpus luteum of pregnancy, and is merely stored in the placenta. Against this hypothesis, the fact that only minute amounts occur in the placenta, and that when inaugurated, the changes continue in spite of castration, must be weighed.

No experiments have been performed to determine whether the placenta of animals castrated during pregnancy contains less of the active substance, nor would such experiments prove conclusive even if exact quantitative methods of extraction were at our disposal. Therefore, the origin of the active substance obtained from the placenta must at present be ascribed to this temporary but important gland.

ROBERT T. FRANK, M.D., New York.

"ACUTE ABDOMEN"

To the Editor:—In reply to Dr. M. W. Lyon, Jr., whose letter (THE JOURNAL, Dec. 20, 1919, p. 1897) takes issue with the designation "acute abdomen": The reference is to a report of remarks by Dr. Deaver. I wish to refer to the usage of the same terminology by Dr. Charles L. Gibson of New York, whom every Cornell student remembers as a purist in surgical nomenclature. Lymph glands exist for some surgeons, but only lymph nodes for Dr. Gibson. My own memories of the course in medicine at Cornell include none more vivid than Dr. Gibson's "Please do not say 'lymph glands' in my clinic!" Did a student mention carcinomas or sarcomas? He learned instantaneously that he meant carcinomata or sarcomata. Let a student, demonstrating on a patient, say to Dr. Gibson "And here is your adenitis," and the response would inevitably be "Not my adenitis!"

This is submitted as evidence that Dr. Gibson is untiring in his efforts to instil into his students a sense of accuracy in nomenclature. Therefore, when he begins his lectures in

surgery with "Acute abdominal disease—the so-called 'acute abdomen,'" it is my own feeling that "acute abdomen" has the endorsement of usage by a past master of terminology. Dr. Gibson's syllabus of lectures, open before me as I write, begins:

A. ACUTE ABDOMINAL DISEASE
"ACUTE ABDOMEN"

The quotation marks that indicate Dr. Gibson's attitude toward the term that he uses with this qualification were omitted from the report of Dr. Deaver's remarks referred to before. I cannot refer at the moment to any writing of Dr. Deaver's that will show whether he uses quotation marks as does Dr. Gibson. At all events, with or without quotation marks, "acute abdomen" gives the impression of a condition for which something should be done in a hurry; and I do not feel that it is advisable to adopt a longer terminology even as a concession to purity of diction.

RAMSAY SPILLMAN, M.D., Washington, D. C.

Dr. Spillman's letter was referred to Dr. Lyon who replies:

To the Editor:—Dr. Spillman's chief argument for the employment of "acute abdomen" seems to be that it has the sanction of Dr. Charles L. Gibson, an undoubted purist as shown by several examples. The fact that Dr. Gibson uses the term within quotation marks is an admission that the expression is irregular. I see no special objection to using it with quotation marks. Like "T. B. bugs," "beasts" as applied to protozoa, and "shots" of bacterins, such expressions as "acute abdomen, acute appendix, chronic appendix," etc., would be better confined to familiar conversations than be used in formal speech or publication.

The Century Dictionary defines acute as follows: "1. Sharp at the end; . . . 2. Sharp or penetrating in intellect; . . . 3. Manifesting intellectual keenness or penetration; . . . 4. Having nice or quick sensibility; . . . 5. Keen; sharp; intense; poignant: said of pain, pleasure, etc. 7. In *pathol.*, attended with more or less violent symptoms and coming speedily to a crisis: applied to a disease: as an acute pleurisy: distinguished from subacute and chronic." Such definitions scarcely apply to the human abdomen. With respect to the seventh definition it must be borne in mind that the abdomen is not a disease and that the abdomen does not have symptoms although diseases of the abdomen are characterized by symptoms.

"Acute abdomen" might be used temporarily with propriety when something "should be done in a hurry," but after it has been done it would be in the interest of better English and pathology to employ a more elegant and accurate expression.

M. W. LYON, JR., South Bend, Ind.

[COMMENT:—Scientific medicine demands scientific phraseology. When a doctor "operates" his patient, let it be understood that he "works" him. And if he "operated on" him, let him say so. "Operated cases" and "The child had no temperature" are further samples of the loose English too often used by scientific men.—Ed.]

PHYSICIANS AND GENETICS

To the Editor:—"Given an incorrect diagnosis and you can cure any disease" is, I believe, a current saying in the profession. It seems to draw attention to one of the most striking spectacles of modern times—the expanding field of knowledge which the physician is drawing on for his diagnosis. The day is gone by when a look at the tongue and a count of the pulse and a few words with the patient are enough. The modern physician has come to realize that his patient is more than the product of a few years of growth; that he is, in fact, a combination of human stocks with hereditary tendencies.

What diseases are coupled with the hereditary traits? Which are independent of them? How allay the unwarranted phantoms of "hereditary diseases" in nervous patients? How can we distinguish the hereditary tendencies from phenomena of nutrition? These have come to be real questions with every physician. In the field of heredity, as in few others, the evidences of the laws of inheritance are being

traced in widely different kinds of living creatures, and no physician can afford to overlook the great experimental work of the agricultural research men of America in this field. Their experiments in the breeding of plants and animals under conditions of control such as physicians cannot have, and on a scale which is impossible in the human species, are creating a fund of knowledge which the physician is bound to recognize.

Sixteen years ago, the secretary of agriculture established an association to bring together the breeders of plants, the breeders of animals, and those interested in human heredity. This association, now the American Genetic Association, has grown and become a real factor in the dissemination of the knowledge of heredity through the distribution to its members of a profusely illustrated journal—the *Journal of Heredity*—which is the property of the association. It is not a journal of the superficial class, but a serious one with contributions from specialists.

No longer should the confusion continue between what characteristics come to us in our inheritance and what ones are acquired. We must understand the importance of each, and not confuse them, if we would produce, by the only way possible, a better and nobler race of human beings.

The physician has become the father adviser of the race. It is in his hands, as in no others, to improve it by his advice and suggestion regarding the most vital problems that come to each individual. The science of genetics is already indebted to him for many great discoveries in eugenics, and from now on looks to him for many of the observations on which the generalizations of the future are to be made. No other class of people is more needed in the building of an American genetic association. May I ask your readers to send to the American Genetic Association, Washington, D. C., interesting photographs and accounts which illustrate the working of the laws of inheritance? A special illustrated folder, containing eighteen illustrations of heredity, will be sent to any one interested in this great subject.

DAVID FAIRCHILD, Washington, D. C.,

President, American Genetic Association.

MEDICAL VETERANS OF THE WORLD'S WAR

To the Editor:—Under this name, an organization was effected at the meeting of the American Medical Association in Atlantic City in June, 1919. At that time the membership numbered about 1,200. The executive committee held a meeting in St. Louis, October 15, and at that time the membership had increased to about 2,200. No profession responded more nobly to the country's call than did that of medicine. At least one third of all the legally qualified physicians in this country served in the Army, Navy, or on the Selective Draft Boards. All of these are eligible to this organization.

The purposes of the organization are multiple and varied. In the first place, it is hoped that annual meetings will give opportunity for renewing acquaintanceship begun and developed in camp and in field. It is desirable to preserve the memory of the hundreds of our profession who fell in defense of their country. Those who aided in making the world safe for democracy should be able to have some word in determining what kind of a democracy they fought for. It is not intended that this organization should be political in any sense, but it will be expected that it will be patriotic in every national and state problem that confronts us in the future. Provision is made in the constitution of this organization for state and local chapters. The membership should be extended until it includes all those that are eligible. The physician is interested in everything that touches the national welfare, and on many points in this connection he is the most competent man to speak. As individuals, medical men may have but little influence. Combined, the profession can be a tower of strength in everything that is good, wise and helpful.

VICTOR C. VAUGHAN, President,
Ann Arbor, Mich.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALABAMA: Montgomery, Jan. 13. Chairman, Dr. Samuel W. Welch, Montgomery.
- ARIZONA: Phoenix, Jan. 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
- CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
- COLORADO: Denver, Jan. 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
- DISTRICT OF COLUMBIA: Washington, Jan. 13. Sec., Dr. Edgar P. Copeland, The Rockingham, Washington.
- HAWAII: Honolulu, Jan. 5-8. Sec., Dr. J. R. Judd, Honolulu.
- INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
- KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
- MINNESOTA: Minneapolis, Jan. 6-9. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.
- MISSOURI: St. Louis, Jan. 12-14. Sec., Dr. George H. Jones, State House, Jefferson City.
- NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
- NEW MEXICO: Santa Fe, Jan. 12-13. Sec., Dr. R. E. McBride, Las Cruces.
- NEW YORK: New York City, Albany, Buffalo, Syracuse, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.
- NORTH DAKOTA: Grand Forks, Jan. 6. Sec., Dr. George M. Williamson, Grand Forks.
- OKLAHOMA: Oklahoma City, Jan. 13-14. Sec., Dr. J. M. Byrum, Shawnee.
- OREGON: Portland, Jan. 6. Sec., Dr. Frank W. Wood, 559 Morgan Bldg., Portland.
- PENNSYLVANIA: Philadelphia, Jan. 13-17. Pres., Dr. John M. Baldy, Harrisburg.
- SOUTH DAKOTA: Pierre, Jan. 13. Sec., Dr. Park B. Jenkins, Waubay.
- VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
- WASHINGTON: Spokane, Jan. 6-8. Sec., Dr. C. N. Suttner, 415 Old National Bank Bldg., Spokane.
- WEST VIRGINIA: Charleston, Jan. 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.
- WISCONSIN: Madison, Jan. 13-15. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

THE LOS ANGELES MATERNITY SERVICE

A Municipal Dispensary*

LYLE G. MCNEILE, M.D.

Supervising Obstetrician, Los Angeles Health Department; Attending Obstetrician, Los Angeles County Hospital

LOS ANGELES

In many maternity dispensaries, the primary object has been the teaching of clinical obstetrics to medical students; in such instances the patient is regarded merely as "teaching material," and has been used principally in the teaching of diagnosis. Little attention has been paid to the normal case, and treatment has been detailed to poorly trained assistants. In many of these dispensaries, the actual delivery of the patient has been done by medical students without supervision, and little if any attempt has been made to follow up the case.

Other maternity dispensaries have been operated from purely charitable motives; and if the number of cases cared for by such dispensaries becomes large, the immediate needs of the patient are apt to be considered of paramount importance, and as soon as she is delivered her future is lost sight of.

It is only within recent years that the state has recognized that one of its duties in the promotion of public health is the maintenance and proper regulation of well equipped dispensaries. While health departments throughout the United States have in many instances maintained general dispensaries for the diagnosis and treatment of the common diseases, the obstetric work of the community has in general been left to private dispensaries, and to dispensaries maintained by medical schools and lying-in hospitals. With the

recognition of the economic value to the community of the unborn child, and of the child during the first year of its life, the public is becoming more interested in the problem of the maternity dispensaries. The public health dispensaries recognize the necessity for charity, and furnish, without charge to those who are in need, such medical services as they require. These dispensaries must also recognize, if they are to fulfil their entire function—the furtherance of every measure which would aid in maintaining the first degree of public health—that the proper education of medical students is a public health measure. It is well recognized that in the care of the pregnant woman an attendant possessing the highest type of medical education is required, if the mother and child are to be properly safeguarded. Public health is concerned not only with the life of mother and child, but also with the future health of both. It has been estimated that more than 20,000 women die each year in the United States of conditions which are the direct result of pregnancy. It would seem reasonable to argue that in the presence of such a death rate, health departments throughout this country should feel directly concerned with such measures as will materially reduce these appalling figures.

We feel that every woman has a right as a taxpayer—and all are taxpayers, either directly or indirectly—to demand such provision from the state as will insure her the best chance for a living baby, and good health following delivery.

With these various problems in mind, the Los Angeles Health Department in September, 1915, established the Los Angeles Maternity Service. The object of this service is to provide competent medical attendance for needy mothers, during pregnancy, labor, and the lying-in period.

GENERAL PLAN OF ORGANIZATION

The maternity service is actually the division of obstetrics, to which is referred anything of an obstetric nature which comes to the attention of the health department. In charge of this division is an assistant health commissioner, who is responsible only to the health commissioner.

The assistant health commissioner in charge of the division is known as the supervising obstetrician. The position can be filled only by a trained obstetrician, and not by a general practitioner. The supervising obstetrician receives his appointment from the health commissioner direct, and conditions in the Los Angeles Health Department are such that it seems probable that political activities will never determine the appointment of a physician to this position.

Two resident physicians report directly to the supervising obstetrician. These physicians are in reality interns in obstetrics. The senior resident physician receives \$75 a month, with room, and the junior resident physician receives \$25, and room. On appointment, the physician becomes junior resident physician, and after three months he is promoted to senior resident physician. The total length of service is six months, but the physician may elect to stay for a longer period. The resident physicians are appointed by the supervising obstetrician, and must be graduates of a medical college approved by the American Medical College Association, and licensed to practice medicine and surgery in California.

The assistant supervising obstetricians are appointed by the supervising obstetrician, and act as consultants to the resident physician on all cases. Their function is practically identical with that of the junior attending staff in hospital organization. The assistant obstetricians on this staff are all appointed as a result of teaching positions held by them in the obstetric department of either of the medical schools in Los Angeles.

The externs are senior medical students assigned in rotation from their respective schools for clinical work in

* Read before the Los Angeles Obstetrical Society (a section of the Los Angeles County Medical Association), May 13, 1919.

obstetrics. They serve continuously for two weeks on the dispensary staff, and report directly to the resident physician. They are at all times subject to, and under orders from, the supervising obstetrician and his assistants. All of their work is outlined and prescribed, and they are not allowed to do any obstetric work except under the direct supervision of the resident physician or a member of the staff. Conditions at present require the services of from three to five interns at all times.

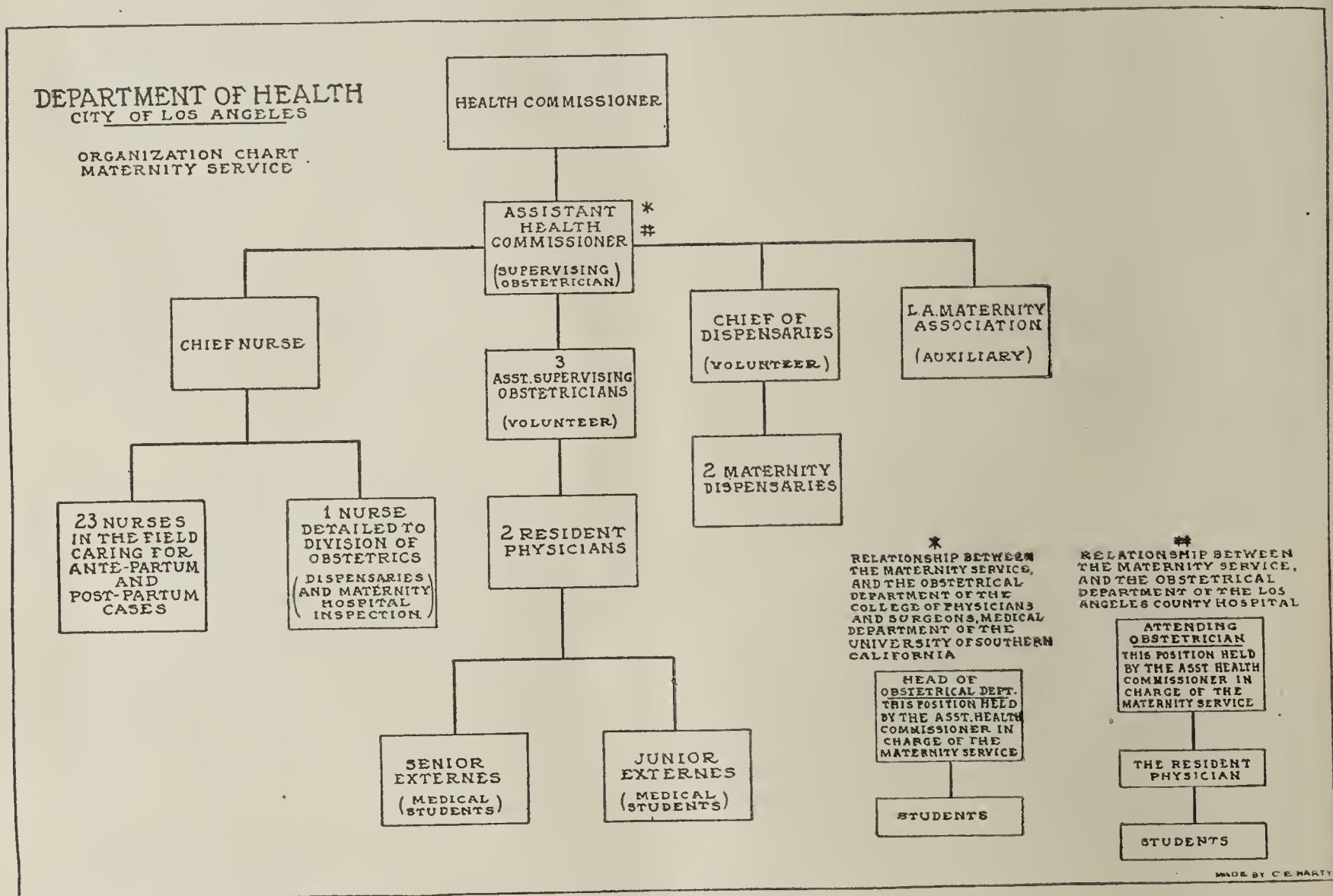
The nurses, twenty-four in number, receive their orders from the supervising obstetrician through the chief nurse in charge of the bureau of nursing. They are civil service employees. One nurse is assigned to maternity hospital inspection, attendance at maternity clinics, and the general work of this division. There are twenty-three nurses in the field who care for antepartum and postpartum cases. We do

maintains fifty beds for obstetric patients. In this hospital are provided adequate facilities for the care of such dispensary patients as require hospital care.

EQUIPMENT

The maternity service has been taken care of in the matter of quarters and equipment. Labor bags, each containing the necessary equipment for the conduct of a normal obstetric case, are provided for each extern. We have made it a rule to place no limit on the actual amount of sterile supplies used in a case, but each labor bag is supplied with a tin, sealed container, which contains a sufficient amount of sterile towels, pads, cotton pledgets, and cord dressing, with which to conduct the average case.

The resident physicians' bags are provided with the equipment found in the externs' bags, and in addition contain a



Organization of maternity service, Los Angeles department of health.

not, at the present time, receive the services of a nurse at the time of delivery.

RELATION TO ALLIED ORGANIZATIONS

It is, we believe, essential that in a dispensary service of this kind, the most intimate relationship should exist between the dispensary, one or more reputable medical colleges, and a first class hospital maintaining a department for the reception and care of obstetric patients. We believe that our plan of organization meets all of these requirements.

The supervising obstetrician also holds the chair of obstetrics at the University of Southern California Medical Department (College of Physicians and Surgeons). He is therefore in direct touch with a majority of medical students acting as externs on the service, and is able to appreciate the problems peculiar to the teaching of clinical obstetrics.

In addition, the supervising obstetrician acts as attending obstetrician to the Los Angeles County Hospital, which

Tycos sphygmomanometer, a perineorrhaphy set, forceps, and a copper sterilizer.

Each dispensary is provided with history desks, two gynecologic examining tables, two tables for external examinations, a sterilizing outfit, drug and supply cabinets, card index equipment, and the reagents and apparatus necessary for routine urinalysis.

Externs' quarters are provided at our Ninth Street Dispensary. Two rooms, each containing two beds, clothes closets, desks and bedside tables are sufficient at our Gless Street Station for the resident physicians.

A high pressure sterilizer is maintained at the Normal Hill Center for the sterilization of all supplies used on the service.

ROUTINE MODE OF PROCEDURE

Cases are reported to the office on a post-card form, report of maternity case, or by telephone in case of emergency. The majority of such reports come from district nurses,

charitable organizations, clinics, hospitals and other similar agencies. A relatively large number of calls come from new patients who have heard of the service from "old patients."

On receipt of a call, the clerk makes out a blank antepartum record, which is handed to the extern on duty. The extern sees the patient within a few hours, recording the medical and obstetric history, with the results of his obstetric examination. The patient is given a copy of our leaflet, "Advice to Those Who Are About to Become Mothers," and a dispensary card giving the location of the

TABLE 1.—GENERAL REPORT, SHOWING GROWTH OF THE SERVICE*

Year	1916†	1917	1918	1919
Applications received.....	427	529	632	773
Women delivered	263	348	408	495
Antepartum house calls	1,020	1,796	3,194	3,158
Postpartum house calls	1,602	2,523	3,112	3,634
Calls at maternity dispensaries:				
Women	736	1,604	2,042	2,047
Children	169	353	454	468
Deaths:				
Mothers	0	0	0	4§
Babies‡	9	19	18	21

* For fiscal year ending June 30, of the year stated.
† Includes the last ten months of the fiscal year (organized Sept. 1, 1915).
‡ From all causes, including stillbirths.
§ All from influenza.

nearest dispensary, and directions for calling the maternity service at the time of labor. She is instructed to come to the maternity dispensary at least every two weeks throughout pregnancy, and to bring with her, at each visit, a specimen of urine for examination.

The routine procedure in caring for patients at the dispensary will be discussed under maternity dispensaries. If the patient cannot or will not go to the dispensary, an extern sees her at her home every two weeks throughout pregnancy.

Labor calls are handled by the telephone exchange maintained by the Los Angeles County Medical Association. On receipt of a call, the operator notifies an extern, who sees the patient immediately. As soon as the extern has made his external examination, he notifies the resident physician. The resident physician sees each patient during labor, and is present at each delivery.

All normal deliveries are cared for in the patient's home, but pathologic cases are, so far as possible, sent to the Los Angeles County Hospital, and remain on the service of our supervising obstetrician.

After the delivery, the bureau of nursing is notified, and a field nurse sees the patient each day for six days, and then on alternate days until the patient is discharged. An extern sees each patient once daily for five days, and then on alternate days until she is discharged. At each visit, routine medical and nursing care is given to the mother and child.

No patient is discharged for at least ten days, and then only if she presents no pathologic features. At the last visit, the extern instructs the patient to visit the dispensary in two weeks for final examination.

MATERNITY DISPENSARIES

At present, the maternity service is maintaining two dispensaries for the care of antepartum, postpartum, and gynecologic cases. In antepartum cases, the patients are carefully examined; external pelvic measurements and blood pressure are taken, and urinalysis is made at regular two week intervals. Internal measurements are taken only in early pregnancies.

We are able to make a postpartum examination of mother and child in nearly all of our cases. Gynecologic cases which

are not operative are treated in each dispensary, while operative cases are referred to the county hospital.

The effect of the educational work done in these dispensaries is becoming more and more apparent, as larger numbers of patients are coming in and asking that they receive antepartum care, as they have noticed that their friends who have received dispensary care get along better at the time of confinement.

The dispensaries care for a large number of women who expect to go to the hospital for confinement. The dispensaries are under the direct supervision of a trained physician, the resident physicians and externs acting as assistants. The physician in charge has always been a woman, and we are convinced that the best results in similar dispensary work can be obtained only by placing a woman physician in charge. It must be remembered that a majority of the maternity clinic patients are used to the attendance of one of their own sex.

SUPERVISION OF MEDICAL STUDENTS

During the first week of his service, the student is called the junior extern, and is expected to make from eight to twelve antepartum and postpartum calls each day, do the routine urinalysis, and attend the dispensaries. In his second, or senior extern week, he does all deliveries, subject to direct supervision, and attends dispensary.

From the time the student goes on duty, until he leaves, he is under the supervision of a member of the staff. He must report to the exchange every forty-five minutes, unless he is at the "quarters" or actually engaged in the delivery of a patient. In this way, we are able to handle the calls promptly, and to know at all times where the student is, and what he is doing. In addition, he is required to make a daily report in writing at the end of each day's work.

In order to avoid the frequent disagreements which so often follow the giving of verbal orders, a comprehensive outline of all the orders and technic used on the service has been issued in book form, and is given the student several weeks prior to his service.

The average extern makes from sixty to seventy calls in pregnant or postpartum cases, examines (externally) from

TABLE 2.—REPORT OF COST OF THE SERVICE

Year	1917	1918	1919
Equipment	38.50	35.90	293.39
Salaries	2,100.00	2,100.00	3,033.35
Contractual services*	220.87	192.02	341.53
Supplies	251.22	419.67	622.28
Total	2,610.59	2,747.59	4,290.55
Cost per delivery	7.50	6.73	8.67
Cost per patient based on applications	4.93	4.35	5.55

thirty to fifty pregnant women in the dispensary, and delivers from eight to twelve women during his service. He is called to the county hospital to witness all pathologic cases occurring during this period.

RELATION TO CHILD WELFARE CENTERS

Every child delivered on this service is referred to the nearest child welfare conference for weekly weighing and supervision of diet during the first two years of its life. Through the cooperation of the district nurses, it has been possible to persuade a large majority of our patients to attend these conferences regularly, and a surprising reduction in first year mortality has resulted.

LOS ANGELES MATERNITY SERVICE ASSOCIATION

There has recently been organized an auxiliary association, formed for the purpose of aiding the maternity service. Through this agency more social service work will be per-

formed, increased facilities for dispensaries will be provided, and eventually a maternity hospital will be erected.

RECORDS

The necessity for accurate and systematic record keeping was recognized at the time this service was first formed, and an appropriate system was installed.

Each report of a maternity case is numbered and filed. A cross reference is made for surname and address in each case. The antepartum record is kept at the quarters and an entry of findings is made each time the patient is seen. All entries are checked by a member of the staff.

Labor records and postpartum records are made at the bedside, and the entries checked. On the completion of a case all the data are filed at the main office.

Daily reports are made by externs and resident physicians, and are made a matter of record. Semimonthly summaries are made on the first and fifteenth of each month, showing all details of the work performed during the current month. A general summary has been kept in such form that it is possible, with the use of an adding machine, to obtain the entire record of the service, or of any period since its establishment, within a few minutes.

CONCLUSIONS

We believe that the maternity dispensary can well be operated as a public health measure. Properly managed, it will aid in raising the standards in obstetric work; will supplant to a large extent the work done by midwives and substitute trained for untrained work; will decrease infant and child mortality; will provide for the registration of births, or other statistics which would otherwise remain unrecorded, and may, in many instances, provide more adequate facilities for the proper training of medical students in clinical obstetrics.

626 Marsh-Strong Building.

Book Notices

THE HEALTH OFFICER. By Frank Overton, A.M., M.D., D.P.H., Sanitary Supervisor, New York State Department of Health, and Willard J. Denno, A.B., M.D., D.P.H., Medical Director of the Standard Oil Company. Cloth. Price, \$4.50 net. Pp. 512, with 51 illustrations. Philadelphia: W. B. Saunders Company, 1919.

While it is seldom that a book is issued about which it can be said that it supplies a real need, the statement can be made of this book. So far as the United States is concerned the position of health officer is a new one. However, it is a position that already offers more opportunities than there are men to meet these opportunities. While he has the fundamental knowledge, the average physician is not qualified as a health officer unless he has especially prepared himself, for public health work is a specialty requiring as much special knowledge as any specialty in medicine. The book before us supplies this special knowledge. As the preface says, "It tells the health officer what to do, how to do it, and why he should do it. It describes the various activities in which a health officer engages; his relation to boards of health, physicians, social agencies, and the public; his qualifications and methods of work; the various diseases and insanitary conditions with which he deals; and the scientific principles on which the specialty of preventive medicine is founded." Actually, however, it does more; it discusses fully the more important contagious diseases from a public health point of view, giving diagnosis, management, methods of prevention, etc. The matter is up to date and reliable, the space allotted to the various diseases being wisely adapted to American needs. The illustrations are of practical value. As a whole the book is to be commended, not only to health officers but to all practitioners of medicine, for it contains information that should be available to every physician.

PSYCHOSES OF THE WAR, INCLUDING NEURASTHENIA AND SHELL SHOCK. By H. C. Marr, Lt-Col. R. A. M. C., Neurological Consultant to the Scottish Command. Cloth. Price, \$6. Pp. 292. New York: Oxford University Press, 1919.

This book purports to describe the results of the observation of some 18,000 officers and men; but in reality the author has attempted a textbook of psychiatry and has included descriptions of the various forms of low-grade feeble-mindedness. The text presents a curious mixture of abstracts, often poorly digested, from modern neuropsychiatric literature, with primitive conception which may well be termed popular. Thus, in the introductory chapter there is a detailed account of nerve structure followed by a description of the "means of observation of mental phenomena" in which there is little besides a study of facial expression, which is said to give "the most reliable information of the nature and quality of mind." Under the heading of psychasthenia the author quotes Janet (not quite correctly), and then proceeds to describe a series of cases of constitutional inferiority with delinquency which obviously bear no relation to the definition given. Hysteria is "neurasthenia of toxic origin." The system of classification is certainly original, but hardly more than illustrates the view of Dr. Marr that "the primary object of classification is to keep our thoughts in order, and this is difficult to effect in relation to insanity." The case histories are sketchy and incomplete in many particulars, diagnosis depends on a purely formal description of symptoms without analysis, and but little light is thrown on treatment. It is difficult to find any useful purpose that can be served by this book.

SEX AND SEX WORSHIP (PHALLIC WORSHIP): A SCIENTIFIC TREATISE ON SEX, ITS NATURE AND FUNCTION, AND ITS INFLUENCE ON ART, SCIENCE, ARCHITECTURE, AND RELIGION, WITH SPECIAL REFERENCE TO SEX WORSHIP AND SYMBOLISM. By O. A. Wall, M.D., Ph.G., Ph.M. Cloth. Price, \$7.50. Pp. 607, with 372 illustrations. St. Louis: C. V. Mosby Company, 1919.

This book is largely based on a collection of erotica available prior to 1896. It is a rather miscellaneous collection of material on the psychology of sex, mythologic beliefs, and the relation of sex to primitive religions. There seems to be a general lack of completeness on any single subject, and lack of organization is apparent not only in the individual chapters but also in the work as a whole. For these reasons the book cannot be classed as a contribution to the advance of knowledge on this subject, since it presents practically nothing that is not available elsewhere. It may, however, be of interest to the casual reader. The illustrations are in large part reproductions of old paintings and sculpture.

Social Medicine, Medical Economics and Miscellany

LIVING EXPENSES FOR THIRTY YEARS

There is probably no question today that the average American family views with so much anxious interest as the very practical one of the steadily advancing cost of living. Many discussions appear that take up the topic from various angles. One of the most unique contributions to the general subject appears in the *Outlook*, Dec. 3, 1919. The account given by R. R. R. of his household expenses for the thirty years period from 1889 to 1919 appeals to the reader more than government statistics, as it covers actual family experience and considers two of the elemental factors of human existence—income and outgo. The writer is the head of a family in Massachusetts, and has been a railway employee for thirty years. This significant record begins with 1889, the year of his marriage. In that year he introduced in the home the custom that each member of his family who bought an article was to write down the article and its cost on a tally board. Each week he entered these figures in his "house book." He found that his tally board system encouraged economy in his family. Entering everything on the tally board in black and white served to make the matter

of making ends meet a sort of game that everybody enjoyed. Would they meet or would they not meet? was always very much of a question. Some commodities, such as sugar and flour, were actually cheaper in 1899 than in 1889, and even up to 1909 there was not such a tremendous increase; the greatest came during the past ten, and more especially during the past four years. Table 1 well illustrates this.

TABLE 1.—A COMPARISON OF PRICES OF STAPLE COMMODITIES DURING A THIRTY YEAR PERIOD (1889-1919)

	Butter, per Lb.		Lard, per Lb.		Milk, per Qt.		Sugar, per Lb.		Flour, per Bbl.		Potatoes, per Bushel		Coal, per Ton
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
1889..	\$0.34	\$0.26	\$0.10	\$0.09	\$0.05	\$0.05	\$0.07	\$0.07	\$7.50	\$6.50	\$0.80	\$0.80	\$6.00
1899..	0.34	0.25	0.10	0.08	0.06	0.05	0.05	0.05	5.00	4.50	1.00	0.75	6.75
1909..	0.34	0.26	0.16	0.12	0.06	0.06	0.06	0.05	7.00	6.25	1.20	0.75	7.50
1919..	0.80	0.58	0.43	0.32	0.15	0.15	0.11	0.10	14.00	13.00	4.00	1.00	12.65

Eggs have changed more than any other commodity. In 1897 the highest and lowest prices were 36 and 15 cents a dozen, respectively. In 1919 the maximum and minimum were \$1.20 and 40 cents. In 1894 and 1895 sugar was only 4 cents. The highest price prevailed in 1919.

It has been a very close race between the advancing prices and the writer's slowly increasing income. However, he has managed, with the aid of a \$500 legacy, to buy a home worth \$3,000 and to save \$1,600 besides. For life insurance about \$1,300 has been spent.

TABLE 2.—WAGE SCHEDULE DURING THIRTY YEAR PERIOD

Year	Daily Wage
1889.....	\$1.75
1892.....	2.30
1895.....	2.50
1899.....	2.75
1902.....	3.00
1907.....	3.25
1910.....	3.75
1916.....	4.00
1918.....	5.00
1919.....	5.50

Since 1903 the writer has been employed as a freight conductor on a small nonunionized railway. He concludes with he thought that while he and his family have never had much, they have had enough.

MODERN HYGIENE

Desfosses publishes in the *Presse médicale* a signed editorial with the heading, "Demagoras, hygieniste." He compares Iatros and Demagoras. Iatros, the physician who as grown old helping the sick; his glory, the gratitude of a few whom he has saved from the tomb. Every day, every hour, he teaches practical hygiene. He is not afraid to tell Demos that many of his ills come from from his bad habits; that physiologic poverty comes often from vices; that the best way to keep well is to be clean physically and morally; he tells the young men that the surest way to avoid venereal diseases is to keep from exposing oneself to contagion; he hints to the workman that cirrhosis and dropsy and even tuberculosis are picked up in the barroom (*se prennent sur zinc*), and that accidents are often the consequence of imprudence or drunkenness. He teaches that progress in hygiene is possible only by individual effort. General measures are effectual only with the active collaboration of the individual. Every man hews out his own destiny. He reaches constantly moderation in eating and in pleasures, and regularity in habits. But Demagoras with his new diploma as hygienist, obtained after a few months in a bacteriologic laboratory and attending a few lectures on hygiene, declares that the sick are the victims of Society; that diseases are the result of the bad organization of public hygiene. If people are tuberculous, that is because the declaration of tuberculosis has not been made compulsory: how can a disease be combated if its exact prevalence is not

known? Far from exhorting Demos to lead a more hygienic life, his axiom is that Society is to blame for everything. If the laboring man drinks liquor, it is because he wants to forget; if he is lazy, it is because he does not get enough food. The young man should be able to obey without restraint the desires which Nature has implanted in him. It is for the antivenereal dispensary to render Venus safe and dry Cupid's tears. To establish once for all and absolutely school hygiene, urban hygiene, industrial hygiene, all that is necessary is to have numerous inspectors, well paid. Demagoras speaks with superb disdain of clinicians. He, himself, represents Science. Medicine for the physicians; hygiene for the hygienists. Demos can without fear seek his pleasures; Demagoras will assure him the scientific organization of hygiene. The people thus hear two voices preaching to them: To keep well, develop your individual energy, do not count on any one but yourself, says the physician. To keep well, develop the system of public functionaries, count on me, clamors Demagoras. We may well imagine how puzzling these two tendencies must prove to laymen accustomed to guide themselves by authority, and who under the circumstances cannot determine by themselves which is the correct advice. It would seem, however, that here as elsewhere, the middle of the road would be the safest, and that both individual hygiene and public sanitation must be observed if Society is to secure a maximum of protection against disease.

Medicolegal

Annulment of Marriage for Concealing Tuberculosis

(*Davis v. Davis* (N. J.), 106 Atl. R. 644)

The Court of Chancery of New Jersey holds that a court of equity has inherent jurisdiction, independent of statute, to annul a marriage on the ground of fraud; and that the suppression by one party of the fact that he is suffering from a disease which renders the close intimacy of the marriage relation dangerous, and which may result in a transmittal of the disease to offspring, is such fraud as will warrant a court of equity in annulling a marriage. More particularly, the court holds that where, at the time of marriage, the defendant husband was suffering from hereditary chronic tuberculosis, and did not inform the petitioner of the fact for the reason that he feared, if he did, she would not marry him, and it appeared that if she had been so informed she would not have, in fact, married him, there was such fraud as would warrant the court in annulling the marriage, notwithstanding the fact that the parties lived together as husband and wife for a period of six months, until the discovery by the wife of the existence of the disease, and notwithstanding the fact that there was a child born, which lived for only four days, where it appeared that, immediately on the discovery of the existence of the disease, the petitioner ceased cohabitation; and such being this case, a decree for the petitioner is advised.

It is well known, says Vice Chancellor Lane in the opinion in the case, that close contact with one suffering from tuberculosis involves great danger of transmission both through infection and through contagion. It is almost impossible to conceive the ordinary relationship of husband and wife existing without that danger ever present. There is always also great danger of transmittal of the disease to offspring, and, if the disease itself is not transmitted, there are likely to be transmitted characteristics which predispose toward the development of the disease. False representations with respect to its existence go, then, to an essential of the marriage relation. They are very different from representations with respect to health in general. They are more akin to representations of freedom from leprosy or diseases of similar nature. I cannot agree that the only diseases which affect an essential of the marriage relation are those of a venereal nature. I can see nothing whatever in good policy, sound morality, or the peculiar nature of the marriage

relation which would warrant the court, after having found the fraud, denying relief. Neither good morals nor public policy are subserved by compelling parties to live together as man and wife, with the ever-present danger of infection, and beget offspring liable to be tuberculously inclined, nor are they subserved by compelling a woman, who has married under a misrepresentation with respect to the fact, to continue to be bound to a man affected with tuberculosis without having the close intimacy to which she is entitled. I am unable to conclude that there is any essential difference, so far as the matter now under consideration is concerned, between tuberculosis and syphilis.

While due caution may require a party to a marriage contract to make his own investigation with respect to fortune, family and other external conditions, it seems to me to be going too far to say that due caution requires a party to a marriage contract to require the production of a medical certificate, and in the case at bar a medical examination would have been required to advise the petitioner of the condition of the defendant. Such a rule is not applied in the case of syphilis, nor do I think it should be in the case of tuberculosis. The suppression by the defendant of the fact that he was suffering from tuberculosis of the nature that he was, for the reason that he did suppress it, was equivalent in law to an express representation on his part that he was free from it.

Board of Health Refusing Permit for Hospital

(*People ex rel. Sprenger v. Department of Health of City of New York* (N. Y.), 123 N. E. R. 379)

The Court of Appeals of New York, in affirming an order of the appellate division that affirmed one granting a peremptory writ of mandamus commanding the defendant to grant the relator a permit for a private hospital for the treatment of medical, surgical and obstetric cases, says that the head of the department of health of the city of New York is the board of health. The sanitary code enacted by the board of health provides that no person shall conduct a private hospital without a permit therefor issued by the board of health. The regulations of the department of health provide that the proposed site and sanitary condition of the hospital building shall be subject to the approval of the department of health. The charter of the city provides that the board of health may embrace in the sanitary code all matters and subjects to which, and so far as, the power and authority of the department of health extends, not limiting their application to the subject of health only.

The board has general jurisdiction over the establishment and maintenance of hospitals, including the licensing of hospitals. On an application for a permit, it should consider and give proper weight to all the ordinary contingencies and circumstances appropriate to the subject which require the exercise of discretion. The element of location may be material. The effect of a proposed location on property values in the neighborhood need not be wholly disregarded, and may even become decisive in a case otherwise doubtful. But the authority now conferred on the board does not include, expressly or by reasonable implication, the power to refuse a permit, as was done in this case, when all other conditions are satisfactory and no offense to the senses is suggested, for the exclusive reason that "considerable damage would accrue to the surrounding property if the permit were granted." That reason considered alone came not legally within the scope of its discretion. The property rights of one owner may not be subordinated to the property rights of his neighbors, except as an incident to the exercise of authority reasonably conferred for the general welfare. The action of the board was, as the law now exists, unauthorized, and therefore unreasonable and arbitrary; the relator's remedy was mandamus; and the order appealed from should be affirmed, with costs.

The question of legislative power wholly to exclude hospitals, such as hospitals for contagious diseases or for the treatment of inebriates or the insane, from particular places, such as thickly populated or fine residential districts, was not before the court.

Inadequate Ordinance and Complaint of Board of Health

Board of Health of City of Paterson v. Clayton et al. (N. J.), 106 Atl. R. 813)

The Supreme Court of New Jersey, in affirming an order setting aside a conviction of defendant Clayton of a violation of the health code of the city of Paterson, says that the section of the code, or ordinance of the board of health of the city, which he was charged with violating, reads:

"That whatever is dangerous to human life or health, whatever building, erection, or part or cellar thereof is not provided with adequate means of ingress and egress or is not sufficiently supported, ventilated, sewerred, drained, cleaned or lighted, and whatever renders the air, food or water unwholesome, are declared to be nuisances and are prohibited. Any person violating any of the provisions of this section shall be liable to a penalty of not less than five dollars nor more than one hundred dollars."

The complaint charged that Clayton violated the provisions of this section in this, that he "had people congregated and invited people to congregate in his saloon," at a certain location, such action of his "being dangerous to human life and health, there being an epidemic of influenza in the city." But the court does not think that the complaint charged any violation of the section. Passing the argument, which had much to support it, that the ordinance was aimed at physical conditions pertaining to inanimate objects, and not at human conduct, and, conceding for present purposes that the assembling of a numerous crowd in an unventilated and confined room during an epidemic of contagious disease was within the purview of the ordinance, as to which the court expresses no opinion, there was yet no allegation of any such act in the complaint. Certainly the mere inviting people to congregate in the saloon was not dangerous to life or health. As to the charge of "having people congregated" in the saloon, it might have been as few as three, and there was no proof that there were more, came together at the instance of Clayton in a saloon, of unknown dimensions, with unknown facilities of ventilation, on a certain date, while influenza was in a general way epidemic in the city. It may be freely conceded that epidemics of contagious and infectious disease may be, and have been, so severe and dangerous as to justify the most drastic rules against personal contact of individuals, but there was nothing in the complaint to show that such conditions prevailed in this case, and if they did prevail, the ordinance was not such a rule as to meet the emergency, and it did not support the complaint, which under well-recognized rules must be taken at the minimum of the facts charged.

Physicians Not Required to Report to Defendants

(*Tutone v. New York Consolidated R. Co.* (N. Y.), 177 N. Y. Supp. 818; *Herbert v. Brooklyn Heights R. Co.* (N. Y.), 177 N. Y. Supp. 901)

The Kings County, N. Y., court holds in these two personal injury cases that orders for the physical examination of the plaintiffs by physicians were erroneous in requiring that the reports of the physicians should be given to counsel for the defendants. The decisions are by two different justices. In the Herbert case, Justice May says there is nothing in the New York statutes which directs or requires a report to be made by the examining physician. The sole object of the statute in permitting physical examinations is to reduce the likelihood of fraud being practiced to a minimum, by granting the right to the defendant to compel the plaintiff merely to submit to such physical examination at the hands of the physicians, so that testimony thereof may be given on the trial. While it has been customary for physicians so appointed to make a report and deliver it to the defendant, there is no authority apparently in the law therefor. There may be no objection, perhaps, to the disclosure by the physician to the defendant of the results of his examination, but the court has no power to direct him to make such report, and therefore it follows that there can be no direction to deliver a report to the defendant, or to file a report in the office of the county clerk.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

December, 1919, 18, No. 6

- *Early Recognition of Hydrocephalus in Meningitis. K. D. Blackfan, Baltimore.—p. 525.
- Stammering as Disorder of Speech Dependent on Conditions of Child Development. E. L. Kenyon, Chicago.—p. 537.
- *Rôle of Antineuritic Vitamin in Artificial Feeding of Infants. A. L. Daniels, A. H. Byfield and R. Loughlin, Iowa City.—p. 546.
- *Chemical Examination of Blood in Children. H. D. Chapin and V. C. Myers, New York.—p. 555.
- Qualitative and Quantitative Changes in Cerebrospinal Fluid of Various Diseases and Their Significance. A. Levinson, Chicago.—p. 568.
- *Résumé of Experimental Studies on Cutaneous Hypersensitiveness. E. C. Fleischner, K. F. Meyer and E. B. Shaw, San Francisco.—p. 577.

Hydrocephalus in Meningitis.—Blackfan carried out the phenolsulphonephthalein test in twenty-five cases of meningitis in which hydrocephalus had developed, and had roentgenograms made after the injection of the ventricles with air. Seventeen cases were caused by the meningococcus. Communicating hydrocephalus developed in eight of these cases, and the obstructive form in nine. Ten of the seventeen patients died. Two of the seven patients who recovered had an obstructive hydrocephalus and improvement followed promptly after the introduction of antimeningococcus serum into the ventricles. In four cases in which a communicating hydrocephalus was present, the process became arrested after treatment. The patients made an uneventful recovery. One patient developed a chronic hydrocephalus (communicating). A ventriculogram showed almost complete destruction of the cortex. A necropsy was performed in the ten fatal cases, and the clinical diagnosis was confirmed by demonstration of the exciting cause of the hydrocephalus. In seven cases of obstructive hydrocephalus an exudate occluded the foramina at the base of the brain, and in three cases of communicating hydrocephalus the basal cisternae were totally obliterated by a thick purulent exudate.

Antineuritic Vitamin.—The investigation reported on by Daniels, Byfield and Loughlin indicated that the addition of the antineuritic vitamin obtained from wheat embryo to the diet of babies who are supplied with food furnishing an adequate number of calories stimulated growth. The beneficial influence of adding a specially prepared vegetable soup in sufficient quantity as a part diluent in the milk modifications for infants is apparently due to the presence of the antineuritic vitamin contained therein. Both the alcoholic soluble material of the dried soup vegetables, and the water extract (soup) stimulated growth. The fact that the artificially fed infant requires a larger amount of food than the breast fed infant appears to be due to the relative paucity of diluted cow's milk in the antineuritic vitamin. The authors suggest the probability that failure of infants and young children to gain is often the result of an insufficient amount of the antineuritic vitamin in the food, therefore, the diets of the young should be scrutinized more carefully with this in mind.

Blood Chemistry.—Chemical blood observations were made by Chapin and Myers on 149 children, thirty-eight of whom were nephritics and six diabetics. In general, the results obtained are quite similar to those obtained in the adult, although the kidney of the child would appear to act somewhat more efficiently than in the adult, resulting in slightly lower normal figures for the sugar, urea, creatinin and uric acid, and a slightly better phenolsulphonephthalein output. In harmony with this, nephritis in children does not so quickly result in urea retention as in the adult, making the prognosis more favorable in early than in later life. As might be expected, creatinin retention rarely occurs in children. The authors regard the blood urea as an especially helpful prognostic test in the nephritis occurring in children. The results of phenolsulphonephthalein tests harmonize very well with the clinical findings and the blood urea. The carbon dioxid combining power of the blood is a very reali-

able method of ascertaining the severity of the acidosis in the diarrheal acidoses. The blood findings of diabetic children do not differ from similar observations in adults.

Cutaneous Hypersensitiveness.—Fleischner and his associates found that bacterial proteins, soluble or insoluble, which sensitize a guinea-pig in an anaphylactic sense will not sensitize its skin.

American Journal of Medical Sciences, Philadelphia

November, 1919, 158, No. 572

- *Recent Advances in Gastric Physiology. W. C. Alvarez, Berkeley, Calif.—p. 609.
- *Persistent Eosinophilia with Hyperleukocytosis and Splenomegaly. H. Z. Giffin, Rochester, Minn.—p. 618.
- Medical Aspects of Wounds of Chest in War. G. C. Shattuck, Boston.—p. 629.
- *Heart in Bronchopneumonia: Activity and Response to Digitalis. T. S. Hart, New York.—p. 649.
- *Transfusion of Blood in Pernicious Anemia. J. M. Anders, Philadelphia.—p. 659.
- *Hypertension: Its Significance, Relation to Arteriosclerosis and Nephritis and Etiology. E. Moschowitz, New York.—p. 668.
- *Meningo-Encephalitis as Only Manifestation of Mumps: Report of Three Cases. T. Howard, Brooklyn.—p. 685.
- *Myxoma of Heart Simulating Bronchopneumonia. W. H. Norton, Mt. Clemens, Mich.—p. 689.
- *Bacteriology of Mumps: Report of Findings at Camp Lee. R. L. Haden, Detroit.—p. 698.
- Is Essential Epilepsy a Life Reaction Disorder? L. P. Clark, New York.—p. 703.
- Blood Transfusion. J. R. Losee, New York.—p. 711.
- *Vaccination by Subcutaneous Injection. J. R. Goodall, Montreal.—p. 721.
- *Laboratory Studies in Influenza at Camp Travis, Texas. P. B. Matz, U. S. Army.—p. 723.

Recent Advances in Gastric Physiology.—Evidence is presented by Alvarez which suggests strongly that there is a gradient of metabolism underlying and, perhaps, giving rise to the gradients of irritability, latent period and rhythmicity which, it is believed, determine the direction of peristalsis. The metabolic gradient is often found reversed in such animals which are refusing food. There appears also to be a gradient of metabolism in the mucous membrane of the stomach. The lowest values in the whole digestive tract are found in the antrum. It is shown how this may explain the high incidence of cancer in that region and the inability of the tumors to cross over into the duodenum, where there is a very high metabolic rate. An explanation is given for the fact that a sleeve resection gives a better functional result in ulcer of the lesser curvature than a V excision.

Persistent Eosinophilia.—Giffin's patient was a man, 31 years of age. He had a marked splenomegaly, slight enlargement of superficial lymph glands; leukocytosis—21,800 before splenectomy—with an eosinophilia of 73.6 per cent. The spleen was removed. It weighed 2,110 gm. Macroscopic appearance was similar to that of the spleen in myelogenous leukemia. The leukocyte count rose rapidly to 97,200 and later to 211,000; eosinophilia rose from 79 to 90.7 per cent. The patient was in good general condition for a period of four years following splenectomy. Death was due to empyema following pneumonia. At the necropsy, enormous numbers of eosinophilic polymorphonuclears were found in all hemopoietic organs; eosinophilic myelocytes were numerous in lymph glands, spleen and bone marrow. Giffin regards the case as an instance of eosinophilic hyperleukocytosis, the blood picture of which was remarkably altered by splenectomy, and suggests a special function of the spleen with respect to eosinophilic cells or with respect to the toxins which eosinophilic cells are capable of absorbing.

Heart in Bronchopneumonia.—In the cases studied by Hart the routine method adopted was to begin the administration of digitalis as soon as the diagnosis of pneumonia was reasonably sure. There was given of the tincture 25 minims, every four hours, for six doses, which was then reduced to 15 minims, every eight hours, and continued, with modification according to the individual indications, throughout the course of the disease. Patients who developed symptoms of toxemia very rapidly or who were found in this condition on admission, were frequently given from 15 to 30 minims of a digitalis preparation intravenously, and this was repeated every four hours, up to three or four doses, after which time the tincture was usually substituted. For the sake of com-

parison and control a considerable number of cases were from time to time selected at random and treated by methods identical in all respects, except that in these no digitalis was administered. Absolutely no difference in the course of the disease could be observed in the two series, except that the electrocardiograms of those patients receiving digitalis showed the characteristic changes, and in two instances an arrhythmia developed which proved to be due to a condition of partial heart block. The patients to whom digitalis was given ran their course without a change in the pulse rate which could be attributed to the drug. The terminal increase in the heart rate in the fatal cases was identical in both groups. No difference could be noted in the two series in the behavior of the blood pressure. In two cases of chronic cardiovascular disease with auricular fibrillation, the circulatory condition was much improved, the heart became slow and appeared reasonably efficient. Four patients out of several hundred to whom digitalis was given, showed block following digitalis, but recovered and gave no evidence of subsequent ill effects from its administration. In one case block appeared only after the administration of 465 minims of the tincture, in another an almost identical cardiac activity appeared after the administration of 230 minims of the tincture. Other patients in the series received considerably larger amounts of digitalis, and yet showed no evidence of heart block.

Transfusion of Blood in Pernicious Anemia.—Following two injections of 500 c.c. of whole blood (ten months apart), Anders' patient was so much improved in every way that he was able to attend to duties that he had not performed for the past ten years. Anders reviews the literature of 362 cases in which the result was given; in 204, or 56.3 per cent., there was an initiation of remissions. The average number of transfusions per patient was 2.4.

Hypertension Arteriosclerosis and Nephritis.—In many instances, at least, Moschowitz says the pathologic changes in the kidney of Bright's disease are the results rather than the cause of hypertension. Such a conception would render it very probable that the hypothesis of the primary vascular origin of the lesions in the kidney in Bright's disease is correct. Arteriosclerosis and Bright's disease have therefore the same pathogenesis, the lesion in each being modified by the nature of the organ. The direct etiology of hypertension is unknown. However, a type of person is described, conforming to certain physical and psychic complexes, in whom hypertension is very likely to occur. This type is the antithesis of the child, both in mind and spirit.

Meningo-Encephalitis Due to Mumps.—The three cases reported by Howard are regarded as instances of mumps meningo-encephalitis, in spite of the absence of inflammation of the salivary glands, for the following reasons: 1. They occurred in the presence of a mumps epidemic. 2. Two of the patients had never had mumps, while the third had been told by his father that he had had mumps, but could not remember it himself. 3. They all presented mild symptoms of meningo-encephalitis, which were entirely relieved or much ameliorated by spinal puncture. 4. In two of the three cases there was recovered from the spinal fluid a gram-positive diplococcus. This was found in direct smear and grown in pure culture in both cases. In the third case it was found in smear three times and recovered in culture twice. 5. The spinal fluid in each case presented a moderate pleocytosis, characterized by a predominance of mononuclear cells. The conditions which show this picture are (a) syphilis, (b) sometimes tuberculous meningitis, (c) encephalitis lethargica and (d) mumps. As to syphilis, two of the patients were negative serologically and the third, while having a positive Wassermann, repeatedly showed the presence of a gram-positive coccus in the spinal fluid. Tuberculous meningitis is ruled out in all cases by the clinical course. The same is true of lethargic encephalitis, there being no cranial nerve involvement and no palsies of any kind. There was also lacking the increase of tendon jerk almost uniformly present in this disease.

Heart Myxoma Simulating Bronchopneumonia.—Norton describes the clinical and necropsy findings in his case in

the hope that eventually a symptom complex for cardiac tumors may be worked out. The left auricle was filled by a tumor mass which was implanted by a broad base on the auricular wall. It was made irregular by polypoid-like growths, bulging the fossa ovalis into the right pulmonary vein, another into the mitral orifice and so completely filling the cavity that it was difficult to pass a small flexible probe between the tumor and auricular wall into the left ventricle.

Bacteriology of Mumps.—Five cases of mumps are reported by Haden in which a gram-positive diplococcus was isolated from the spinal fluid, the blood and a lymph gland. The injection of the organism into the testicle of a rabbit produced a severe orchitis in ten days. These findings confirm previous reports.

Vaccination by Subcutaneous Injection.—A similar article was published in the *Lancet* 2:285 (Aug. 16) 1919, and abstracted in *THE JOURNAL*, Sept. 20, 1919, p. 942.

Laboratory Studies in Influenza.—The epidemic of influenza at Camp Travis was characterized by the presence of the bacillus of Pfeiffer in 39 per cent. out of a total of 868 throat cultures examined. Blood cultures in the influenza cases were all negative. Blood cultures in the complicating bronchopneumonias gave 11 per cent. positives. The organism recovered was the pneumococcus. The blood picture of the average case of influenza showed a slight leukopenia, with a relative increase of the small mononuclears. When the bronchopneumonia developed there followed a slight increase in the total leukocyte count and an increase of the polymorphonuclears. Chemical examination of the blood showed a retention of urea nitrogen in the pneumonias having no kidney involvement. The retention of urea nitrogen in cases with transient nephritis was no greater. It is Matz' opinion that this retention in the bronchopneumonia under discussion was due to protein injury and distintegration, associated with extensive lung inflammation. Blood chemistry in the empyema cases showed a retention of urea nitrogen. Acidosis was a factor in a large number of the bronchopneumonias.

American Journal of Ophthalmology, Chicago

November, 1919, 2, No. 11

- Macular Hole in Retina. A. B. Middleton, Pontiac, Ill.—p. 779.
- Hole at Macula. E. E. Maxey, Boise, Ida.—p. 792.
- Disturbance of Vision in Patients Harboring Filarial Tumors. R. P. Luna, Guatemala, C. A.—p. 793.
- The Scoop Perimeter. S. J. Beach, Augusta, Me.—p. 796.
- Ocular Angioneurotic Edema and Glaucoma. H. Barkan, San Francisco.—p. 800.
- Ophthalmologic Paris. C. A. Bahn, New Orleans.—p. 804.
- Treatment of Symblepharon and Restoration of Orbital Socket. W. H. Wilder, Chicago.—p. 807.
- Visual Disability from Eye Injury and Compensation. S. G. Higgins, Milwaukee.—p. 813.

American Journal of Physiology, Baltimore

November, 1919, 50, No. 2

- Hyperglycemia Provoking Ability of Asphyxial Blood. K. Yamakami, Tohoku, Japan.—p. 177.
- *Urea Excretion After Suprarenalectomy. G. Bevier and E. A. Shevky, San Francisco.—p. 191.
- Posture-Sense Conduction Paths in Spinal Cord. E. S. May, and J. A. Larson, San Francisco.—p. 204.
- Regulation of Blood Diastase. B. Fujimoto, Tokyo, Japan.—p. 208.
- Changes in Content of Hemoglobin and Erythrocytes of Blood in Man during Short Exposures to Low Oxygen. H. W. Gregg and E. C. Schneider, Mineola, N. Y.—p. 216.
- Circulatory Responses to Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, Mineola, N. Y.—p. 228.
- Conduction in Small Intestine. W. C. Alvarez and E. Starkweather, San Francisco.—p. 252.

Urea Excretion After Suprarenalectomy.—It is suggested by Bevier and Shevky that their findings support the hypothesis that an epinephrin-pituitrin balance exists in the blood which may regulate the rate of kidney function, the results obtained after suprarenalectomy exhibiting apituitary effect unopposed by the normal secretion of the suprarenals.

Annals of Surgery, Philadelphia

December, 1919, 70, No. 6

- *Conservative Treatment of Sarcoma of Long Bones. W. B. Coley, New York.—p. 633.
- Analysis of Results of Six Years' Follow-Up System in a Hospital Surgical Service. C. L. Gibson, New York.—p. 661.

- War Surgery Under Front Line Conditions. E. C. Cutler, Boston.—p. 695.
- *Postoperative Suppurative Parotitis. W. H. Fisher, Toledo.—p. 713.
- Drainage in Appendicitis. E. T. Rulison, New York.—p. 724.
- Ankylosing Operations on Tuberculous Spine. L. W. Ely, San Francisco.—p. 744.
- *Experimental Study of Buried Bone. L. W. Ely, San Francisco.—p. 747.
- Self-Retaining Slide Bone Graft. H. C. Masland, Philadelphia.—p. 750.
- Use of Metallic Fixatures in Securing Bone Fragments. W. L. Bell, Oakland, Calif.—p. 754.
- Case of Left Branchial Cyst Opening on Right Side. A. G. Brenizer, Charlotte, N. C.—p. 758.

Treatment of Sarcoma of Long Bones.—This paper consists chiefly of a report of the cases of sarcoma of the long bones that have come under Coley's personal observation during the past five years, with a brief review of cases previously published. The toxin treatment was resorted to in these cases.

Postoperative Suppurative Parotitis.—Fisher claims that septic parotitis is of hematogenous origin, and that cachexia and malnutrition, by lowering resistance, are predisposing factors. The secretion of the gland is under the influence of nerve stimuli, and the incidence of postoperative parotid involvement is neurologically dependent on surgical shock or inhibition of the secretory and trophic fibers from higher psychic centers. The gland must be susceptible to pyogenic micro-organisms, and when affected, bacteriemia exists in all cases. Early incision and drainage are indicated.

Experimental Study of Buried Bone.—The conclusions reached by Ely in former studies are confirmed, but this series indicates, in addition, that the bone and marrow of the buried fragment both die. The marrow is then reformed by blood vessels, pushing in from the surrounding tissues, and a certain amount of new bone is laid down on the old, especially along the margins of the trabeculae. The cartilage usually lives, but slowly becomes eroded at its surface, and becomes thinner. Its buttress soon disappears. Raw bone resists absorption better than boiled bone, but it also is slowly absorbed.

Boston Medical and Surgical Journal

Dec. 11, 1919, 181, No. 24

- *Transmission of Influenza. J. P. Leake, Washington, D. C.—p. 675.
- Bacteriology of Secondary Pneumonia. H. T. Chickering, New York.—p. 679.
- Treatment of Influenzal Pneumonia by Convalescent Human Serum. W. R. Redden, U. S. Navy.—p. 687.
- Surgical Treatment of Acute Empyema Following Influenza. W. Whitmore, Boston.—p. 692.

Transmission of Influenza.—The results of all human experiments with the Pfeiffer bacillus, with secretions, with direct exposure, with subcutaneous inoculation of filtered secretions and unfiltered blood, were entirely negative in the work reported on by Leake. Micrococci of the group found by Mathers as very frequent in the respiratory tract of influenza patients were similarly inoculated without result. A sudden outbreak of 215 cases of influenza furnished donors for other experiments which also were negative. Two men, however, developed acute follicular tonsillitis, and a strongly hemolytic streptococcus became the predominating organism in the throat. In one of these patients the symptoms resembled influenza nine hours after onset. Transfer was then made of his secretions to ten more volunteers. In all of these ten, with one exception, the strongly hemolytic streptococcus became the predominating colony, and five of the nine developed acute follicular tonsillitis about two days after inoculation. This other volunteer, five days after inoculation, suddenly began to have a headache, fever, prostration and cough, pains in the back, etc. At first his nasopharyngeal bacterial flora were not much altered but after several days of sickness, Pfeiffer's bacillus began to be the predominant organism. The donor from whom the patient was inoculated apparently had an acute follicular tonsillitis due to the hemolytic streptococcus (beta type) though he had in turn received secretions from true cases of influenza. Another set of ten volunteers received the secretions obtained from an uncomplicated case of influenza four hours after onset. All of these remained well except one, who after thirty-six hours began to have fever, pain

in the back and chest, cough, anorexia, etc. The same bacteria were present after as before inoculation, but instead of the hemolytic streptococcus being predominant as at first, its place was taken by the Pfeiffer bacillus, which was second in importance before inoculation. Fifty-four hours after onset, an attempt was made to transfer the infection by means of secretions to the final group of fifteen volunteers, but without success. It appears from these experiments that influenza is transmissible by means of the nose and throat secretions of persons suffering from the disease, with the nose and mouth as portals of entry, but that such transmission is far from a uniform result of such exposure; the first twenty-four hours of the disease were the most favorable for this transmission. The customary measures for prevention are therefore reasonable.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1919, 9, No. 11

- Reconstruction Problem for Disabled Soldier. J. L. Porter, Chicago.—p. 365.
- Blood Transfusion as Employed in an Evacuation Hospital in the Advance Zone. A. E. F. L. E. Shafer, Davenport.—p. 317.
- Statistics of Rejections and Their Causes in Recent Draft. C. S. Grant, Iowa City.—p. 375.
- Laboratory Service of Divisional Laboratories. L. A. Flitze, U. S. Army.—p. 378.
- Work of Red Cross Organizations in Relation to Preventive Medicine of Future. A. Newsholme, London, England.—p. 382.

Journal of Biologic Chemistry, Baltimore

November, 1919, 40, No. 1

- Cephalin. VII. Glycerophosphoric Acid of Cephalin. P. A. Levene, and I. P. Rolf, New York.—p. 1.
- Comparative Metabolism of Certain Aromatic Acids. III. Fate of P-Nitrophenylacetic Acid in Organism of Fowl, Dog and Man. C. P. Sherwin and M. Helfand, New York.—p. 17.
- *Studies of Blood Regeneration. I. Effect of Hemorrhage on Alkaline Reserve. M. V. Buell, Madison, Wis.—p. 29.
- *Id. II. Effect of Hemorrhage on Nitrogen Metabolism. M. V. Buell, Madison, Wis.—p. 63.
- Animal Calorimetry. Influence of Lactic Acid on Metabolism. H. V. Atkinson, and G. Lusk, New York.—p. 79.
- *Antiscorbutic Value of Banana. H. B. Lewis, Urbana, Ill.—p. 91.
- *Determination of Carbon Monoxid in Blood. D. D. Van Slyke and H. A. Salvesen, New York.—p. 103.
- Determination of Blood Volume by Carbon Monoxid Method. H. A. Salvesen, New York.—p. 109.
- Determination of Catalase in Blood. M. Bodansky, Lakewood, N. J.—p. 127.
- Action of Furfural and Dextrose on Amino-Acids and Protein Hydrolysates. C. T. Dowell and P. Menaul, Stillwater, Okla.—p. 131.
- *Heat Coagulation of Milk. H. H. Sommer and E. B. Hart, Madison, Wis.—p. 137.
- *Action of Intravenous Injections of Pancreas Emulsions in Experimental Diabetes. I. S. Kleiner, New York.—p. 153.
- Crystalline Guanlylic Acid. P. A. Levene, New York.—p. 171.
- A New Sterol: Mycosterol. T. Ikeguchi, Osaka, Japan.—p. 175.
- Relative Accuracy of Colorimetric and Titrimetric Procedures for Determining Nitrogen as Ammonia. E. R. Allen and B. S. Davison, Wooster, Ohio.—p. 183.
- *Creatinuria in Infants. I. Relation of Creatinuria to Acidosis. Elimination of Ingested Creatine and Creatinine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 199.
- *Id. II. Relation of Protein Intake to Urinary Creatine. J. L. Gamble and S. Goldschmidt, Baltimore.—p. 215.
- Placental Feeding and Purin Metabolism. V. J. Harding and E. G. Young, Montreal, Canada.—p. 227.

Effect of Hemorrhage on Alkaline Reserve.—The blood examined by Buell was obtained without anesthesia from a spurting artery so that it only came in contact with the flask in which it was collected. When the animal remained perfectly quiet throughout the experiment, the drop in alkaline reserve was invariably small. If the animal struggled, the drop in alkaline reserve was much greater, this being noticeable soon after struggling took place. When the animal remained quiet, the maximum drop in alkaline reserve was reached within half an hour after the bleeding was completed. At the end of five hours, and often sooner, the alkaline reserve was near its original value. The total nitrogen content of the blood always fell immediately after hemorrhage. There was a distinct tendency for the urea nitrogen and the nonprotein nitrogen to rise. Although one animal was bled seven times while restricted to a diet of corn and water, the percentage of chlorids in the blood remained constant. On an inadequate diet (corn and water) under conditions of repeated hemorrhage there was a distinct tendency toward regeneration of blood proteins.

Effect of Hemorrhage on Nitrogen Metabolism.—The theory that hemorrhages amounting to 6 c.c. per pound of body weight are not necessarily accompanied by a severe grade of acidosis is supported by Buell's observations.

Antiscorbutic Value of Banana.—The value of the banana as an antiscorbutic in the treatment of experimental scurvy was investigated by Lewis. Guinea-pigs fed on an exclusive diet of bananas were unable to maintain their body weight and died in from twenty to thirty days. Bananas in amounts greater than 25 gm. daily, as supplement to a diet of rolled oats, prevented the onset of scurvy. Such a diet, however, does not protect against scurvy. These experiments suggest that a lower content of the antiscorbutic principle may be sufficient to protect against scurvy if the diet is adequate in its content of the other essential dietary constituents.

Determination of Carbon Monoxid in Blood.—Van Slyke and Salvesen have worked out a gasometric method which permits the determination of the carbon monoxid gasometrically in 2 c.c. of blood in the course of from ten to fifteen minutes. The technic is exactly the same as that previously described by Van Slyke for the determination of oxygen, except that after the gases are extracted the oxygen is absorbed in the apparatus by introducing alkaline pyrogallate solution. The carbon monoxid remains and is measured directly at atmospheric pressure.

Heat Coagulation of Milk.—Sommer and Hart found that the main factor in the heat coagulation of fresh milk is the composition of the milk salts. Apparently, casein requires a definite optimum calcium content for its maximum stability. The calcium content of casein is largely controlled by the magnesium, the citrates and the phosphates present. In fresh milk there is no relation between titratable acidity and heat coagulation. Acid fermentation in milk lowers the coagulating point by changing the reaction and by lowering the citric acid content. However, the titratable acidity of fresh milk samples varies so widely that it is impossible to determine the extent of acid fermentation by titration. Therefore, it is impossible to use the acidity of milk as a criterion of coagulability. Difference in concentration accounts partly for the difference in coagulation of fresh milk samples. Hydrogen ion concentration is not the determining factor in fresh milk coagulation. It is, nevertheless, a factor in fresh milks, and in commercial milks it may become an important factor.

Use of Pancreas Emulsions in Experimental Diabetes.—Diabetic dogs were given intravenous injections of unfiltered water extracts of fresh pancreas, diluted with 0.9 per cent. sodium chlorid solution. The preparation was administered very slowly and usually resulted in a marked decrease in the blood sugar. There was no compensating increase in urinary sugar, but rather a decrease, which may be owing partly to a temporary toxic renal effect. The result is regarded by Kleiner as further evidence for the internal secretion theory of experimental diabetes. The fact that these pancreas emulsions lower blood sugar in experimental diabetes without causing marked toxic effects indicates a possible therapeutic application to human beings, but further study of the problem is necessary.

Creatinuria in Infants.—The subjects of the experiments described by Gamble and Goldschmidt were infants obtained from a well conducted home for foundlings. One of them was a normal infant. The others failed to come up to the specifications for normal infants only in the respect that they were more or less underweight. There was in no instance a history of recent nutritional disturbance, or during the experimental periods, symptoms of malnutrition. They all made moderate or rapid gains in weight on the experimental diets. The diet was in all cases cow's milk. The results obtained show: first, that in the infant small amounts of ingested creatin lead to an increased urinary output; second, there is evidence that in infants the ingested creatin is nearly or completely eliminated during a period of several days. Third, from a comparison with experiments in the literature of the behavior of creatin ingested by adult men with the behavior in the infants studied, the following points are suggested: (a) smaller absolute amounts of ingested

creatin lead to urinary excretion of creatin in infants than is the case with adult males: (b) ingested creatin is more completely excreted by the infant than by the adult male; (c) although the comparison presents greater difficulties of demonstration, there is an indication that, per kilogram of body weight, smaller quantities of ingested creatin lead to excretion of creatin in infants than in adult males.

Id.—On the assumption that preformed creatin in milk modifications is in proportion to the quantity of whey present, the results reported by Gamble and Goldschmidt suggest that the ingestion of creatin is probably a large factor in the creatinuria of infants fed on cow's milk.

Journal of General Physiology, Baltimore

Nov. 20, 1919, 2, No. 2

- Heliotropism of Onchidium: Problem in Analysis of Animal Conduct. W. J. Crozier and L. B. Arey, Chicago.—p. 107.
Combination of Enzyme and Substrate. I. Method for Quantitative Determination of Pepsin. II. Effect of Hydrogen Ion Concentration. J. H. Northrop, New York.—p. 113.
*Labyrinth and Equilibrium. I. Comparison of Effect of Removal of Otolith Organs and of Semicircular Canals. S. S. Maxwell, Woods Hole.—p. 123.
Studies on Bioluminescence. X. Carbon Dioxid Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Princeton.—p. 133.
Studies on Bioluminescence. XI. Heat Production During Luminescence of Cypridina Luciferin. E. N. Harvey, Cleveland.—p. 137.
Isoelectric Points of Proteins in Certain Vegetable Juices. E. J. Cohn, J. Gross and O. C. Johnson, U. S. Army.—p. 145.
*Iodin and the Thyroid. IV. Quantitative Experiments on Iodin Feeding and Metamorphosis. W. W. Swingle, Princeton.—p. 161.
Influence of Concentration of Electrolytes on Electrification and Rate of Diffusion of Water Through Collodion Membranes. J. Loeb, New York.—p. 173.

Otolith Organs and Semicircular Canals.—The results of experiments have convinced Maxwell that the assumption of a sharp differentiation of function between the otolith bearing vestibular portions of the labyrinth and the semicircular canals is not justified by the facts. Between the effects of extirpation of the one and of the other set of structures there is more resemblance than contrast. They certainly reenforce each other, for the reactions produced by either one alone are always slower and less vigorous than when both sets of organs are intact. It would not, however, be safe to affirm that the functions are identical. In one respect a difference is apparent; namely, in the response to rotation in a horizontal plane. If the ampullae are uninjured, compensatory movements occur when the animal is rotated around its dorsoventral axis. Maxwell has never seen this reaction in the absence of the ampullae of the horizontal canals.

Iodin and the Thyroid.—Swingle holds the view that iodine will eventually take rank along with chlorine, phosphorus and other elements essential to the maintenance of normal metabolism, growth, and development. The almost universal occurrence of a thyroid mechanism among the vertebrates for the assimilation and utilization of iodine in minute quantities, points to the conclusion that there is a definite iodine metabolism and that it is necessary for normal functioning.

Journal of Laboratory and Clinical Medicine, St. Louis

November, 1919, 5, No. 2

- *Studies on Irritable Heart: II. Etiology. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 75.
*Id. III. Value of Exercise in Diagnosis and Determination of Fitness of Irritable Heart for Military Service. L. M. Warfield, Milwaukee, and F. M. Smith, Chicago.—p. 81.
*Some Uses of Nonspecific Protein Therapy. W. Boyd, Winnipeg, Canada.—p. 89.
*Incidence of Syphilis Among White and Colored Troops as Indicated by an Analytical Study of Wassermann Results in Over Ten Thousand Tests. W. Levin, Parsons, Kan.—p. 93.
*Tonality of Sphincter at Duodenal End of Common Bile Duct. F. C. Mann, Rochester, Minn.—p. 107.
Further Studies in Plasmogenesis. A. L. Herrera, Mexico City.—p. 110.
Sex Attraction. V. C. Vaughan, Ann Arbor.—p. 114.
A New Double-Way Syringe for Use in Intravenous Medication, Transfusion and Aspiration. H. O. Ruh, Cleveland.—p. 123.
A Device for Centrifugalization at Low Temperatures. W. H. Welker, Chicago.—p. 124.
A New Method for the Preservation of Specimens. J. S. Platzker, U. S. Army.—p. 126.
A Simple Laboratory Shaker. E. J. Warnick, Cleveland.—p. 128.
Quick Method for Making Small Inner Tubes for Dunham's Fermentation Tubes. E. M. Taylor, Le Mans, France.—p. 128.

Studies on Irritable Heart.—The authors prefer the name "irritable heart" to "effort syndrome." Many diseases and convalescence from many other diseases reveal practically the identical syndrome. However, the cases of true irritable heart have one factor not usually found in other cases showing a similar syndrome, that is history dating back years with no definite cause. The victims at times seem to be born with a constitutional inferiority. The least touch of the throttle races the engine. They seem unable to get into gear and carry the load. Exercise under observation is unquestionably the surest and quickest method of sorting the fit from the unfit. Graded exercise is also valuable in diagnosis between cases of irritable heart and pulmonary tuberculosis.

Nonspecific Protein Therapy.—Boyd has resorted to this form of therapy, using typhoid bacilli, in cases in which there is a chronic intoxication from some focus of infection which cannot be located or removed. The toxins may give rise to arthritis, myositis, neuritis, or iritis, depending on the organ whose resistance is below normal, but if the focus can be attached and the toxins neutralized, benefit will follow. In several cases of toxic iritis, infective arthritis and neuroretinitis, favorable results were obtained.

Incidence of Syphilis Among White and Colored Troops.—Based on the ++ reactions alone, Levin found 10.5 per cent. syphilitics among the white and 18.3 per cent. among the colored soldiers. Considering the + reactions in this series also diagnostic, the percentage of syphilitics was 13.08 for the white and 24.1 for the colored soldiers. Estimate is made that the same and probably a higher percentage of syphilitics exists among the white and colored civilians from 21 to 31 years of age.

Sphincter at Duodenal End of Common Bile Duct.—The tone of the sphincter at the duodenal end of the common bile duct was studied by Mann in species of animals possessing a gallbladder and in two species in which the gallbladder is lacking. It was found that the tone of the sphincter under the experimental conditions studied varied considerably in the different animals and various species. In each species possessing a gallbladder, however, the sphincter was usually able to withstand a minimum pressure of from 75 to 100 mm. water. In the species lacking a gallbladder, the sphincter would not withstand pressure, or only pressures of less than 30 mm. water. While anatomic studies have shown that a sphincter is present in each species lacking a gallbladder, the sphincter does not seem to functionate appreciably.

Medical Record, New York

Oct. 11, 1919, 96, No. 15

Necessity for Application of Differential Air Pressure in Thoracic Operations. W. Meyer, New York.—p. 617.

Outlook of Medical Practice. S. S. Sprigge, London, Eng.—p. 622.

*Vaccine as a Prophylactic Against Influenza, and Local Reaction as a Guide to Immunity. H. Greeley, Brooklyn.—p. 624.

Common Colds and Grippe. L. L. Bulkley, New York.—p. 627.

Commotional Shock Caused by Shell Explosions. A. Leri, Paris, France.—p. 628.

Vaccine as a Prophylactic Against Influenza.—Greeley notes his experience from the use of a vaccine comprising seventeen "strains," or cultures of the influenza bacillus (Pfeiffer's) from as many different cases. A large group of nonimmune children, exposed to the infection in an attack, and no further cases of the disease occurred in the institution.

Minnesota Medicine, St. Paul

December, 1919, 2, No. 12

Reconstruction in Medical Education. G. D. Head, Minneapolis.—p. 455.

Intracapsular Extraction of Cataracts. W. L. Benedict, Rochester, Minn.—p. 461.

*Treatment of Burns. G. E. McGeary, Brown's Valley.—p. 567.

Treatment of Burns.—The preparation used by McGeary is of a waxy consistency with a melting point of 120 F. The formula is: resorcinol, 10 parts; oil of eucalyptus, 20 parts; olive oil, 50 parts; petrolatum, 250 parts; paraffin, 670 parts. Melt petrolatum and paraffin together. Dissolve the resor-

cinol in alcohol and add to the petrolatum-paraffin mixture while it is hot, to drive off the alcohol. When cool, add the eucalyptus and olive oil.

Missouri Medical Association Journal, St. Louis

December, 1919, 16, No. 12

Nerve Suture. F. Reder, St. Louis.—p. 399.

*Physiopathology of Intestinal Obstruction. E. P. Hamilton, Kansas City.—p. 402.

*Influenza in Children in St. Louis. J. Zahorsky, St. Louis.—p. 407.

Influenzal Pneumonia at Barnes Hospital from October, 1918, to March 6, 1919. R. L. Murdock and J. R. Dean, St. Louis.—p. 411.

Roentgenologic Findings in Influenza and Pneumonia. C. E. Gilliland, St. Louis.—p. 413.

Treatment of Hemorrhoids. C. Smith, St. Louis.—p. 417.

Care of Eye, Ear, Nose and Throat in General Practice. J. P. McCann, Warrensburg.—p. 419.

*Round Cell Sarcoma of Arm. J. G. Montgomery, Kansas City.—p. 421.

Intestinal Obstruction.—This paper was abstracted in THE JOURNAL, June 28, 1919, p. 1930.

Treatment of Influenza in Children.—In the treatment of influenza in children, Zahorsky favors sodium benzoate, and, as there is a marked tendency to acidosis, he adds potassium citrate, about 4 grains of each drug per dose every two hours. As a rule, quinin was prescribed in the severe cases and seemed to be of service in lowering the temperature. Intramuscular injections of quinin were used in two cases. For the distressing cough, paregoric or codein were occasionally prescribed. In all children showing considerable prostration camphor was used as a stimulant. It was generally prescribed in the form of spirits of camphor, and from 5 to 15 drops diluted with milk were administered several times a day. In a few cases the neutral camphor in oil was given hypodermically. Coffee and tea also were frequently used as stimulants. In one serious case of pneumonia, the principal stimulant was caffeine, given hypodermically. The treatment in these cases was guided by the theory that the child had to produce certain antibodies. For this purpose it needed rest, fresh air, food and light. Zahorsky did not use vaccines.

Round Cell Sarcoma of Arm.—In Montgomery's case several points are emphasized: (1) the sarcoma of the humerus apparently developed after a trauma, and (2) there was also an osteomyelitis of the humerus; (3) a four plus Wassermann was present, but treatment with potassium iodid and mercury had no effect. Therefore, Montgomery concludes that the Wassermann by itself is of no clinical consequence.

New York Medical Journal

Nov. 22, 1919, 110, No. 21

Treatment of Bladder Growths by Electricity. B. A. Thomas, Philadelphia.—p. 833.

*Ambulatory Treatment of Fracture of Neck of Femur. E. H. Bradford, Boston.—p. 835.

Laryngeal Bouginage. H. L. Lynah, New York.—p. 838.

Duty of the Strong to the Weak Poor. E. Souchon, New Orleans.—p. 844.

Hysteria Simulating Brain Tumor. I. S. Wechsler, New York.—p. 845.

Submucous Resection Operation. M. Lubman, New York.—p. 847.

Case of Acute Pulmonary Abscess. Treated with Artificial Pneumothorax. W. D. Tewksbury, Washington, D. C.—p. 849.

Spasmophilic Child. J. Epstein, New York.—p. 851.

Malarial Splenomegaly in France. C. G. Cumston, Geneva, Switzerland.—p. 853.

Ambulatory Treatment of Fracture of Neck of Femur.—The abduction traction apparatus described by Bradford is a modification of the well known Thomas knee splint, to which is added a traction attachment and also a curved padded rod which gives bearing on the descending ramus of the unaffected side and is bent in such a way as to secure proper abduction. The splint was devised and has been long in use at the Boston Children's Hospital and the Massachusetts Hospital School at Canton as an ambulatory apparatus for the treatment of hip disease. Experiments have shown that as great or greater amount of fixation can be secured by this form of apparatus than by a plaster spica. The apparatus is fitted without difficulty and causes but little discomfort, permitting, if properly shaped, the use of the bedpan without removing the spint. As there are no perineal straps which can be loosened, the apparatus, when applied, is reasonably secure. The apparatus is made with no greater difficulty than the ordinary Thomas knee splint.

With properly applied traction the fragments can be kept in correct position and riding upward is prevented. The results obtained by Bradford in the cases treated with the abduction traction splint lead him to recommend this form of treatment in a large number of cases in this type of injury.

Ohio State Medical Journal, Columbus

Dec. 1, 1919, **15**, No. 12

- *Venereal Diseases. H. N. Cole, Cleveland.—p. 738.
- *Fractures of Pelvis and Their Complications. C. E. Caldwell, Cincinnati.—p. 798.
- Advantages of Ether-Oxygen Anesthesia. A. S. McCormick, Akron.—p. 801.
- Importance of Birth and Death Bookkeeping. J. E. Monger, Columbus.—p. 804.
- First Stage in Renal, Vesical and Prostatic Surgery. E. H. Harsh, Cleveland.—p. 807.
- Insanity; Influence on Society and Methods of Control. E. A. North, Cincinnati.—p. 810.

Venereal Disease.—Some of the points stressed by Cole are: Do not use injections at the beginning of a gonorrhea—rather treat it as an acute inflammation. Plenty of water and rest in bed are of great value in acute gonorrhea. Do not give alkalis. Clinical diagnosis of chancres is not enough. Substantiate them with dark field illuminator or Wassermann tests or both. Do not wait for a secondary eruption. A negative Wassermann on the blood in an old case of syphilis is not sufficient. Examine the spinal fluid also. The patient taking treatment for syphilis should have frequent examination of the urine to ward off nephritis.

Fractures of Pelvis and Their Complications.—In cases of pelvic fracture Caldwell has never found any other methods of fixation necessary than can be obtained with well adjusted sand bags and adhesive plaster strapping. Buck's extension may be used in cases of double vertical fracture with overriding of the fragments.

Pennsylvania Med. Journal, Chicago, and Athens, Pa.

November, 1919, **23**, No. 2

- *Community Sanitation as Based on Knowledge of Camp Sanitation. W. G. Turnbull, Cresson.—p. 47.
- *Work of Sanitary Engineer in Pennsylvania Department of Health. C. A. Emerson, Jr., Harrisburg.—p. 49.
- Physical Findings of Pennsylvania Men in Draft. W. G. Murdock, Harrisburg.—p. 51.
- Present Views Concerning Sympathetic Ophthalmia. W. Zentmayer, Philadelphia.—p. 55.
- *Pulse Pressure in Traumatic Cerebral Compression. H. M. Armitage, Chester.—p. 58.
- Surgical Treatment of Carcinoma of Stomach. H. F. Smith, Harrisburg.—p. 61.
- Empyema. J. S. Rodman, Philadelphia.—p. 65.
- *Fractures of Pelvis. S. P. Mengel, Wilkes-Barre.—p. 70.

Community Sanitation as Based on Knowledge of Camp Sanitation.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1387.

Work of Sanitary Engineer in Pennsylvania Department of Health.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1387.

Pulse Pressure in Traumatic Cerebral Compression.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1388.

Fractures of Pelvis.—This paper was abstracted in THE JOURNAL, Nov. 1, 1919, p. 1388.

Southwest Journal of Medicine and Surgery, El Reno

November, 1919, **27**, No. 11

- Surgical Responsibility. J. D. Griffith, Kansas City.—p. 242.

Southwestern Medicine, El Paso, Texas

November, 1919, **3**, No. 11

- Foreign Body Injuries to the Eyes; Localization and Removal of Foreign Bodies. A. Martin and W. W. Watkins, Phoenix, Ariz.—p. 1.
- Splenomyelogenous Leukemia. B. L. Sweet.—p. 19.

Surgery, Gynecology and Obstetrics, Chicago

December, 1919, **29**, No. 6

- *Treatment of Placenta Praevia by Conservative Measures. G. W. Kosmak, New York.—p. 525.
- *Study of Frozen Sections of Pelvis; Description of Operation for Pelvic Prolapse. A. B. Spalding, San Francisco.—p. 529.
- Ovarian Residue. W. P. Graves, Boston.—p. 537.
- Age Distribution and Age Incidence in Five Hundred Cases of Cancer of Uterus. R. Peterson, Ann Arbor.—p. 544.

- *Elective Cesarean Section. E. P. Davis, Philadelphia.—p. 554.
- Relation of Preventive Medicine to Gynecology. H. P. Newman, San Diego.—p. 557.
- *Etiology of Tubal Pregnancy. G. B. Miller, Washington.—p. 560.
- *Toxic Effects of Fibroid Tumors of Uterus. R. R. Huggins, Pittsburgh.—p. 561.
- Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus; to Whom Belongs the Credit? J. R. Goffe, New York.—p. 567.
- *Actinomyces of Both Ovaries and Fallopian Tubes. M. R. Robinson, New York.—p. 569.
- Ruptured Uterus Occurring Twice in Same Patient. E. L. Cornell, Chicago.—p. 574.
- Abruptio Placentae Associated with Spontaneous Rupture of Uterus, Report of Two Cases. L. F. Phancuf, Boston.—p. 575.
- *Temporary Sterilization of Female. A. Turenne, Montevideo, Uruguay.—p. 577.
- Torsion of Spermatid Cord; Report of Two Cases and Review of Literature. V. J. O'Connor, Boston.—p. 580.
- Ureteral Occlusion: Its Relation to Renal Lesions. H. G. Bugbee, New York.—p. 585.
- Congenital Depressions, Sinuses and Cysts Occurring in Sacrococcygeal Region. R. W. McNealy, Chicago.—p. 593.
- Secondary Wound Closure. A. G. Brenizer, Charlotte, N. C.—p. 596.
- Ambulatory Braces in Treatment of Fractures and Injuries of Lower Extremities. H. R. Conn, U. S. Army.—p. 598.
- *Interstitial Transplant of Round Ligaments in Treatment of Selected Cases of Uterine Retroversion. Y. Wardlow, Columbus, Ohio.—p. 603.
- Removal of Machine Gun Bullet from Sacral Canal. K. Bulkley, New York, and H. M. Bergamini, M. C., U. S. Army.—p. 606.
- Some Aids in Technic of Blood Transfusion by Paraffin Tube Method. T. P. Shupe, Cleveland.—p. 608.
- Pre-Operative and Postoperative Treatment to Prevent Recurrence of Stone Following Nephrolithotomy. A. J. Crowell and R. Thompson, Charlotte, N. C.—p. 609.
- Chronic Abscess of Prostate Cured by Intra-Urethral Procedures. P. W. Aschner, New York.—p. 610.
- Coccygodynia. F. C. Yeomans, New York.—p. 614.

Treatment of Placenta Praevia.—This paper was abstracted in THE JOURNAL, July 12, 1919, p. 140.

Operation for Pelvic Prolapse.—This paper was abstracted in THE JOURNAL, July 12, 1919, p. 140.

Elective Cesarean Section.—This paper was abstracted in THE JOURNAL, July 12, 1919, p. 140.

Etiology of Tubal Pregnancy.—Miller believes in a causal relation between the taking of oxytocics, and, perhaps, the other measures commonly employed in the production of any early abortion, and tubal pregnancy.

Toxic Effects of Fibroid Tumors of Uterus.—This paper was abstracted in THE JOURNAL, July 12, 1919, p. 140.

Actinomyces of Both Ovaries.—Robinson cites a case in which an operation was followed by recovery, and presents a tabulation of all the cases of actinomyces of the female genitalia recorded in the literature.

Temporary Sterilization of Female.—Turenne sutures the fimbriated end of the tube into a pocket made in the broad ligament. With this technic, he says, one can be certain of being able later to do a salpingostomy with ease and to adjust the opening to the ovary as in the classic salpingo-ovaropexy.

Interstitial Transplantation of Round Ligaments.—Wardlow describes his method of operation by which the round ligaments are transplanted into the anterior wall of the fundus of the uterus.

U. S. Naval Medical Bulletin, Washington, D. C.

Supplement for the Hospital Corps

October, 1919, No. 11

- Immunity. R. H. Laning, U. S. Navy.—p. 7.
- In Santo Domingo with U. S. Marines. L. C. Haspel, U. S. Navy.—p. 12.
- Molecules, Ions, Atoms, Electrons. C. W. Cuno, Yankton College, S. D.—p. 35.
- Naval Hospital Corpsmen in Action with Marines. J. T. Boone, U. S. Navy.—p. 41.
- Instruction of Hospital Corps Aboard Ship. W. S. Pugh, U. S. Navy.—p. 59.
- Röntgen-Ray Tube; Its Construction and Operation. C. E. Snider, U. S. Navy.—p. 67.
- Impressions of Course of Special Instruction at School for Naval Pharmacists, Hampton Roads, Va. N. L. Saunders, U. S. Navy.—p. 70.
- Sanitary Garbage System. H. W. Elliott, U. S. Navy.—p. 73.
- Sick Bay de Luxe. A. J. Heuschling, U. S. Navy.—p. 74.
- Naval Medical Exhibit—Meeting of the American Medical Association, Atlantic City, June 9-13, 1919. J. T. Cassady, U. S. Naval Reserve Force.—p. 77.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Nov. 29, 1919, 2, No. 3074

- Preventive Treatment in Influenza. T. Horder.—p. 695.
Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 698.
To be cont'd.
*Surgical Treatment of Facial Paralysis. G. Fenwick.—p. 700.
Obstetrics: Past Present and Future. A. Stookes.—p. 701.
*Experiments on Destruction of Lice and Nits. A. Bacot and G. Talbot.—p. 703.
*Radium in Treatment of Tuberculous Adenitis. E. S. Molyneux.—p. 704.
Fatal Cerebral Hemorrhage at Thirty-Four Years of Age. A. B. Fearnley.—p. 706.

Surgical Treatment of Facial Paralysis.—Fenwick reports a case in which one slip of temporal muscle was inserted into the orbicularis palpebrarum and another slip was inserted into the orbicularis oris to restore lost motion to the eyelid and the lip in these cases.

Destruction of Lice and Nits.—The experiments recorded by Bacot and others, in which sodium chlorid, compound solution of cresol, cresol and kerosene were used, showed that the degree of temperature is the important thing in the delousing process, not the chemical.

Radium in Treatment of Tuberculous Adenitis.—Molyneux is convinced that radium is, if properly used, a safe and certain cure, whether for an early or an advanced case of tuberculous glands. He treated between twenty and thirty cases of every grade with radium. In every case the swellings and even old sinuses faded away. Unless there were already sinuses present, no scars were left. The skin in some instances was a little red for a few weeks from the action of the radium, but this always disappeared. In no case was any ulceration caused.

Japan Medical World, Tokyo

Nov. 9, 1919, No. 308

- Migration of Sewing Needles in Human Body. R. Miyata.
Cytologic Study on Internal Secretion of Human Placenta and Decidua. G. Fujimura.
Phosphorus in Urine of Rabbit Treated with Toxins Acting Against Brain Tissues. S. Tsuchiya.
*Injection of Oxygen Under Skin. Y. Ozaki.

Injection of Oxygen Under Skin.—In cases in which oxygen is needed, Ozaki injects from 200 to 500 c.c. subcutaneously in the intrascapular region or the inner side of thighs.

Journal of State Medicine, London

November, 1919, 27, No. 11

- General Principles of Housing and Town Planning in Relation to Health. E. W. Hope.—p. 321.
Housing Problems in Rural Districts. W. G. Savage.—p. 327.
Tuberculosis Problem Under After-War Conditions with Reference to Canada. W. M. Hart.—p. 336.

Journal of Tropical Medicine and Hygiene, London

Nov. 15, 1919, 22, No. 22

- *Simple Method of Mounting and Preserving Insects, Etc. A. Moore.—p. 205.

Simple Method of Mounting and Preserving Insects.—Moore describes a method by means of which each insect is enclosed in a separate, flat, transparent chamber, hermetically sealed, so that destructive agents of all kinds are excluded from gaining entrance and the specimen itself is prevented, as far as possible, from giving off its natural moisture and thus becoming completely shriveled up.

Kitasato Archives of Experimental Medicine, Tokyo

October, 1919, 3, No. 2

- *Leukocytogregarine of Wild Rat; Special Reference to Its Life History. S. Kusama, K. Kasai and R. Kobayashi.—p. 103.
*Bruck's Reaction and Its Comparison with Wassermann's Reaction. M. Terada.—p. 123.
Rat-Bite Fever Spirochete, with a Comparative Study of Human, Wild Rat and Field Vole Strains. S. Kusama, R. Kobayashi and K. Kasai.—p. 131.

- *Experimental Immunologic Tests of Anti-Influenza Serum. S. Umeto, Y. Watanabe and T. Sato.—p. 151.
Experimental Study on Life-History of Sparganum Mansonii Cobbold. T. Okumura.—p. 191.

Leukocytogregarine of Wild Rat.—The parasite described by the authors is believed to be similar to *Leukocytozoon muris*, Balfour, *L. ratti*, *adie*, etc., and possesses many resemblances to *Hepatozoon perniciosum*, Miller. Numerous well made illustrations and a very comprehensive bibliography form a part of this article.

Comparative Value of Bruck and Wassermann Reactions.—One hundred and fifty serums of syphilitic and nonsyphilitic patients, whose cases were clinically diagnosed, were used by Terada in his investigations. Both reactions corresponded in 77.3 per cent. of the cases. In the primary stage of syphilis, Wassermann's reaction was positive in 75 per cent. of the cases; Bruck's reaction was positive in 50 per cent. In the secondary stage of syphilis, the Wassermann was positive in 88 per cent. and the Bruck in 85.5 per cent. of the cases. In the tertiary stage the Wassermann was positive in 86.6 per cent. of the cases, and the Bruck in 80 per cent. of the cases. In cases in which the presence of syphilis was very doubtful, Wassermann's reaction was positive in 39.5 per cent. and Bruck's reaction was positive in 40.1 per cent. In nonsyphilitic cases the former was positive in 12.5 per cent. and the latter in 25 per cent. Bruck's reaction always showed a smaller positive percentage than Wassermann's in each stage of syphilis, while Bruck's reaction always indicated a higher positive percentage than Wassermann's in nonsyphilitic cases. Wassermann's reaction was negative in all cases which had been submitted to arsphenamin injections several times, while Bruck's reaction was positive in two cases among eight. When Bruck's reaction was intensively positive, Wassermann's reaction was strongly positive in many cases, but not always. Owing to the simplicity of the technic and the ease with which Bruck's test can be made, Terada recommends this reaction as an aid in the diagnosis of syphilis when a complicated method, such as Wassermann's cannot be used. However, the decision of a serious question, such as the diagnosis of syphilis, should never depend on Bruck's reaction alone.

Experimental Immunologic Tests of Anti-Influenza Serum.—Influenza immune horse serum was tested by the authors as to its immunologic properties and found to contain certain immune bodies which normal horse serum does not contain. Influenza immune horse serum possesses chiefly antitoxic instead of antibacterial properties. The supernatant fluid of a blood broth culture of influenza bacilli contains soluble toxin, which causes immediate death in experimental animals, while the precipitated bacillary bodies contain the endotoxin which causes hemorrhagic inflammation. Influenza immune horse serum has an antitoxic power against soluble toxin, and very likely also against bacillary toxin. Remarkably satisfactory results have been obtained by the practical application of the serum during the recent influenza epidemic.

Lancet, London

Nov. 29, 1919, 2, No. 5022

- *Physical Defects Among General Male Population Based on Ten Thousand Recruit Examinations. J. D. Comrie.—p. 957.
Treatment of Antral Suppuration. S. Hastings.—p. 960.
Ophthalmic Physicians and Advancement of Ophthalmology. B. D. Batten.—p. 962.
*Value of Complement Fixation Test in Gonococcal Infections. H. B. F. Dixon.—p. 964.
*Late Complications of Gunshot Wounds of Chest. J. B. McDougall.—p. 968.
*Influenza Epidemic. M. H. Smith and M. J. Saunders.—p. 975.
Myalgic Pains. J. M. Taylor.—p. 976.
*Modified Operation for Scrotal Varicocele. S. H. Meaker.—p. 973.

Physical Defects Among Male Population.—Comrie's observations would seem to indicate that physical defects worthy of note are present in four fifths of the adult male population. Many of these develop after the age of 18 years; thus three men out of four are fit for general military service at the age of 18, but only two out of four at the age of 23. Many of the defects are preventable or curable—for example, defective teeth, in 20 per cent., varicose veins in 5 per cent.,

hernia in more than 3 per cent., deformities of limbs in 7 per cent., skin diseases in 3 per cent.

Complement Fixation Test in Gonorrhea.—Eight hundred and forty tests were made by Dixon and Priestley on 625 persons sent from both gonorrhea and syphilis wards. Of 53 strong positives, 90.4 per cent. agreed clinically or in history; of 66 moderate positives, 86.3 per cent. agreed clinically or in history; of 75 weak positives, 72.0 per cent. agreed clinically or in history; of 90 doubtfuls, 58.9 per cent. agreed clinically or in history; of 341 negatives, 26.1 per cent. agreed clinically or in history. Twenty-six and one-tenth per cent. of the negatives were cases of gonorrhea or with a history of gonorrhea. Only one case of known gonorrhea remained negative on second test. The authors emphasize that in diagnosis a positive result is strongly indicative of active gonococcal infection. A single negative is of no value, but a second negative in two to three weeks is strong presumptive evidence of absence of infection. Patients doing well show a positive reaction by the ninth or tenth week, which soon begins to fall, such fall coinciding with clinical improvement. Cases in which a strong positive reaction is maintained over several weeks still have an active focus. The administration of detoxicated vaccine in doses of 1,000 millions or more produces an artificial power of fixing complement, which, however, does not necessarily mean any improvement in the patient's condition. In such cases, the complement fixation test is of no value. The complement fixation test should prove of the greatest value in the diagnosis of obscure pelvic diseases in women, so often the result of gonorrhea.

Gunshot Wounds of Chest.—McDougall's experience differs in no way from that of others who have found that the number of persons developing evidences of tuberculosis after chest wounds is exceedingly small. Out of a total number of 1,782 cases of old chest wounds collected from the literature, definite signs of tuberculosis supervened in five, that is, 0.28 per cent.

Treatment of Influenza.—The medical officers at Portland prison treated all the influenza patients with sodium salicylate, ipecac and aromatic spirits of ammonia during the pyrexial stage and tonics during convalescence. Complications were treated as they arose.

Modified Operation for Scrotal Varicocele.—On the basis that the removal of veins is never necessary for the relief of physical symptoms provided the testicle be adequately suspended, Meaker restricts his efforts almost wholly to suspending and supporting the testis. This is accomplished by shortening or reefing the cremaster so that the top of the testicle is brought to the level of the root of the penis. This is accomplished by eight interrupted sutures of fine catgut, and making no attempt to bring the ligated ends together. The next step is the shortening of the cremaster.

Medical Journal of Australia, Sydney

Nov. 1, 1919, 2, No. 18

After-Effects of Gas Poisoning, with Special Reference to Lung Lesions. S. O. Cowen.—p. 369.

Pulmonary Fibrosis After Gassing. Roentgen-Ray Findings. C. E. Dennis.—p. 372.

*Case of Lymphosarcoma of Both Suprarenals. G. H. Burnell.—p. 373.

Amyotonia Congenita. E. W. Fairfax.—p. 374.

Case of Raynaud's Disease. E. W. Fairfax.—p. 375.

Chronic Ulcers of Stomach and Duodenum. J. Morton.—p. 375.

Case of Lymphosarcoma of Both Suprarenals.—Aside from the fact that both suprarenals were the seat of a tumor, the point of special interest in Burnell's case was the fact that clinically it resembled a case of intussusception, and the patient was operated on for this supposed condition. The tumors were discovered at the necropsy.

National Medical Journal of China, Shanghai

September, 1919, 5, No. 3

Spindle Cell Sarcoma of Arm. J. W. H. Chun, Harbin.—p. 146.

Treatment of Influenza. K. Gronstedt, Stockholm.—p. 153.

Medical Ethics. F. Clark.—p. 156.

Prevention of Bubonic Plague. S. M. Woo.—p. 161.

Temple of Medicine in Peking. W. Lien-Teh.—p. 168.

Photo of a Chinese Mummy in Mongolia. W. Lien-Teh.—p. 171.

Archives Médicales Belges, Brussels

July, 1919, 72, No. 7

*Cyclopean Microphthalmos. G. Van Duyse.—p. 1. Conc'n.

*Cervical Ribs. M. Dubois.—p. 40.

*Treatment of Ulcerating Cicatrix. Derache.—p. 60.

*Testicle Implantation. J. Voncken.—p. 64.

Cyclopean Microphthalmos.—See summary of Van Duyse's article on page 1963 of the last volume.

Cervical Ribs.—Dubois reports three cases, but the disturbances from the supernumerary ribs were not pronounced enough to warrant operative interference. Two of the patients were men of 39 and 60, with pains and impotence in one arm. They had been noted for six months in one case and twenty years in the older man. He was a pianist and could not play for more than half an hour at a time. There was a pair of cervical ribs in this case. The third patient was a woman of 29, and a pair of cervical ribs had induced the complete Claude Bernard-Horner syndrome. The condition was found unaltered when reexamined six years later. The diagnosis of cervical ribs is generally made only by exclusion but roentgenoscopy confirms it. Pains, atrophy, circulatory disturbances and paresthesias should suggest a supernumerary rib, especially when the smaller muscles of the hand are affected; or there may be symptoms suggesting paralysis of the cervical sympathetic. He reviews the literature on operative intervention.

Ulcerating Cicatrix.—Derache describes his success in curing chronic suppuration when a war wound has ulcerated after apparent healing. In seven cases he made incisions around the cicatrix, in sound tissue, cutting down through the subcutaneous layers, and sometimes making a double row of these circumferential incisions. This technic has proved its usefulness for old varicose ulcers.

Testicle Implantation.—Voncken reviews what has been accomplished in this line, citing Lydston's work and Steinach's experimental research, the clinical case reported by Steinach and Lichtenstern, and Rohleder's experimental and clinical experiences with treatment of homosexual perversion. He then describes Voronoff's "painstaking experimental research carried on for more than a year at the Collège de France. He studied on sheep and goats the influence of transplantation of testicle tissue. He found it easy to follow by the external manifestations the changes in the functioning of the internal secretion of the testicles." Castration of a young goat arrested the development of the horns. He conducted three series of experiments: In the first series, testicle implantation in the young castrated animals restored in a short time their normal vigor. The growth of the horns, arrested by the castration, began anew as soon as the implant had grown into intimate connection with the adjacent tissues. In his second series of experiments implantation of testicle tissue in females transformed their character: Gravid goats were delivered normally, but they exhibited marked repulsion for suckling their young and other maternal cares. The testicle implant seemed to stifle all the instincts of maternal affection. In his third set of experiments, he implanted the testicle tissue in rams and goats 14 to 15 years old. This age in these animals corresponds to the human age of 65 to 70. The senile animals, with sluggish reactions, underwent a radical transformation within periods ranging from a few days to three weeks after the implantation of the testicle graft. Voncken emphasizes that the photographs which Voronoff exhibited with his report at the recent Congrès de chirurgie at Paris testified most significantly to the truth of his statements. One of the goat bucks impregnated a female.

"Counter experiences were equally significant," he adds, "removal of the graft reducing the animal to his former senile condition. A new implantation restored anew *les avantages de la jeunesse*. In view of such an ensemble of facts," Voncken comments, "can one doubt further the preponderant influence of the internal secretions of the testicle on senile phenomena?" He adds that Voronoff's histologic study of the grafts showed that the vessels growing into the graft do not reach the center in time to perpetuate its vitality. The center dies and is resorbed; only the periphery

retains its vitality. Hence small grafts take better than large ones. He only succeeded in keeping two alive out of thirty whole testicles implanted, while the partial grafts were constantly successful. A number of small grafts can be implanted under the skin in any part of the body, or in the peritoneal cavity, or under the vaginalis in the scrotum. He found this latter technic the most reliable. Voncken adds that Lydston's experience has given a practical confirmation of the experimental results thus realized in the laboratory. "Organotherapy is invading more and more the different chapters of pathology, and this surgical opotherapy seems to augur a fruitful future which is only the natural sequence of the marvelous results already realized with transfusion of blood." He suggests the possibility that grafts of thyroid tissue might be used in treatment of cretinism. "With any endocrine insufficiency, some harmless surgical intervention might definitely restore the organic balance." (Voronoff's report of improvement in a case of myxedema after implantation of monkey thyroid tissue was summarized in *THE JOURNAL*, Aug. 29, 1914, p. 810.)

Archives Mens. d'Obstétrique et de Gynécologie, Paris

August, 1919, 8, No. 8

The Hemostatic Apparatus of the Human Uterus.—This issue of the *Archives* is accompanied with a set of nineteen fine plates which were omitted by mistake from Keiffer's article on this subject in the issue for June, 1919.

***Hysterectomy with Suppurating Adnexa.** J. L. Faure and L. Bégouin.—p. 417.

System for Care of Prospective and Nursing Mothers at the Creusot Factories. M. Bourret.—p. 448.

***Roentgen Treatment of Uterine Fibroma.** Bécélère.—p. 453.

Hysterectomy with Suppurating Adnexa.—Faure and Bégouin say that each surgeon has his own method, but these methods often conflict with the laws which fifteen years of experience have impressed on them. With virulent lesions, the pelvis scattered with pus pockets, the patient feverish, vaginal hysterectomy may work a miracle when abdominal hysterectomy would be too risky. Under other conditions, abdominal hysterectomy is called for whenever there is bilateral adnexitis rebellious to medical measures, becoming chronic, and causing pain and other disturbances. Even when direct inspection fails to reveal any lesions in tube or ovary on one side, if they are painful, they should be removed with their suppurating mates, unless the patient prefers to take the chance of a second operation later. In the majority of cases, the cervix is not diseased enough to warrant its removal. Leaving the cervix simplifies the hysterectomy materially. The adhesions that form around the suppurating adnexa are high up in the pelvis, and the depths of the pouch of Douglas are generally free, so that planes of cleavage there allow the easiest means of working the adnexa loose. They can also be readily detached from the broad ligament in front of them. The adnexa should thus be attacked from below upward, from the front backward, and from within outward. This not only facilitates detaching the adnexa but there is less danger of injuring the ureters. Section of the cervix is the key to the whole procedure, as this is the lower pole of the fused uterus-adnexa mass. Hemisection of the uterus may be advisable besides, in difficult cases. They give six illustrations showing the various methods to meet varying conditions.

Roentgen Treatment of Uterine Fibromas.—Bécélère concludes from his 400 cases of roentgen-treated uterine fibromas that, aside from certain conditions which imperiously demand surgical intervention, roentgen therapy is applicable to all fibromas of the uterus, without restrictions of any kind. His experience has demonstrated that radiotherapy arrests the development and induces more or less complete retrogression before 40 as well as after 40, with large as well as with small fibromas, and in women with normal menstruation as well as with excessive uterine hemorrhages. He gives weekly exposures with moderate doses. The rays are applied in turn from the right and left of the median line, just above the horizontal ramus of the pubis. If the tumor is very large, more fields may be exposed. Each

exposure is limited to a circular surface 10 cm. in diameter, through a leaded glass cylinder, resting on a thin disk of wood. The rays are filtered through 5 mm. aluminum; the dose for each field is 3 H. units. In 60 per cent. of the cases from 12 to 14 weekly exposures were required; in only six cases from 31 to 50. In the more favorable cases the upper pole of the fibroma shrinks down nearer the pubis by 1 cm. a week. This shrinking in size is usually apparent by the third and sometimes by the second exposure.

Bulletin Médical, Paris

Nov. 22, 1919, 33, No. 52

***Vaccine Therapy of Meningitis.** H. Méry and L. Girard.—p. 691.

Vaccine Therapy of Meningitis.—Méry and Girard report a case of recovery from severe and protracted meningitis with septicemia, otitis of the internal ear and intolerance for the antiserum. They ascribe their success to an autogenous vaccine, all other treatment suspended. They say that this case teaches the wisdom of combining the antiserum with vaccine therapy in all cases of meningitis from the start.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 31, 1919, 43, No. 30

The Sphygmotensiophone for Auscultation of Blood Pressure. C. Vaquez and H. Laubry.—p. 899.

***The Skull in Paget's Disease.** P. Marie and A. Léri.—p. 901.

***Syringomyelia with Paget's Disease.** Idem.—p. 904.

***Hippocratic Fingers.** F. Regnault.—p. 907.

***Local Serotherapy of Gonococcus Rheumatism.** R. Debré and J. Paraf.—p. 908.

***Case of Gonococcus Polyarthrititis.** H. Dufour, and others.—p. 918.

Atypical Spirochete Jaundice. M. Villaret and others.—p. 920.

Paget's Osteitis.—Marie and Léri describe peculiar anomalies found in the skull in persons who have had Paget's disease.

The same writers report further the unexpected discovery of extensive syringomyelia at necropsy in a case of Paget's disease. They theorize to explain this by mechanical factors.

Hippocratic Fingers.—The nails had grown to assume this type during the months an arteriovenous aneurysm had been forming in the upper arm.

Serotherapy of Gonococcus Arthritis.—Debré and Paraf say that the experiences with local serotherapy in meningitis encourage similar local measures in gonococcus arthritis. They found that intra-ocular injection of anti-gonococcus serum promptly cured the lesions induced by direct injection of gonococci into the anterior chamber of the rabbit eye. The account of their experimental anti-gonococcus serotherapy is soon to appear in the *Annales de l'Institut Pasteur*. The results were so encouraging that they injected the antiserum in 15 patients with different forms of recent gonococcus rheumatism. These cases are described in detail; in all the joint disease was severe, and without the local serotherapy would have probably terminated in ankylosis after weeks of fever and pains. In 6 cases the cure was complete in less than eight days; in 8 others before the fifteenth day. In all these 14 the joint functioning was normal. In one case no benefit was derived. The woman was pregnant and in bad general condition.

They punctured the joint and injected the antiserum in place of the evacuated effusion, repeating this every day or second or third day, applying afterward a compressing dressing. In 6 of the cases several joints were affected, and they were all injected with the antiserum at the same time. This local serotherapy has to be supplemented with intramuscular or intravenous injections of the antiserum for the general effect and to ward off involvement of other joints. This local serotherapy is limited to the larger joints, as it is practically impossible to inject the antiserum into a small articulation. They say they have never seen anything to indicate that there are special strains of gonococci.

Differentiation of Gonococcus Arthritis.—Dufour remarks that when it is difficult to tell gonococcus polyarthrititis from acute articular rheumatism, pressure on the intra-articular ends of the bones will decide the question. This causes pain with gonococcus lesions, but not in acute rheumatism. In

three recent cases roentgenograms showed definite changes in the bones, which explained the pain. The multiple arthritis in these cases had developed five and ten days after the first symptoms of gonorrhea or after supposed recovery from gonorrhea. All three recovered completely. The roentgen findings in two cases of acute articular rheumatism failed to reveal any similar changes in the bones.

Journal de Médecine de Bordeaux

Nov. 10, 1919, 90, No. 21

*Dissociation of Pain. A. Le Dantec.—p. 451.

Dissociation of Pain.—Le Dantec's study of the electric sensibility of the normal skin and of the pain in war wounds has revealed an unsuspected dissociation of sensations. The different forms of the electric current elicit different sensory responses, as he explains in detail. This, he says, gives a basis for treatment of pain. The article is concluded in the following issue.

Paris Médical

Nov. 8, 1919, 9, No. 45

*Early Reparative Surgery. P. Descomps.—p. 369.

*Diagnosis of Aortitis. A. Mougeot and Pacaud.—p. 374.

*Clinical Signs of Typhus. A. Porot.—p. 380.

Early Reparative Surgery.—Descomps reports 91 per cent. successes in 451 cases of war wounds treated by primary suture, but he explains how impossible this is as a rule in the wounds of peace times. It is rare that surgical intervention is practicable at once. Retarded primary reunion is therefore the practitioner's reliance for early reparative surgery. This is the more necessary as the prudent physician would prefer to wait for the clinical and bacteriologic findings after excision. Two or three days' delay will permit this, so that retarded primary suture is destined to be the method of choice or necessity. It is now a regular classic method, and every one should be familiar with its indications and technic. He warns to be prodigal in cutting out crushed tissues but to be stingy in débridement. After excision, he cleans the focus with ether; whenever the wound allows he gives it a prolonged bath of ether, repeating this several times, allowing the ether to evaporate each time.

Differential Diagnosis of Aortitis.—Mougeot and Pacaud declare that the actual topography of the descending portion of the thoracic aorta differs from the recently published descriptions in several respects. They give some roentgenograms and arguments to correct the discrepancies.

Typhus.—Porot reiterates that of all infections, typhus seems to be the one with the greatest affinity for the nervous system. The clinical picture is that of an eruptive fever with toxi-infection, striking predominantly the nervous system as the cerebrospinal fluid testifies.

Nov. 22, 1919, 9, No. 47

*Orfila and the Toxicology of Arsenic. Balthazard.—p. 401.

*Postoperative Colic Pains. A. Schwartz.—p. 411.

A Pioneer in Toxicology.—Balthazard gives a historical sketch of the first incumbent of the chair of legal medicine in the Paris medical school, Orfila (of Spanish birth), and a celebrated poisoning case in which he had to invent tests and methods to detect the arsenic in the tissues, and thus laid the foundations for modern toxicology.

Postoperative Colic Pains.—Schwartz has been delighted with his success in warding off and curing postoperative colic pains by applying a bag of ice to the abdomen. He has the ice bag large enough to cover the entire abdomen, and keeps ice in it all the time. The cold seems to prevent the spasms almost inevitable otherwise, while it does not check peristalsis, and the gases escape. He keeps it on generally for about twenty-four hours, applying it first the day after the operation, after the close of the phase of the "absolute silence" of the first few hours.

Presse Médicale, Paris

Nov. 8, 1919, 27, No. 66

*History of Grafts in Man and Animals. Maucclair.—p. 661.

*Epilepsy a Coma, not a Convulsion. P. Hartenberg.—p. 664.

Grafts of Tissues.—Maucclair reviews the history of tissue grafts from the description of rhinoplastics in the Vedas down to Tagliacozzi of Bologna in 1580, who reconstructed the nose from a pedunculated flap from the arm, and others' experiences, bringing his long list down to date. His analysis shows that the question of grafts is still quite complex and is not so simple as it might appear. The surgeon has to be guided by the biologist and not by mere empiricism. Grafts heal in place better when the tissue is taken from consanguineous subjects. Just as in transfusion of blood the blood of donor and recipient should be of the same class, it might be well to select consanguineous homografts. The future of grafting operations opens wonderful vistas, thanks to this symbiosis between the biologist and the surgeon. But, he adds, we must advance only by solidly established facts, and not take our wishes for realities, but wait patiently but hopefully for progress and results.

Epilepsy.—Hartenberg entitles his communication "A New Conception of Epilepsy," as he insists that the main features of the epileptic seizure are not the phenomena of excitation but those resulting from the arrest of the functioning of the brain. This inhibition of the cortical centers dominates the clinical picture, and not the convulsion, as he explains in detail. Experimental research has shown that any sudden inhibition of brain functioning causes unconsciousness first and then muscular movements. All the data exclude spasmophilia as responsible for epilepsy, while they all fit perfectly into the assumption of inhibition of cerebral functioning, with its secondary inevitable muscular play of movements. Sleep arrests the activity of the brain and favors inhibition, and thus explains the frequent predominance of the severer seizures at night. Strychnin tones up the neurons and six epileptics who are taking strychnin have had their seizures remarkably attenuated, some having had no return for one to three months of their weekly seizures. If the seizures were due to primary excitation of the motor centers, as generally assumed, strychnin would increase and aggravate the seizures. But the exact reverse was realized. Unfortunately, he adds, this effect does not last long; the system becomes accustomed to the strychnin and it ceases to influence the seizures. Epilepsy he defines as a paroxysmal abolition of the higher functions of the brain. Not the convulsion but the coma is its essential element.

Nov. 12, 1919, 27, No. 67

Importance of Concussion in the Prognosis of Traumatism of the Skull. P. Lecène and H. Bouttier.—p. 673.

Iodoform Injections in Treatment of Chancereulous Bubo. Hudelo and Rabut.—p. 676.

Nov. 15, 1919, 27, No. 68

*Surgery of the Large Intestine. J. Okinczyc.—p. 681.

*Differentiation of Disease in Stomach and Liver. G. Leven.—p. 684.

*Treatment of Blackwater Fever. Houssiau.—p. 685.

Fixation of Cecum and Colon.—Okinczyc's study of cecopexy and colopexy is accompanied by fourteen illustrations of the preferable technics.

Differentiation of Disease in Stomach and Liver.—Leven comments on the intimate connection between the biliary passages and gallbladder and the region of the pylorus and duodenum, and the close reflex connection between the biliary and the gastric regions. Disease in one is liable to hide under the mask of the other, but differentiation is possible by a course of treatment which will soothe the pains, relax the spasms and abolish the reflexes, and thus leave nothing but the organic lesions if there are such, and enable them to be correctly located. He describes this "therapeutic test" in detail. Absolute repose for body and mind is indispensable, bedrest the first week, dieting, and sodium bromid in the middle of two meals for five days, and then supplemented with bismuth every two hours for twenty days. Moist heat should be applied to the abdomen while in bed, and for five or six hours daily after getting up. The whole course is thus the systematic elimination of everything functional and reflex, and in two, three, or four weeks the previously baffling diagnosis is clear.

Blackwater Fever.—Houssiau noted two distinct types of this disease in his twenty cases. In the hemoglobinuria

developing in the course of very severe malaria, treatment must aim to attenuate the malaria, and quinin must be pushed. With this form there are vomiting, chills, high fever, scanty and pink urine, pulse regular but fast, and heart sounds normal. The other type develops in the course of chronic malaria, from some secondary cause. The urine is black and abundant at first, the pulse and heart sounds weak, and treatment must aim to sustain the heart as the main thing. In both forms, death may occur from anuria. Drugs should not be given by the mouth with anuria. Massive injections of camphorated oil, large enemas, and hot packs are useful. The prognosis is grave but not inevitably fatal. Recovery occurred in one of his cases after fifty hours of anuria.

Nov. 19, 1919, 27, No. 69

*Phenomena of the Type of Anaphylaxis in the Pathogenesis of Epileptic Seizures. P. Pagniez and P. Lieutaud.—p. 693.

*Why Tuberculosis is so Prevalent. F. Mouisset.—p. 694.

*Paradental Cysts. P. Jacques.—p. 696.

Nov. 22, 1919, 27, No. 70

Opening Lecture of Gynecology Course. J. L. Faure.—p. 701.

Universal Automatic Retractor. E. Juvara.—p. 706.

Anaphylaxis as Factor in Epileptic Seizures.—Pagniez and Lieutaud here announce that they have applied to epilepsy the treatment by antianaphylaxis which has proved effectual in treatment of certain cases of urticaria, circumscribed edema, migraine and other phenomena of anaphylaxis of alimentary origin. In persons subject to these, the anaphylactic phenomena are preceded by changes in the blood, the *crise hémoclasique initiale*, as Widal calls it. This testifies to the anaphylactic nature of the disturbances, and this is confirmed by the warding off of the disturbances when a small amount of the substance responsible for the anaphylaxis is ingested before the regular amount is eaten. (Previous communications on the subject have been summarized in these columns, May 24, 1919, p. 1577, and Aug. 16, 1919, p. 562).

Studying epileptic seizures from this standpoint has shown that if certain epileptics eat a little more than usual of a certain food, the number of leukocytes is liable to drop and there may be an actual hemoclastic crisis, and within a few hours a typical seizure. One case is described in detail. The robust epileptic of 18 with the mentality of an illiterate of 14 was tested with a cup of chocolate, 50 gm. after his usual meal, and a seizure followed. Ten days later the experiment was repeated only that forty-five minutes before the meal he took 50 cg. of pulverized chocolate in a cachet, and there were no seizures for several days. The circumstances otherwise the same, he was given then 60 gm. chocolate after a similar meal. A pronounced hemoclastic crisis followed, the leukocytes dropping from 11,000 to 5,400, while the maximal arterial pressure wavered, and during the night there were three seizures, and a total of eight during the following nine days. Then the experiment was repeated, only with preliminary ingestion of 50 cg. of the chocolate. No hemoclastic crisis followed and no seizures during the ensuing week. Similar experiments on normal subjects showed no change in the blood picture except the physiologic digestion leukocytosis. But whenever the young epileptic took the 50 or 60 gm. of chocolate, either with or without the preliminary dose, the leukocyte count showed pronounced fluctuations, the mononuclears increasing. The meal otherwise consisted of 250 gm. of bread, 200 gm. of meat and vegetables and 250 c.c. of linden flower tea. The effect of the antianaphylaxis measures apparently confirms the correctness of the premises. Similar experiments were repeated on a few other epileptics, with analogous results.

Prophylaxis of Tuberculosis.—Mouisset discusses why tuberculosis is more prevalent than any other disease, and reiterates the necessity for and the success in warding it off by keeping the resisting forces up to par. This should be taught from the earliest childhood. He remarks parenthetically that one of the few agreeable surprises of the war was the small proportion with open tuberculosis among the French soldiers returning from imprisonment in Germany. Only 14 per cent. in two groups of 15,000 each, and only 3 or

5 per cent. in an advanced stage. He suggests that the enforced abstention from alcoholic excesses may have had something to do with this.

Paradental Cysts.—Jacques insists that the diagnosis of paradental cyst in the upper jaw is not difficult if the possibility of such a lesion is borne in mind. It is usually mistaken for sinusitis.

Progrès Médical, Paris

Nov. 15, 1919, 34, No. 46

*Sarcoma of the Stomach. M. Loeper.—p. 455.

Technical Points in Mycology. A. Sartory.—p. 458.

Trocar for Lumbar Puncture. P. Delmas.—p. 460.

Sarcoma of the Stomach.—Loeper describes a case of gastric sarcoma in an African soldier. The differential diagnosis of these tumors is based on the hour-glass shape of the stomach and the presence in the stomach contents of round cells which are elements of the sarcoma, but are liable to be mistaken for lymphocytes. Fourteen out of 22 operative cases of sarcoma on the outside of the stomach had survivals up to three years. The outlook is much less favorable when the sarcoma develops inside the stomach or works through the wall into and through the mucosa. Only 4 recoveries are known in 19 operative cases of this type. He expatiates on the importance of cytologic examination in all cases of suspected gastric tumors.

Revue Neurologique, Paris

October, 1919, 26, No. 10

*Progressive Lipodystrophy. L. Boissonnas.—p. 721.

*Genitoglandular Dystrophy. E. Feindel.—p. 752.

*Oneirism: Dream-like Waking Hallucinations. R. Charpentier.—p. 755.

Progressive Lipodystrophy.—Boissonnas summarizes twenty cases from the literature and reports two personal cases. He also summarizes a number of cases in which the atrophy of the adipose tissue was restricted to the face. His conclusion from analysis of all the data is that some lesion of the nervous system seems to be the only plausible explanation for the condition.

Genitoglandular Dystrophy.—Feindel discusses de Souza and de Castro's recent publications on this subject.

Waking Hallucinations.—Charpentier discusses the relations between oneirism and mental confusional states.

Annali d'Igiene, Rome

July 31, 1919, 29, No. 7

Acid-Resisting Bacilli in Animals Succumbing to Inoculation of Tubercle Bacilli. F. Sanfelice.—p. 429.

Glossina Transmitting Trypanosomes to Domestic Animals in Somali District. P. Croveri.—p. 432.

Aug. 31, 1919, 29, No. 8

*Experimental Mutation of Anthrax Bacilli. A. Zironi.—p. 493.

Mutation of Anthrax Bacilli.—Zironi describes research on rats with anthrax bacilli in which the bacilli showed mutation to a type which he calls *Bacterium anthracis colisimile*.

Policlinico, Rome

Sept. 28, 1919, 26, No. 39

*Recent Progress in Syphilitic Internal Diseases. T. Pontano.—p. 1129.
To be cont'd.

*Reduction of Prolapsed Hemorrhoids. F. Grande.—p. 1141.

Oct. 5, 1919, 26, No. 40

Congenital Cystic Lymphangioma. J. Aboularage.—p. 1161.

September, 1919, 26, Medical Section No. 9

Epidemic Influenza. G. Vernoni.—p. 325.

Hypertrophic Cirrhosis of Liver with Extreme Hypertrophy of Spleen. G. Antonelli.—p. 347.

Recent Progress in Knowledge of Internal Syphilitic Disease.—In the course of this long study of recent achievements in this field, Pontano comments on the information sometimes to be derived from the Herxheimer reaction. For example, in one case heart block developed after injection of arsphenamin, revealing an unsuspected localization of the infection. The mitral valves are always spared, but the aortic valves may suffer from the extension of syphilitic aortitis. Romberg says that this latter does not develop until from four to forty-three years after infection. In his

278 cases the average interval was twenty years. Syphilitic aortitis should be suspected, he says, when there are pains and a sensation of oppression back of the sternum, a systolic murmur at the aorta, accentuation of the second aortic sound, and marked relief in the orthodiagram of the left and upper portion of the arch. The pains are of the compression type, and are referred to the upper part of the sternum, radiating to the shoulders and arms, especially to the left, to the neck and the interscapular region. These pains usually are noticed after exercise or copious eating or drinking, but sometimes they come on independently of such factors and even in the night. The modification in the sounds is connected with the changes in the valves and the dilatation of the arch which brings it closer to the wall of the chest. Romberg asserts that accentuation of the systolic murmur may precede the dilatation of the arch as detectable by roentgen examination, and thus may be the first and the only sign of the aortic disease. It should be ausculted, the patient supine, in the first or second intercostal space. The strong second sound differentiates this murmur from that with aortic stenosis in which the second sound is scarcely perceptible. These auscultation findings were manifest in 75 per cent. and the pains in 50 per cent. of his cases. The pains from aortitis may be followed by symptoms of angina pectoris from extension of the process to the mouth of the coronaries. In the early stages of syphilis, Pontano adds, the symptoms from the heart are usually functional and transitory. In 200 soldiers with secondary syphilis, hypacidity was found in 60 per cent., anacidity in 18 and hyperacidity in 17 per cent. Lesions in the liver from any cause are liable to exaggerate the production of antibodies, so that serologic tests may give a positive response even in the absence of syphilis. He says of tabes and general paralysis that experience is confirming more and more the fact that very mild syphilis is particularly liable to be followed by them as it receives only irregular or irrational or no treatment. He reiterates that there is no morbid condition of the central nervous system or the meninges which may not be simulated by syphilis, but the instability of the symptoms, their brief duration and tendency to recurrence are suggestive of the syphilitic nature.

Treatment of Hemorrhoids.—Grande describes an automatic pumping arrangement which drives the blood out of the turgid veins in the hemorrhoids by the action of compressed air. As the blood is expelled, the hemorrhoids return into the bowel. After defecation the patient sits down on a special metal cup with a valve which compresses the air. It is possible that the veins might recover tone, and the tendency to hemorrhoids be abolished in time by this compressed air massage.

Oct. 12, 1919, **26**, No. 41

Best Incision for Submaxillary Adenophlegmon. A. Poggiolini.—p. 1193.

Recent Progress in Certain Internal Syphilitic Diseases. Tommaso Pontano.—p. 1195. Cont'n. See abstract above.

Local Treatment of Anthrax with Pulverized Mercuric Chlorid. C. M. Pertusio.—p. 1204.

Oct. 19, 1919, **26**, No. 42

*Rat-Bite Disease. G. Bergamini.—p. 1225.

September, 1919, **26**, Surgical Section No. 9

*Purpura Simulating Appendicitis. G. Fantozzi.—p. 281.

Surgical Treatment of Displacement of the Uterus and Genital Prolapse. P. Gilberti.—p. 288.

War Wounds of Bones and Joints. R. Bompani.—p. 297. Cont'n.

Rat-Bite Disease.—Bergamini describes a case of sodoku in a soldier free from inherited or acquired taints and intoxications. The Wassermann reaction was positive, and the young man threw off the disease under arsphenamin after the failure of all other measures.

Purpura Simulating Appendicitis.—This case teaches that purpuric patches or edema at the ankle, knee or elbow should warn not to operate without further consideration when intense abdominal pain and fever suggest appendicitis or perforation of the bowel or intussusception. The fever and the location of the intense pain in the boy of 11 simulated appendicitis, but the purpuric patches were discovered in time. The abdominal pains in these cases of peliosis or purpura rheumatica are evidently from hemorrhagic

poussées in the viscera. Even without the petechial exanthem, pains in the joints and edema or even simple rheumatic pains should warn of the necessity for caution in operating, and for symptomatic treatment as for hemophilic states in general.

Crónica Médico-Quirúrgica, Havana

August, 1919, **45**, No. 8

*Ocular Complications of Influenza. F. M. Fernández.—p. 232.

September, 1919, **45**, No. 9

*The Victory Meeting of the A. M. A. F. M. Fernández.—p. 251.

Ocular Complications of Influenza.—Fernández states that among his hundreds of influenza cases he encountered only 6 in which there was iritis from toxic action (2), or the optic nerve and papilla (2), or the angle of filtration (1), were suffering from the same toxic action. In the sixth case the corneal ulcer might have been merely a coincidence, but it might have been the direct work of the influenza infection. The patients were all men between 19 and 40, and 4 recovered under the usual local measures. One man was left with incipient atrophy of the optic nerve, and in another case the choked disk accompanying sinusitis only partially retrogressed.

Victory Meeting of the A. M. A.—The editor-in-chief of the *Crónica* (and also of the *Revista cubana de oftalmología*), Dr. F. M. Fernández, was the official delegate from Cuba to the Atlantic City meeting, and he reproduces the program entire with running comment on many of the communications presented in the various sections. He thus comments on practically all in the section on ophthalmology.

Gaceta de los Hospitales, Mexico, D. F.

Aug. 10, 1919, **2**, No. 6

*Surgery of Goiter. Velázquez Uriarte.—p. 59. Cont'n.

Experiences with Pituitary Treatment in Mexico. E. L. Abogado and others.—p. 62.

Surgery of Goiter.—Velázquez reiterates that medical measures seldom have any influence on goiters except on those of the colloid type, and that goiters are like tumors elsewhere in that they are liable to become malignant any day. He gives an illustrated description of some gratifying operative cases. One patient required thyroid treatment afterward for a time. Vision had been blurred for some months before the operation, but soon returned to normal after this.

Juventud Médica, Guatemala

July, 1919, **18**, No. 194

*Yellow Fever in Guatemala. A. Madrid.—p. 94. To be cont'd.

*Lethargic Encephalitis in Guatemala. F. Arana G.—p. 100.

Influenza in Guatemala. M. Y. Arriola.—p. 104.

Yellow Fever in Guatemala.—Madrid relates the particulars of the recent epidemic of yellow fever and the way in which it was stamped out. He emphasizes the absence of prodromes, and the primary vasoconstriction with congestions, followed by the vasodilatation responsible for the hemorrhages.

Lethargic Encephalitis.—The woman of 36 was supposed at first to be drunk when she was brought to the hospital, and she slept continuously for five days, with slight fever but no other symptoms. Under mercurial treatment, facial paralysis and ptosis developed, and the somnolency became more intense, with mild delirium at times. Lumbar puncture showed the tension and albumin content slightly above normal. The fifteenth day hexamethylenamin was given systematically by the mouth, and 1 gm. of peptone was injected by the vein. This was repeated with one day intervals six times. The reaction was severe, with chill and fever, but by the second injection great improvement was manifest. The twenty-sixth day lumbar puncture still showed high tension but the fluid was otherwise normal. By the fifth or sixth week recovery was complete, with no traces of the disease and no memory of any of the weeks of the somnolency. There had been no bulbar paralysis, vertigo or vomiting at any time. Arana ascribes the favorable outcome in large part to the proteosotherapy.

Medicina Ibero, Madrid

Nov. 1, 1919, 9, No. 104

Cholesterin as Factor in Immunity. T. Morató and G. Villanueva.—p. 77. To be cont'd.

Malignant Pterygium. Jenaro González.—p. 80.

Surgical Tuberculosis. Ricardo Lozano.—p. 82. Begun in No. 103, p. 64.

Observador Médico, Mexico, D. F.

October, 1919, 1, No. 4

*Syphilis as a Factor in the Eye Complications of Typhus. A. Torres Estrada.—p. 62.

Syphilis as Factor in the Eye Complications of Typhus.—Torres has encountered six cases in which typhus was accompanied by ocular lesions. In all they resembled closely the lesions of syphilis. The optic neuritis progressed to blindness in four of the six cases. One of the others had inherited syphilis, and after having been totally blind for a time after the typhus, under mercury and iodid he regained considerable visual acuity in both eyes. Torres witnessed also a number of similar cases of optic neuritis following influenza, and retrogressing likewise under specific treatment.

Prensa Médica Argentina, Buenos Aires

Sept. 30, 1919, 6, No. 12

*Pancreatitis and Tardy Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 113.

*Subacute Intestinal Amebiasis. R. F. Vaccarezza and R. Finochietto.—p. 114.

Euphorbia as Diuretic. Manuel Galdós.—p. 117.

*Headache in Children. R. Argañaraz.—p. 118. Cont'd in No. 13.—p. 130.

Chronic Pancreatitis with Tardy Inherited Syphilis.—The case in a young man here reported is the only one of which the writers could find record in which chronic pancreatitis subsided completely and permanently under treatment for tardy inherited syphilis. The clinical picture did not differ in any respect from that of ordinary sclerosis of the pancreas, but the improvement under specific treatment proved the touchstone of its nature. The young man had been married three years and had a healthy child.

Fatal Amebiasis.—A previously supposedly healthy man of 30 suddenly developed symptoms of coloproctitis with peritonitis the fifteenth day, and death five days later, from necrosis of the cecum and part of the ileum. The ameba in this case had required only twenty days to induce innumerable ulcerations and perforations, with extensive necrosis not only of the bowel but of adjacent muscle.

Headache in Children.—Argañaraz refers to headache from intermittent loss of balance between the sensory and motor functions of the eyes. The trouble is merely from unbalanced growth, as the eyes do not always develop parallel. The position of the eyes in functional balance differs from the position in anatomic balance, that is, in repose. This position in repose is what is often responsible for the headaches in children between 5 and 12, that persist after defects in refraction and muscular balance have been corrected. He explains how it is possible to detect this anomaly and correct it by the use of weak prisms with the base inward. The headaches subside at once when this is done, as he shows by the details of eight typical cases.

Oct. 10, 1919, 6, No. 13

*Treatment of Ankylosis of the Knee. A. Ceballos.—p. 121.

Etiology of Influenza. R. Kraus.—p. 126.

*Access to Bones Through the Calf. R. Finochietto.—p. 129.

Dissociation of Bile Pigments. C. P. Waldorp.—p. 131. Begun in No. 11, p. 109.

Ankylosis of the Knee.—Ceballos reviews the ultimate outcome in seven cases of ankylosis of the knee corrected by an operation before 1917. The ultimate outcome has been so satisfactory that he declares operative correction should be undertaken not only for angular but for straight stiff knees. He prefers a pedunculated flap of aponeurosis to interpose, but has used both free and pedunculated flaps, and the results were equally good with both. Gonococcus ankylosis of the hip joint is usually harder to cure than the traumatic, as the margin of the acetabulum is generally damaged, which favors secondary displacement. A year at least must elapse after the infection, as the vitality of the gonococcus is so

great. He followed Murphy's technic for the knee, and begins at once to apply extension to both legs. Illustrations are given of the device for passive exercise of the suspended joint by the patient himself.

Access from the Rear to the Bones of the Leg.—Finochietto gives an illustrated description of the large U-shaped flap which he turned back on the calf to the knee for access to a huge osteoma. The flap was readily replaced after the tumor had been removed.

Revista Médica del Rosario

October, 1919, 9, No. 4

*Teratomas in the Thorax. D. Staffieri.—p. 255.

School Colonies and Vacation Schools. C. Muniagurria.—p. 260.

*The Ideal for the Fight Against Tuberculosis. A. Martelli.—p. 271.

Teratomas in the Chest.—Staffieri adds another to the less than 100 cases of intrathoracic teratomas on record. They have been found at all ages, but they generally make themselves manifest first during the rapid growth at puberty. In only four of the cases on record was the surgeon able to remove the teratoma completely; the others had to be content with evacuating the contents and draining. Most of the patients were left with a fistula. In some of the nonoperative cases the cyst underwent malignant degeneration, and as there is always danger of fatal compression or other injury from the teratoma, it should always be operated on. In the personal case described the woman of 33 had been having pains back of the right breast for seven years, with a recurring cough and blood-stained expectoration. In the last two years she had often found hairs in the sputum but there had never been fever. The operation confirmed the assumption of a teratoma opening into a bronchus, and recovery was soon complete except for a small fistula.

The Ideal Prophylaxis of Tuberculosis.—An important national conference has recently been held at Rosario to discuss the prophylaxis of tuberculosis. The transactions and resolutions adopted are given in this issue of the *Revista*. Martelli urges the general adoption of vaccination against tuberculosis as the ideal method of prophylaxis, citing Maragliano's experiences with it.

Semana Médica, Buenos Aires

Aug. 21, 1919, 26, No. 34

*Motor Plastic Operations. G. Bosch Arana.—p. 191.

*Voluntary Mutism. F. F. Morixe.—p. 208.

*Syphilitic Hemiplegia. O. E. Adorni.—p. 211.

Fracture of the Elbow. R. A. Rivarola.—p. 216.

Motor Plastic Amputations.—Bosch Arana discusses the general principles and the practical application of means to impart volitional control to artificial limbs by plastic devices. He thinks this vitalization of prostheses has a future beyond anything now anticipated. In this article he does not describe his extensive personal contributions to the subject, reserving this for a later article.

Voluntary Mutism.—The man in question is a docile inmate of the public asylum for the insane. He has persisted for seventeen years in his refusal to speak. This is the first case of prolonged aphasia published in Argentina.

Syphilitic Hemiplegia.—Adorni's patient developed suddenly flaccid paralysis of the right arm and leg and left facial paralysis. The rapid recovery under mercurial treatment confirmed the suspected syphilitic nature of the paralysis.

Aug. 28, 1919, 26, No. 35

Subtilis Infection of Eye. E. B. Demaría.—p. 221.

*Reconstruction of Biliary Passages. E. Nicholson.—p. 223.

*Technic for Partial Colectomy. G. Palacios.—p. 229.

*Infanticide. Antonio D'Alessandro.—p. 231.

*Syphilis in Argentina. Manuel Beatti.—p. 235.

*Teaching of Sexual Hygiene for the Young. L. Bard.—p. 237.

*Commercial Aviation. J. A. López.—p. 239.

Reconstruction of Biliary Passages.—Nicholson reviews recent literature on this subject, and describes a personal case of gallstone disease of five years' standing in which several operations were required to correct conditions.

Megacolon.—Palacios describes two cases with successful partial colectomy.

Infanticide.—D'Alessandro makes a plea for arrangements permitting infants to be clandestinely abandoned without immediate injury to the infant. His text for this arraignment of present conditions is a local news item to the effect that four infant cadavers were found in a single day in the same district of the city.

Syphilis in Argentina.—Beatti protests against the assumption of the extreme prevalence of syphilis. He obtained a positive response in only 13 per cent. of 2,400 applications of the Wassermann test to the blood and spinal fluid.

Sexual Hygiene.—Bard refers to the necessity for lectures in the high schools and colleges on the prophylaxis of venereal diseases, as these diseases are so often acquired between 16 and 20. The lectures should be given preferably by the professor of anatomy. The task cannot be left to the parents; for one reason, among the many, because the parents are themselves too ignorant.

Commercial Aviation.—In this eighth instalment of his study of the psychophysiology of the aviator, López discusses the difference between conditions in war and in commercial aviation. He emphasizes the necessity for strict medical tests for commercial aviation or accidents will destroy the public's confidence in it.

Siglo Médico, Madrid

Nov. 1, 1919, 66, No. 3438

- The Medicolegal Conception of Deformity. Jesús Canseco.—p. 929.
*Serodiagnosis of Typhus. J. Blanco and M. Tapia.—p. 931.
*Coagulation Time as Element for the Prognosis. M. Corachán and F. Gallart Mones.—p. 935. Conc'n in No. 3439, p. 960.

Serodiagnosis of Typhus.—Blanco and Tapia obtained pronounced agglutination with the proteus X in thirty-three cases of typhus, in one case at 1:1,000 as early as the third day. In one case the agglutination at 1:1,000 continued up to a month after defervescence.

Coagulation Time and the Prognosis.—Corachán and Gallart comment on the importance of recording the coagulation time of the blood before operating, to be warned of any tendency to hemorrhage or to thrombosis. A family tendency to hemophilia or to thrombosis—a history of phlegmasia alba, of phlebitis, etc., in any member of the family—is also instructive, but the coagulation time of the patient's blood is more certain. They use Bloch's citrated blood-calcium chlorid technic, and in 56 cases thus tested they found that coagulation occurred abnormally fast in 2 and abnormally slow in 18. Ingestion of 3 or 4 gm. of calcium chlorid daily before the operation brought the coagulation time up to normal. When this was not done the operative and postoperative losses of blood confirmed the warning from the coagulation index. They found a normal coagulation index in their cases of venous thrombosis; this suggests that other factors, such as infection, cooperate in thrombosis. In 2 cases of gangrene of the feet, no modification of the abnormally slow coagulation could be realized, even with systematic calcium chlorid and gelatin treatment.

Nov. 8, 1919, 66, No. 3439

- *Intraspinal Treatment of General Paralysis. G. R. Lafora.—p. 953.

Intraspinal Treatment of General Paralysis.—Lafora remarks that Spain is one of the countries where intraspinal treatment of syphilitic disease of the central nervous system has made recently the greatest progress, and vast experience has been acquired during these years of the world war. His latest report on the subject was recently summarized in these columns Dec. 6, 1919, p. 1808.

Hospitalstidende, Copenhagen

Oct. 15, 1919, 62, No. 42

Influenza in Danish Army. L. Ammentorp.—p. 1161.

Oct. 22, 1919, 62, No. 43

- *Vaccine Treatment of Gonorrhea. H. Boas and O. Thomsen.—p. 1185.
Blood Platelet Extract for Hemorrhage. E. Als.—p. 1190.

Oct. 29, 1919, 62, No. 44

- *Gas Phlegmon in Femur. H. C. Hall and M. Kristensen.—p. 1209.

Vaccine Treatment of Gonorrhea.—Boas and Thomsen tabulate the results of treating recent uncomplicated gonor-

rhea in men with a vaccine made of twenty-four hours' cultures of several strains of gonococci on ascites-agar plates in 0.9 per cent. saline. In 202 cases not treated with the vaccine, 45 per cent. developed complications, but only 19 per cent. developed complications in 126 treated with the vaccine. The outcome was in reality even more favorable than this, as in 7 of the 23 complication cases a vaccine had been used which proved later to have been defective. The complications in the vaccine cases were very mild; there was prostatitis only in 3, while in the nonvaccine cases prostatitis formed half of the 90 complication cases.

Gas Phlegmon in Femur.—Both the Welch bacillus and *Bacillus phlegmonis emphysematosae* were cultivated from the phlegmon in the femur in the two young men. Infection had presumably occurred from the needle during an injection of caffein.

Hygiea, Stockholm

Oct. 16, 1919, 81, No. 19

Medical Impressions of the United States. Anderson-Tesch.—p. 785.

Oct. 31, 1919, 81, No. 20

- *Indications for Prostatectomy. Torsten Rietz.—p. 837.
Hypernephroma in Center of Kidney. Nils Stenström.—p. 843.

Indications for Prostatectomy.—Rietz states that the mortality with prostatectomy in Sweden still averages 11 or 12 per cent. even with the best surgeons. In England and America, he adds, the mortality is lower, but in some of the German clinics it is still higher. Analysis of some of the fatal cases showed pathologic conditions in the kidneys in an unexpectedly large proportion, and probably many of the cases recorded as heart disease may have been primarily disease of the kidneys. These facts suggest the importance of ascertaining the functional capacity of the kidneys before attempting any operation on the prostate, and he has been systematically investigating this since the beginning of 1918. He has now a record of 18 cases thus investigated by himself and 9 by Kjellgren—a total of 27 cases, and the outcome has brilliantly confirmed the information thus derived. He selected the water test as the simplest and a very reliable means for functional diagnosis. The patient drinks 1,000 c.c. of water, fasting, at 8 a. m. and the urine is collected at hourly intervals till 12 and then at 3, 6 and 9 p. m. and the night urine till 8 a. m. With this systematic research he found that the patients fell naturally into five groups, as he explains in detail, and the outcome of the cases confirmed the accuracy of the data thus acquired.

Ugeskrift for Læger, Copenhagen

Nov. 13, 1919, 81, No. 46

- *Significance of Bile Pigment in the Serum. E. Meulengracht.—p. 1785.

Clinical Significance of Bile Pigment in the Serum.—Meulengracht reports extensive research and experience in two hospitals with colorimetric estimation of the bilirubin in the blood serum. The bilirubin has to reach a certain level in the serum before it passes into the tissues, and a still higher level before it passes into the urine. There are thus two thresholds for bilirubin. The amount of dilution necessary to bring the blood serum to the same tint as that of a 1:10,000 solution of potassium bichromate or a 1:300 solution of ferric chlorid is the colorimeter gage. He draws 3 c.c. of blood into a Wassermann glass containing a few drops of a 20 per cent. solution of sodium citrate. Only 1 c.c. of the serum is taken for the test. The dilution figure may range from 10 or 20, with slight jaundice, to 200 or 300 in the severer cases. Bilirubin is found in the blood as febrile or toxic bilirubinemia, and as congestion, hemolysis or obstruction bilirubinemia. Examination of the blood for bilirubin is thus an important aid in detecting slight degrees of jaundice and thus sustaining the diagnosis of liver disease in dubious cases, especially with cholelithiasis, hemolytic and pernicious anemia and certain cases of insufficiency of the heart. Examination for urobilinuria supplements but cannot take the place of examination for bilirubinemia. He describes in detail and compares the findings in forty healthy persons, and large numbers of others with various forms of liver and heart disease.

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THE PATIENT HIMSELF*

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CHICAGO

Among the vices of advancing years are carping criticism, garrulity and needless admonition. To all of these I plead guilty and so can only beg your indulgence while I say a few things that I think should be said, knowing that I say them poorly and that I add nothing to our store of knowledge.

My theme is that much neglected individual, the patient himself. Concerning his organs and their functions, we have numberless tomes. Concerning the diseases that attack his parts, we have whole libraries. Concerning the various ways of cutting him open and sewing him up, there are several six-foot shelves. For the manifold instruments, machines and appliances of our armamentarium, an extensive congeries of industries is in constant operation. Indeed, some of us are so used to practicing medicine by machinery that the cortical cell bids fair to shrink into sterile desuetude. But of the patient himself—the man, the woman, the child—relatively little is thought or written.

THE PATIENT ABOVE THE EYEBROWS

What do I mean by the patient himself? I mean what we mean when we speak of our friend, our enemy, our son, our daughter. We like a man because he is sensible, kind or entertaining; dislike him because he is selfish, irritable or pessimistic. So do we admire or despise because of certain mental, not physical, qualities: traits that reside above the eyebrows. Our attitude depends on the individual's personality: the biggest thing to us and to him. It is more important than his kidneys and his liver, and its disorders are as momentous to him and to society as is disease of his organs. His personality is what he is—the man himself; and he is the sum of all his tendencies and experiences; his desires, aversions, affections, hates, passions, inhibitions, appetites, reflections and knowledge. The tendencies are few and simple, the experiences myriad. And a little thought shows that most of this experience has been in the form of conflicts. From the beginning, life is a conflict: an effort to live and be happy—that is to say, an effort to adapt ourselves to the conditions under which we must live. The struggle between what we consciously or unconsciously wish to do, and what the present state of society requires us to do begins in infancy and never

stops. Very early the normal child learns that certain perfectly natural functions may not be fulfilled in a completely natural way. He may not urinate in the parlor nor appropriate anything he happens to see. As we grow older these conflicts become more complex and more acute. Some of us come out of them pretty much to the satisfaction of ourselves and our neighbors. We are the happy, the well and the successful. Some of us are unable to make the adjustment. We, then, are the unhappy, the ill or the unsuccessful. Now, as every one of us has these conflicts and has them all the time, it does not take much perspicacity to see that there are many defeats. Occasionally one comes out of the conflict a thief, a tramp, a pauper, an invalid. Perhaps one does not think of petty larceny, constipation and eye strain in the same terms; but they may be equally due to social inadaptability. Each is the reaction to a difficult situation.

THE RESULTS OF MALADAPTATION

The whole question of health is one of adaptation or adaptability. We have typhoid fever either because individually we are still vulnerable to the typhoid germ, or because as a community we have failed successfully to combat it. Some of us have neuroses or psychoses because we are unable successfully to harmonize with our environment—and for no other reason. Often this fact is overlooked. What has social inadequacy to do with the practice of medicine? A great deal, because it starts a multiplicity of symptoms which the patient expects the physician to relieve. To speak of the hyperacidity and gastric distress of financial insufficiency, the dysmenorrhea of domestic disharmony and the tachycardia of industrial futility may sound incongruous, but sometimes that is what they are.

An easy approach to consideration of the neuroses as a result of maladaptation, that is to say, as the outcome of a conflict, is by way of the war neuroses because there the conflict is so apparent. A war neurosis, grossly miscalled shell shock, is a means of, let us say, getting out of the front line trenches. The soldier can no longer stand the bursting shells, the falling parapets, the horrible sights and the imminent danger of death. But army discipline and morale, personal honor, pride, ideals make running away impossible. A neurosis makes it possible. So does loss of an arm. If he loses an arm, the soldier doesn't have a neurosis. A neurosis is no fun, but it is a great deal better than the trenches.

Peace neuroses are just the same. They are a way out of trouble or around an obstacle; a way selected more or less unconsciously. If one cannot remove an obstacle from his path and cannot surmount it,

* Presidential address, read before the Institute of Medicine of Chicago.

he goes around. Perhaps he *can* push it away, or *can* surmount it; but he *prefers* to go around. For our patients, the way around is often insomnia, "nervous breakdown," backache, dysmenorrhea, asthenopia, indigestion, headache, abdominal pain, dyspareunia, impotence, exhaustion, palpitation and many other things for which medicines are given and operations performed.

As already indicated, a neurosis is by no means the only avenue of escape from an intolerable or uncomfortable situation. Some ways are much simpler. The man who, when tired of his job and dissatisfied with his wife, stops work, gets drunk and beats up his connubial partner, does not develop a neurosis from those particular troubles. He doesn't have to. But he is just the one to get a lame back or sore feet in the army, where he can't escape by the simpler way.

An intelligent and pleasing woman was dissatisfied with her town and her husband. She referred to the former as "a piffling little place," and said of the latter, "He gives me no satisfaction." What was the solution? Recently she spent four months in New York, and with bright eyes and a pleased smile said, "You bet I had satisfaction there." Last winter she visited Los Angeles with the same gratification. Did she have a neurosis? Why should she? There was absolutely no conflict. She was as simple and direct as a child.

Contrast the following:

A woman of 34 years complained of daily headache, poor sleep, ready exhaustion, some dyspnea on exertion, poor appetite and constipation. With considerable pains, I ascertained that she too was dissatisfied with her husband and with her social and financial position. She could not adjust herself to conditions as they were, and she could not change them. Her ideals and training did not allow the simple means of escape adopted by the other. Instead of deliberately going to New York and California, she subconsciously went to headache and insomnia.

NEUROSIS AS DEFENSE REACTION

In short, the neurotic is an individual in trouble with no easy and direct means of escape. A neurosis is a defense reaction, a means of escape; a psychologic dugout in which to hide. That the difficulty may be imaginary, the patient fleeing from a ghost, does not alter the situation. His efforts to adjust his appetites and desires to the demands of convention, society, the herd are the same as ours. He attempts to dodge defeat and to shift responsibility for lack of success as do we whom a lenient society calls normal. Because he played so poorly, an irascible golfer first threw his bag of clubs and then his caddie into the creek. Very, very often the nervously inadequate person unconsciously shifts the responsibility to some bodily trouble, when he naturally comes into the physician's domain. And too, too often the physician takes his complaint at its face value. Sometimes the literalness of physicians is equal to that of religious fanatics. Once I examined a justly celebrated clergyman who was in a state of profound delusional melancholia, in consequence of which he falsely accused himself of sundry grave sins. Having recovered, he was tried by a church tribunal and dismissed from the ministry because of these self accusations of a disordered mind. Such superficiality and narrowness makes a physician smile. But compare the following:

A young man brought to me his wife, who at various medical hands had received sundry powders and potions for insomnia, nervousness and loss of appetite. After a bit of

questioning, I sent the husband on an errand. As the door closed behind him I said, "Now, quick, tell me what's the matter." The startled wife then told me that their young priest, a close friend of the husband, was almost daily assailing her virtue, and that she was quite distracted between fear that she might yield and fear to tell her husband.

And the following:

A woman of 50 years was having a prolonged rest cure because of general nervousness, mental depression, "exhaustion," and insomnia. She appeared to be very weak, and walked across the room with difficulty. A bit of direct questioning revealed that she was intensely afraid of a stroke, and that this fear was based on tinnitus, which she expressed as a "noise in the head." This to her meant cerebral calamity: a stroke, paralysis, death. When the simple situation was explained to her she got up and went to the coast of Maine for a holiday.

Would these medical examples make an ecclesiastic smile? The following incident is not unusual:

Many years ago, only with uncomfortable persistence did I dissuade a well-known surgeon (since deceased) from performing a gastro-enterostomy on his wife. He insisted that she never could be well until operated on. But I knew of grave emotional stress of which he was partly ignorant and which he partly ignored. With the mental adjustment which came about in a couple of years, all abdominal symptoms disappeared, and she has continued well.

How many of us constantly keep in mind that we, the acme of civilization and culture, have every instinct and passion of the caveman? Are we always alert for the ever present emotional-ideational-intellectual conflict? And do we recognize its importance? To repeat: The product of these conflicts is WE—the patient himself. And in the vast and intricate complexity of modern life, the name of the conflicts is legion. Neurotics are just as different as physicians, and for as many different reasons. Consequently, investigation in many directions is necessary. Here laziness, carelessness and false modesty on the part of the physician have no place. I should not like to say, even if I knew, how often to my question "Did you tell all this to all these other doctors?" the reply has been "No, they didn't ask me."

THE SEXUAL ELEMENT

And here I venture a direct word on sex matters. Without following the self-styled psychoanalysts in tracing practically all psychoneuroses to a sexual origin, without even discussing their tenets, I wish definitely to state that something relating to matters sexual has a great deal to do with starting many nervous disorders. Aside from the demonstration of experience, a little reflection will show that this is reasonable. In the present state of society, practically every individual between early childhood and presenility has sexual problems and conflicts. In the solution of the problems and disposition of the conflicts, generally he has the assistance of neither publicity nor knowledge. On the contrary, he is handicapped by ignorance, superstition and isolation. All the conditions are there for the development of fear, shame, remorse, guilt, resentment, a feeling of inadequacy or impotence; the most painful emotions, plus secretiveness. Who would not escape from them by way of a neurosis, very distressing but with none of the tragedy of the other forms of suffering? Thousands of soldiers escaped from the shell torn trenches, that is, from their intolerable

emotions, by way of a psychoneurosis. Millions of us have tried to escape from other tearing emotions by means of so-called functional nervous disorders. Hence, whatever our decision as to the psychology of sex, in the case of the individual patient there is but one answer: sufficient investigation, proper instruction, and counsel based on adequate understanding.

But I do venture to add that, in my opinion, to express love of power, money and ease; fear of pain and death; the satisfaction of food, delights of the eye and ear; the disappointment of failure, the pleasure of work well done, all in terms of sex—howsoever sublimated—is to express a narrow conception of *Homo sapiens*. And I also believe that in the vast majority of cases, the exhaustive and intricate corkscrewing methods of the freudians are unnecessary. Sometimes they are harmful.

DIAGNOSES THAT FALL SHORT

Our medical affinity seems to be the concrete and tangible. Organic abnormality is the most facile explanation of disorder. Given almost any complaint, if the patient reveals undoubted organic disease, our tendency is to stop there. When shall we learn that a prolapsed kidney or stomach may be as good as normal, a valvular lesion innocuous, a urethral stricture of small importance, a deviated septum symptomless, and a torn cervix not even a cosmetic offense? But prolonged fear, disappointment, resentment, anxiety, regret, perplexity are never symptomless. The physician's wife, mentioned above, undoubtedly had enteroptosis; but that did not cause the trouble. The following is a common type:

A middle-aged woman had been operated on for ruptured perineum, rectocele, and "ulcer of the womb"; later, for hemorrhoids and laceration of the cervix. Still later, she had a curettage, and then the ovaries and tubes were taken out. Finally a hernia, a relic of one of the previous operations, was repaired.

No very exhaustive investigation was required to show that this patient never had been physically disabled, but that she always had been intellectually and temperamentally absolutely unequal to life's demands. Each operation was only an additional urge into physical invalidism as an escape from the toil and responsibilities that fell to her lot. That such treatment tends to perpetuate the trouble is obvious. If dysmenorrhea and pelvic pain are really a recourse from laborious housekeeping, ventrifixation fixes the mental attitude of the patient. And the next operation for adhesions makes her more adherent to her disability.

When a woman dates her symptoms from marriage or childbirth, it behooves the physician to look for the presence of discontent, unhappiness and fear. A diagnosis of pelvic disease may have to be changed to mother-in-law, which often means a more or less inadequate daughter-in-law. When a man is disabled by an organic disease or abnormality that apparently doesn't measure up to the disability, one should take the precaution to look for the neurosis which really makes the trouble. A simple arthritis, with which some people would happily limp through life, makes others useless. Why? Because there is something back of the arthritis; something the matter with the patient himself. While the clinical picture may be made up of symptoms strictly organic plus others purely functional, the latter may be by far the more important, even though the former are more salient.

EFFECTS OF FEAR

Elsewhere,¹ I have tried to emphasize the importance of recognizing fear. One might think that if a patient were afraid he would know it and tell of it. Neither may be the case. That one may be sick from fear and not be aware that he is afraid is certainly true. And "to deny fear seems to be almost as instinctive as that emotion itself."¹ That is to say, the physician must not wait for the avowal: he must dig it out. This is especially true of that exceedingly common apprehension, the fear of "losing the mind." Patients will carry this fear for years and never mention it. A very common way of consciously or unconsciously dissembling fear is to complain of the symptom which is the basis or the result of the particular fear. The patient bitterly complains of headache. But the real distress is not the headache (often it isn't a pain at all), but the idea that the headache means insanity or a stroke. Abdominal distress may be trifling, but it is disabling because to the patient it signifies cancer. But he doesn't say so. He hardly knows that it is so. He doesn't wish constantly to be afraid of insanity or cancer; he prefers to have headache or nausea. How can one successfully treat such a headache or stomachache without becoming acquainted with the patient himself?

FREQUENCY OF MILD MELANCHOLIA

One other very practical aspect of the real patient, the patient above the eyebrows, I must at least mention: the frequency of unrecognized mild melancholia. Instinctively, these patients hide their feelings of uselessness and hopelessness, their self reproach and fear of insanity. They complain of what to them seems to be the cause of their ill feeling, and generally this is some bodily complaint. Headache, insomnia, indigestion, constipation, biliousness; exhaustion from overwork, worry or sexual irregularities; leukorrhea, loss of memory and pelvic distress are among the more common. And the literal physician overlooks the disorder of the personality. The result is useless or harmful treatment. This is bad enough. What is worse, the patient is given every chance to commit suicide—which he rather frequently does. In Chicago there are more than 600 suicides a year, and I am quite sure that fully 400 of these are due to melancholia—every one of them preventable.

EFFECT OF DISTURBING EXPERIENCES

The relations of past experience to present conduct are most complex. Our feelings and behavior today are the result of myriad experiences, most of them forgotten, and still more not in our awareness at any given time. No man can trace all the steps that have led him to be a Republican or to dislike a certain person. Why does Miss X delight in ice cream and abominate pork chops? It didn't just happen. There are reasons. Of four men in trouble one prays, one gets drunk, one has a fit and one has a headache. Why? That is for us to find out. Generally it can be done. Not always.

Clinically, the relation of a pathogenic experience to consciousness is generally one of two, with no definite line of division. First, the patient remembers perfectly well the (generally unpleasant) experience, but has no idea that it has anything to do with his

1. Patrick, H. T.: The Factor of Fear in Nervous Cases, J. A. M. A. 67: 180 (July 15) 1916.

present trouble. Second, the disturbing episode has been quite forgotten and is brought back into consciousness only by some unusual stimulus or mental state. Obviously, it may happen that we cannot bring it back at all. To illustrate the first type:

A young traveling man was unable to eat in restaurants because of intense feeling of prostration and oppression, palpitation, etc. He had not in any degree forgotten that a few months before consulting me he had been taken very ill while dining in a restaurant, had nearly fainted and had liberally distributed vomitus over the floor before he could get out. But apparently a connection between the causative disagreeable episode and the neurosis never had occurred to him, and information of the illness was not volunteered. It was elicited by leading questions.

Another example:

A middle-aged, happily married woman complained of nervousness, insomnia, mental depression, intense dislike of social intercourse, even with good friends, and intense agoraphobia. Painstaking inquiry for more than two hours, evidently with the cooperation of the patient, failed to elicit a cause. Only after the analysis of two dreams by Dr. Lewis J. Pollock, my assistant at that time, did we learn of events in her childhood and youth causing poignant shame and self reproach that were clearly the cause of her disorder. These experiences she had not forgotten; but their relation to her present complaints had never occurred to her, the subject was distasteful, and instinctively, scarcely deliberately, she had suppressed the facts.

An example of the second type:

A young married woman had so-called vaginismus to a degree entirely preventing intercourse. No local cause could be found. The patient neither feared nor objected to the nuptial embrace; indeed, she was most anxious to be a complete wife and an early mother. It was only after many questions and the awakening of many associations that she recalled two not very striking experiences when she was about 11 years old. Aside from temperament, these were the prime cause of her disorder; but apparently for years she had not consciously thought of them.

NEED OF APPROPRIATE TREATMENT

A good many years ago, Möbius described akinesia algera, paralysis from pain; the patient does not move because it hurts to move. When we come to therapeutics for the patient himself, many of us have a sort of amblyopia algera. We do not see because it is uncomfortable to see. It is much more comfortable to say, "nothing to it," "just a nervous crank" and do nothing, than it is to realize that here is a pathologic condition, obscure, maybe complex, that must be laboriously worked out. So we naturally go blind, see nothing and do nothing. Probably every physician makes an effort to regulate the bowels. How many of us make an effort to regulate emotional and intellectual movements? But intestinal stasis is vastly to be preferred to intellectual stagnation: so-called autointoxication is not half so lethal as disintegrating emotions.

To state it another way, we must first have a just conception of the nature of the trouble and then institute *appropriate* treatment. Nowadays few ovaries are removed for dizziness and indigestion, but the "rest cure" is applied about as heedlessly as was formerly oophorectomy. Confinement to bed, isolation, forced feeding and massage for perturbations of the personality may be compared to a linseed poultice for pain in the belly. Occasionally the cataplasm suffices, but treatment of the cause is to be preferred. Equally, we should treat the cause of neurotic manifestations. Who would prescribe a pill for vagrancy or a powder

for prostitution? The tramp and the prostitute are recognized as defective, unadaptable to society as now constituted, except on the underworld level. The psychasthenic (nearly always mis-called neurasthenic), the neurotic, the psychotic is a rather similar product. Unadapted to the upper strata of social efficiency, he gravitates to the underworld level of pain, prostration and dyspepsia: the realm of consultation rooms, hospitals and sanatoriums. But I hasten to add that when properly adjusted to his environment, the neurotic may be one of the most efficient, valuable and delightful members of society.

A fine young woman was about to decline marriage because handicapped, even disabled, by what she did not recognize as phobias. For years she had been unable to go down town except in a carriage, and then only for a few minutes. To go alone to a nearby market was out of the question. Deeply religious, she could not go to church alone, and when accompanied, she could sit only near the exit. There were other phobias. A short course of training and reeducation removed the lot, and for about ten years she has been an ideal wife and mother.

A fine young chap of 22, because hypersensitive and hyper-conscientious, became depressed and worried over the usual sexual problems of youth to the extent of total disability. The situation was explained to him: in a proper environment, he was carefully guided and was gradually led back to normal activities. In the spring of 1917, he entered the army and served brilliantly throughout the war.

An unmarried woman of 29, doing office work, for ten years had had attacks of dyspnea and palpitation, great weakness and insomnia. Although she positively and honestly denied that she was afraid of anything, exact questioning showed that she had several intense phobias. She really was ill and had been for ten years. But the trouble was not the heart muscle, it was lack of adjustment to her job, her associations and necessary conditions of living. Fortunately, she married happily, and her bodily complaints all disappeared.

A woman of 32, of the intellectual type, had been an invalid for years. Accurately to describe her symptoms would require a descriptive catalogue. They included "stomach trouble," "rectal trouble," severe headaches, ready exhaustion, tenderness at places over the abdomen and in the pelvis, loss of weight and anemia. She certainly had enteroptosis, with the right kidney far down. One of the greatest surgeons of Chicago thought it best to take out the appendix, fasten up the kidney, ventrifix and curet the uterus. Did all this help? Not a bit. She was sent East for a prolonged rest cure under the greatest master of that procedure, with the same result. She remained the same practically useless martyr, a burden to herself and the despair of her family. Finally, she was induced to take up an active, intellectual and taxing occupation in an environment that fitted her. Presto! The baffling organic disorders, the profound prostration, the disabling pains evaporated. She had found her place, and she has continued to be a busy, exceedingly useful and happy woman.

The following case shows the obverse mechanism:

A young man of ample means, shy and a bit effeminate, retired to a small farm where he raised a few fancy sheep and experimented in crossing flowers—all to his complete satisfaction, and with perfect health. Circumstances forced him into business and the hated city. He developed rebellious stomach, insomnia and headache, lost considerable weight and frequently his temper.

NATURE OF THE TREATMENT

These illustrations, which might be continued indefinitely and with interesting variations, serve to indicate not only that the neuropath may be useful but also what sort of treatment he should have. Very simply stated, the object is so to mold the patient that he

will fit his environment, and so to arrange the environment or so to place the patient that the environment fits him. Sometimes it cannot be done. Our laws and customs contain fragments from the dark ages and more primitive eras. So do we. Some of us belong to the period about 100 A. D. For such, transplantation to the present epoch is difficult. A few of us belong in the stone age, and we cannot live in the captivity of modern civilization without falling ill. Perhaps occasionally one is 500 years ahead of his time. If so, he has a hard life, and probably is a failure, judged by our standards.

In assisting to adjust a patient to necessary conditions, frequently we have to show him that he can do things that he says he cannot do. That is his way of expressing his great reluctance to do or fear of doing something necessary for his health. Demonstration discounts admonition. He should be given an understanding of his situation; but simply telling him is not enough. We must demonstrate to him that he can eat turnips or walk a mile or sleep without a hypnotic or go without a headache powder.

Let me again emphasize that the headache or the pain in the legs or indigestion is simply a means of escape from something for which the patient feels himself inadequate, or really is inadequate. Our job is to make him equal to the task he is trying to escape or so modify the task that he can perform it, or give him another which he can do with satisfaction. To say, "Don't worry" or "Why Worry?" or "That headache isn't in the least serious" is not enough. The unwholesome ideas, the distressing disorder, can be driven out only by wholesome satisfactory ideas, which in the vast majority of cases means a satisfying occupation, a something which makes life taste good.

THE OUTCOME

And for our encouragement, we may remember that the temperamental individual who is confused and discouraged by life's perplexities and takes refuge in physical disabilities is, when rightly placed, likely to be the finest enthusiast, the most glowing optimist. Just as he is dominated and defeated by a depressing idea, so is he exhilarated and activated by sanguine ideas. Some of the greatest and most beautiful work of all time has been done by these men and women who are too much controlled by their emotions, too sensitive to the jars of a battling society, too unstable to carry the gross burdens of a materialistic world. Ours the task, then to strengthen their intellectual control, to toughen their shrinking sensibilities, and adjust the burden to the bearer. Thus may we, too, add to the sum total of human health, happiness and progress.

25 East Washington Street.

Diet and Health.—A lack of the knowledge of how to adjust income and food expenditures is holding many children back in normal development, and thereby decreasing the ability of future citizens. Oftentimes medicine can be of no lasting value until the diet is regulated, and quite frequently when the diet is regulated medicine is unnecessary; but in the majority of cases the doctor has not the time to sit down and plan this adjustment with the mother, and the problem of food economics is a work apart from nursing, just as nursing is apart from the practice of medicine. To meet just such a situation as this the nutrition specialist in social work has come into existence.—L. L. Gillett, *The Commonwealth* 6:111 (May-June), 1919.

PELVIS OF KIDNEY AS POSSIBLE SOURCE FOR INFECTION OF BLOOD STREAM

PRELIMINARY REPORT *

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During recent years it has been generally conceded that in cases of renal infection the kidney is infected secondarily following a primary bacteremia. In some instances it seems that the kidney, previously infected either through the blood stream or by an ascending infection, may be the cause from which a bacteremia results. For the purpose of investigating this interesting problem, experiments have been conducted under the direction of the Departments of Urology, of Experimental Bacteriology, and of Experimental Surgery, with reference to the following questions:

1. Can organisms pass from the pelvis of the kidney into the blood stream?

2. Are the conditions under which they pass at all analogous to the pathologic status found clinically?

3. Are there clinical cases in which the kidney has acted as a focus of infection?

Our investigations have been concerned, as yet, only with the first two of these hypothetical questions.

The literature concerning the absorption from or the passage of organisms through the kidney is very meager. Albarran¹ was the first to investigate experimentally the infections of the blood stream through the kidney. In 1888, working with *Bacillus pyogenes*, which was afterward identified as *Bacillus coli* by Krogus, Achard and Renault,² he produced infection in the blood stream by introducing *Bacillus pyogenes* into the ureter. His work was without previous bacteriologic control of the blood, however, and in many cases peritonitis occurred. He traced the organism from the bladder to foci of infection in the kidney. "From these foci the organisms go into the connective tissue and then penetrate into the blood vessels, enter the circulation, and lead to far off emboli." Thus it is seen that thirty years ago the thought was suggested that the kidney might be a focus for blood stream infection.

Burns and Swartz³ do not believe that absorption takes place from the pelvis of the kidney under normal conditions. If an acute pyelitis occurs, however, absorption, and the clinical phenomena of chills and fever result. These authors consider such clinical manifestations as due to the absorption of urine and bacterial toxin either from the blood vessels or lymphatics of the renal pelvic mucosa directly, or from the urine and bacterial toxins retained in the uriniferous tubules. They do not suggest, however, that these clinical symptoms may be due to the passage of the bacteria through the kidney into the blood stream, thus causing a bacteremia. In their later work, after the injection, by the gravity or syringe method, of indigo-carmin and india ink particles into the previously

* From the Mayo Clinic.

1. Albarran, J.: Étude sur le rein des urinaires, Thèse de Paris, 1888.

2. Krogus, Achard and Renault, quoted by Brown, T. R.: The Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women, with a Consideration of the Accessory Etiological Factors in These Conditions, and of the Various Chemical and Microscopical Questions Involved, Johns Hopkins Hosp. Rep., 10: 11-89, 1902.

3. Burns, J. E., and Swartz, E. O.: Absorption from the Renal Pelvis in Hydronephrosis Due to Permanent and Complete Occlusion of the Ureters, J. Urol. 2: 445-455 (Dec.) 1918.

ligated ureter, they found these substances in the opposite kidney, in the liver, lungs, and spleen. They then conclude: "It is reasonable to suppose that if particles of ink can travel in this manner, bacteria and other foreign substances can do likewise."

Macht⁴ states that certain drugs or poisons may be absorbed through the walls of the ureter and the kidney pelvis. Weld⁵ has shown with what ease certain drugs may be absorbed from the renal pelvis, and the untoward action of some of them. Weld's finding that "absorption from the kidney pelvis indicates that the kidney may be a focus of infection which should always be considered" stimulated me to make the present investigation.

EXPERIMENTAL WORK

Dogs were used in all the experiments. The animals were etherized with a constant ether tension; their condition was kept as near normal as possible by the judicious use of heat, etc. In some of the experiments the blood pressure was recorded. All operative manipulations were carried out with the minimum of trauma and hemorrhage. *Bacillus prodigiosus* was the organism chosen, since it is easily identified, since it

TABLE 1.—RESULTS OF EXPERIMENTS IN SERIES 1

Experiment	Pressure Above Kidney Pelvis, Cm. of Water	Positive Cultures of <i>Bacillus Prodigiosus</i>
550-19	20 to 30	1. Renal vein 2. Left kidney cortex 3. Left kidney medulla
560-19	20 to 30	1. Left kidney medulla
562-19	20 to 30	1. Left kidney cortex 2. Left kidney medulla
565-19	10 to 30	1. Heart blood 2. Liver 3. Renal vein, A and B
592-19	20 to 30	All cultures negative
618-19	20 to 30	1. Left kidney cortex
620-19	20 to 30	1. Left kidney cortex
630-19	20 to 30	1. Left kidney cortex 2. Right kidney cortex
649-19	20 to 30	1. Left kidney cortex
654-19	20 to 30	1. Left kidney cortex
657-19	20 to 30	1. Left kidney cortex
666-19	20 to 30	All cultures negative

probably never occurs spontaneously in the sites from which cultures were taken, and since it is rarely the cause of bacterial contamination in the laboratory. The bacillus was grown in broth cultures and injected by the gravity method.

A straight glass tube about 2.5 mm. in diameter was connected by a T-tube to a cannula inserted into the ureter and to a graduated buret. The straight glass tube was graduated in cubic millimeters. A stopcock was inserted on each side of the T-tube. The fluid containing the bacteria was placed in the buret and allowed to flow into the graduated tube to any desired height. At this definite and controlled pressure it was then allowed to enter the ureter. Great care was taken to exclude air from the entire system and not to contaminate adjacent tissues.

The dogs were killed with ether at the end of from two to three hours, and cultures taken from the heart's blood, the lungs, liver, spleen, inferior vena cava opposite the renal vein, right kidney cortex and medulla, and left kidney cortex and medulla. The cultures were made by planting from 2 to 5 c.c. of blood and from 0.2 to 0.5 c.c. of the tissue juice of the various

organs into tall tubes of glucose broth. The material from the tissues was obtained by aspirating the macerated particles and juice into sterile pipets. The inoculated tubes were allowed to stand at room temperature for from forty-eight to ninety-six hours. The positive cultures were then plated on plain agar.

TABLE 2.—RESULTS IN SERIES 2

Experiment	Pressure Above Kidney Pelvis, Cm. of Water	Positive Cultures of <i>Bacillus Prodigiosus</i>
531-19	78	1. Left kidney cortex 2. Left kidney medulla
534-19	70	1. Heart blood 2. Right kidney 3. Liver 4. Renal vein?
704-19	60	1. Lung 2. Renal vein, A and B 3. Heart blood, A and C 4. Right kidney cortex 5. Left kidney cortex 6. Right kidney medulla 7. Liver, A and B 8. Spleen
800-19	60	1. Renal vein 2. Left kidney cortex
801-19	60	1. Liver, A and B 2. Renal vein, A, B and C 3. Heart blood, A, B and C 4. Spleen 5. Right kidney cortex
802-19	60	1. Liver, A and B 2. Spleen
803-19	78	1. Heart blood, A, B and C 2. Renal vein, 1 and 2 3. Liver, 1 and 2 4. Left kidney cortex

SERIES 1.—In the first series, through a lumbar incision a cannula was inserted into the left ureter from 2 to 4 cm. from the pelvis of the kidney. A twenty-four hour broth culture of *Bacillus prodigiosus* was then permitted to flow into the pelvis at from 10 to 30 cm. pressure. From two to three hours afterward the dogs were killed with ether and cultures made as outlined above. Results are shown in Table 1. In twelve experiments even with this low pressure, *Bacillus prodigiosus* was recovered from the blood stream or other organs in three instances. It was found in the left kidney in all but two of the experiments.

SERIES 2.—The procedure in the second series was the same as in the first, with the exception that the pressure at which the organisms were passed into the ureter was increased to from 60 to 78 cm. Results are shown in Table 2. At this pressure, which was slightly less than the secretory pressure of the kidney, the organisms were recovered from the blood stream or other organs in six of seven experiments, and they were recovered from the left kidney in all.

TABLE 3.—RESULTS IN SERIES 3

Experiment	Pressure in Left Ureter, Cm. of Water	Pressure in Right Ureter, Cm. of Water	Positive Cultures of <i>Bacillus Prodigiosus</i>
739-19	20	65	1. Lung 2. Heart blood, A, B and C 3. Renal vein, A and B 4. Liver 5. Right kidney cortex 6. Left kidney cortex
756-19	20	64	1. Renal vein 2. Liver 3. Left kidney cortex
760-19	20	78	1. Liver 2. Left kidney cortex
804-19	20	50	1. Heart blood 2. Left kidney cortex
805-19	20	65	All cultures negative

SERIES 3.—In the third series in addition to the procedure followed in Series 1 and 2, a cannula was inserted into the right ureter 4 cm. above the bladder; to the cannula was attached a straight glass tube. The cannula inserted into the left ureter was also 4 cm. above the bladder. A forty-eight hour broth culture of *Bacillus prodigiosus* and washings from forty-eight hour agar slants were placed in the buret and allowed to flow into the left ureter, while the pressure was

4. Macht, D. I.: Concerning the Absorption of Drugs and Poisons from the Ureter and Pelvis of the Kidney, J. Urol. 2: 481-485 (Dec.) 1918.

5. Weld, E. H.: Renal Absorption with Particular Reference to Pycnographic Mediums, Med. Clin. North Am., to be published.

kept under 21 cm. The tubing connected with the cannula in the left ureter was then clamped. The femoral vein was isolated, and from 100 to 150 c.c. of a 5 per cent. sodium sulphate solution were injected slowly. The secretory pressure of the right kidney was measured in the graduated tube connected with the right ureter. After from two to three hours the routine procedure as previously described was carried out. The organisms were introduced under a very low pressure and the intrapelvic pressure was subsequently increased by stimulation of the kidney. The results are shown in Table 3. In four of these five experiments, *Bacillus prodigiosus* was recovered in other organs than the kidney.

It may be concluded, therefore, that bacteria can pass from the kidney pelvis into the blood stream, and that they may do this under conditions analogous to some of the pathologic states found in man.

INTRAVENOUS INJECTIONS OF HYPERTONIC GLUCOSE SOLUTION IN INFLUENZAL PNEUMONIA

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One of the trying experiences of the medical profession during the late pandemic of influenza was the apparent helplessness in the treatment of the chief complication, pneumonia. The experience at the Camp Travis Base Hospital probably paralleled that of other similar institutions. At first, only the commonly accepted methods of treatment were used; but it soon became evident that some additional measures must be employed, else a very high mortality would result. At this hospital, resort was made to the use of quinin because of its recognized pneumococcal action, and to the intravenous injections of hypertonic glucose solution. The results following the quinin medication are to be reported by others. The good results following the glucose treatment are attested by a relatively low mortality. This report deals with the results obtained in 319 cases of influenzal pneumonia, in which one or more injections of a sterile hypertonic glucose solution were used.

The use of glucose in the treatment of serious diseases is not new: heretofore, its use has been restricted chiefly to administration by mouth and rectum for the purpose of supplying the organism with a food easily assimilated and of high caloric value. Litchfield¹ has recently urged the intravenous use of hypertonic glucose solution in serious diseases. The present report is offered because it comprises the largest series of cases on record in which the intravenous use of a hypertonic glucose solution has been intensively employed in the treatment of pneumonia.

PREPARATION OF SOLUTION AND TECHNIC OF INJECTION

The solutions were prepared in the base hospital laboratory from chemically pure glucose: Several thousand cubic centimeters of a solution of a desired strength were prepared in distilled water brought

slowly to the boiling point in order to dissolve the glucose, and filtered through a heavy layer of cotton to remove any gross contamination; then they were made up to the original volume, autoclaved at 20 pounds pressure for twenty minutes, again filtered through several layers of filter paper and made up to the original volume with distilled water, after which the solution was distributed into suitable flasks, holding about 300 c.c. These flasks after being properly stoppered were again autoclaved, and set aside for use as needed. The necessity for several filtrations is important, for in our experience, the boiling as well as the autoclaving tended to precipitate foreign matter which otherwise would be injected. We have used solutions of four strengths in this series: 5, 10, 15 and 25 per cent. strengths of glucose.

The technic of injection and the apparatus are those commonly employed in the intravenous injection of arsphenamin. Any large vein is suitable for puncture, usually one in the antecubital space being selected. Only three precautions should be taken: First, the solution, containers, tubing and needles should be sterile. Second, the solution as it enters the vein should be kept slightly above body temperature; this may be accomplished by placing the rubber tubing in a basin of warm water. Third, the solution should be injected slowly; it should require from thirty to forty minutes to complete the injection of from 250 to 300 c.c. We have found that if the fluid is allowed to flow from the needle before puncture at the rate of from sixty to ninety drops per minute this precaution will have been taken. A pinch-cock attached to the rubber tubing is used to control the rate of flow.

RESULTS IN THREE GROUPS OF CASES

For the purpose of comparison, the cases in this series are divided into three groups, based on as accurate a prognosis as possible at the time of the injection. Group 1 includes those patients who were seriously ill, but who were expected to do reasonably well under the usual methods of treatment. Group 2 includes those patients who were critically ill, but who had a fighting chance for recovery under the ordinary methods of treatment. Group 3 includes those patients

TABLE 1.—RESULTS OBTAINED IN A SERIES OF THREE HUNDRED AND NINETEEN CASES

	Group 1		Group 2		Group 3	
	A	B	A	B	A	B
Number of patients injected.....	75	37	87	37	51	32
Deaths.....	0	0	8	0	34	20
Mortality, per cent.....	0	0	9.1	0	66.6	62.5
Average day of disease on which first injection was given.....	2	4.2	1.8	4.6	2	5
Average length of febrile period in days.....	4.5	8.2	4.9	9.6	5.6	9
Complications.....	4	2	6	4	4	1

who invariably died under the former methods of treatment. Many of the patients in the latter group did not receive glucose injections until late, other methods being tried first, only to fail; many were practically moribund at the time of the first injection, as will be noted in the illustrative cases. The subdivision of each group into A and B denotes the day of the disease on which the injections were given. In Group A the injections were made on the first, second or third day of the disease; while Group B includes patients in whom injections were made after the third day. Table 1 shows the results obtained in 319 cases, as regards mortality and length of febrile period.

1. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, J. A. M. A. 71: 503 (Aug. 17) 1918.

So-called protein reactions occurred in forty-two cases. Possibly the complete removal of all foreign material from the solution would eliminate this feature. Table 2 shows the mortality rate as regards strength of solution injected. The distribution of the forty cases as regards strength of glucose injected is shown in Table 3.

TABLE 2.—RELATION OF STRENGTH OF GLUCOSE SOLUTION TO DEATHS

	Strength of Solution, per Cent.				
	5	10	15	25	Mixed
Number of patients injected.....	31	201	28	39	20
Deaths.....	8	39	3	9	2
Deaths in Group 3.....	5	35	3	8	1
Mortality, per cent.	25	19.4	10	25	10

TABLE 3.—RELATION OF STRENGTH OF GLUCOSE SOLUTION TO THE OCCURRENCE OF PROTEIN REACTION

	Strength of Solution, per Cent.				
	5	10	15	25	Mixed
Number of patients injected.....	31	201	28	39	20
Number of reactions.....	2	37	0	2	1
Per cent. of reactions.....	6.4	18.3	0	5.1	5

The subjoined case reports illustrate the effect of the glucose injections. The first case was one of the most severe encountered during the epidemic, while the second was quite severe but less so than the first.

REPORT OF CASES

CASE 1.—The onset of influenza occurred, Oct. 29, 1918, and of pneumonia, Nov. 3, 1918. The patient was admitted to the hospital, November 2. The day following, bilateral consolidation of the lower lobes was noted. November 4, 250 c.c. of a 10 per cent. glucose solution were injected intravenously. November 5, the condition was critical, the patient was semi-comatose and delirious, and there were marked cyanosis and dyspnea. Two hundred and fifty c.c. of the glucose solution were given which produced some improvement in the degree of cyanosis and in the condition of the pulse. November 6, the lung involvement had extended to the left upper lobe; the pulse was rapid and weak; the temperature was 103.8 F.; the pulse rate was 120, and respiration was 38. Two hundred and fifty c.c. of glucose solution were injected, after which the pulse became stronger and slower. November 7, the pulse rate was 130 and was irregular. Two hundred and fifty c.c. of glucose solution were injected. The patient was delirious, but slept after the injection, the first time in three days. November 8, the pulse was rapid and thready, respiration was shallow, the nails and lips were extremely cyanotic, and the mouth and tongue were dry and coated. Two hundred and fifty c.c. of glucose solution were given intravenously, after which the patient slept. November 9, the patient was still delirious and cyanotic. Two hundred and fifty c.c. of glucose solution were injected, followed by marked improvement. November 10, the patient was rational, there was no cyanosis; the pulse was regular, and of improved quality. The patient continued to improve, but convalescence was prolonged owing to the development of pulmonary tuberculosis.

CASE 2.—The onset of influenza occurred, November 7, and of pneumonia, Nov. 11, 1918. The patient was admitted to the hospital on the latter date with definite consolidation of the right lower lobe, and with temperature of 103 F. November 15, the lung involvement had extended to the right middle lobe, and the patient became extremely cyanotic and dyspneic. He was given 250 c.c. of a 10 per cent. glucose solution intravenously, which was followed by a moderately severe reaction, after which he showed remarkable improvement. The following day he had improved, but he was given a second injection of glucose. November 18, the temperature was normal, and recovery followed.

COMMENT

The beneficial effects of an intravenous injection of glucose solution are most striking in those patients who are critically ill, and who present the toxic symptoms commonly observed in this disease, as nausea and vomiting, anxiety, restlessness, vasomotor disturbances shown by cyanosis, rapid, feeble pulse, a cold, clammy skin, and a dry coated tongue and mouth. In many instances, a change occurring shortly after the injection to a state of well being seemed almost miraculous. Frequently, the patient would fall into a restful sleep before the completion of the injection.

An analysis of Table 1 shows that among 112 patients in Group 1 there were no deaths; among 124 patients in Group 2 there occurred eight deaths, and among eighty-three patients in Group 3 there occurred fifty-four deaths. The mortality rates for each group being: Group 1, 0; Group 2, 6.45, and Group 3, 65.06. It is expected that the mortality would be lower among those patients receiving glucose early, yet in Group 2 there occurred eight deaths among eighty-seven patients receiving glucose injections during the first three days of the disease, while among thirty-seven patients to whom the injections were not given until after the third day there were no deaths. The number of cases as well as the number of deaths in this group is too small to warrant the drawing of any conclusions from these results. In Group 3 there occurred thirty-four deaths among fifty-one patients receiving injections during the first three days of the disease, while among thirty-two patients receiving the first injection after the third day there occurred twenty deaths, the death rate being slightly lower in the latter. Two points must be considered before any conclusions are drawn in regard to Group 3 cases; first, that a hopeless prognosis had been made in all these cases; and second, that by the end of the third day some of the patients in Subgroup B had probably developed a certain amount of immunity. Quite significant is a definite shortening of the febrile period in those cases in which glucose was received prior to the third day; in each group, this time was reduced practically 50 per cent. Complications were too few to warrant the drawing of any conclusions relative to the influence of glucose injections on their occurrence.

The majority of patients in this series received injections of a 10 per cent. glucose solution. The important facts relative to the relationship of different strengths of the solution injected to the number of deaths are shown in Table 2. The lowest death rate occurred among those patients receiving a 15 per cent. solution, and the highest among those receiving a 5 and 25 per cent. solution. The number of cases in these three series differs so slightly that the inference that a 15 per cent. solution is the one of choice is probably not warranted. The death rate in the group of cases in which the 10 per cent. solution was used is 19.4 per cent., the average for the entire series of 319 cases being 19.1 per cent. From our experiences we have not been able to demonstrate that the injection of a 25 per cent. solution has any particular advantage over that of a 10 per cent. solution. Theoretically a 25 per cent. solution should be more efficacious than a weaker solution, and possibly its use in a larger series of cases than ours would bring out this advantage.

PROTEIN REACTION

The occurrence of the so-called "protein reaction" following the injection of glucose solution is mentioned

by Litchfield; we encountered it in forty-two instances, or 13.4 per cent., of the patients injected. Erlanger and Woodyatt,² and Wilder and Sansum³ have given a large number of glucose injections without the occurrence of such reactions. Concerning what may be the responsible factor for this phenomenon we confess ignorance. It has been suggested that failure to remove all foreign matter from the solution may be responsible. Opposed to this suggestion is a condition that we have several times observed: In attempting to provoke a therapeutic protein reaction, we have repeatedly failed after the addition of 1 c.c. of our killed typhoid bacilli mixture to 250 c.c. of glucose solution, and this occurred in patients who previously and afterward showed a typical reaction following the injection of the same amount of the bacterial mixture diluted in 2 c.c. of physiologic sodium chlorid solution. We are certain no harm has resulted in our cases from the occurrence of this reaction, and, as reported elsewhere,⁴ it may have a definite therapeutic value.

ACTION OF GLUCOSE

The mechanism by which glucose solution aids in recovery is somewhat complicated and probably not altogether known; undoubtedly both the ingredients present in the solution play a definite rôle. Litchfield has emphasized that the process of dehydration in serious diseases is especially potent for evil because least appreciated and consequently neglected in treatment. The introduction of several hundred cubic centimeters of water directly into the blood stream immediately tends to correct this dehydration. The introduction of hypertonic solution into the blood stream would render the blood hypertonic if it were not for several changes which occur to maintain a state of isotonicity. The value of the glucose solution lies in part in the occurrence of these changes. As the glucose solution enters the blood, there at first is a withdrawal of fluids from the body tissues sufficient to maintain an isotonic condition in the blood. That this is probably the case is shown by the fall in the hemoglobin content of the blood following such injections; and also blood chemistry studies, in our cases, of blood taken during and shortly following the injections show a normal sugar content. The latter finding may possibly be due to a withdrawal of the glucose from the blood as rapidly as it is injected; but it may also mean a dilution of the blood by fluids extracted from the tissues of the body. This condition is not due to the elimination of glucose from the body through the kidneys for in our cases glycosuria was uniformly absent. The occurrence of the extraction of fluids from the tissues, as just assumed, would only tend to increase the degree of dehydration in the tissues of the body, if it were not for the fact that the glucose is rapidly taken up by the tissues. This process is increased by the condition of starvation present in the tissues, and makes demand on the blood for fluid which is necessary in the physiologic process of cell metabolism; this brings about a reversible flow of fluids to the tissues, and tends to neutralize the tissue dehydration.

In diseases characterized by toxin production, either from the products of the infecting organisms or from the products of catabolism, with the extraction of fluids

from the tissues there is considerable washing out of toxins into the blood stream, from which these may be more readily eliminated through the kidneys.

In addition to the influence of the glucose solution on the condition of dehydration, it also has a marked effect on the condition of starvation, characteristic of most serious infectious diseases. Lusk⁵ has pointed out that there is a certain amount of stimulation of cell activity by glucose, in addition to its purely food value. The marked improvement in the pulse following glucose injections would suggest a possible direct stimulation of the cardiac muscle.

We do not know how to account for the marked improvement in desperate cases following glucose injections, unless they are due to the theoretical processes that have just been mentioned. One is struck by the rapid improvement in many cases: patients previously restless and semidelirious have dropped into a restful sleep during the course of an injection, the anxious toxic look has disappeared, and the hot, dry skin has become moist. The tongue, previously dry and coated, has become moist. The appetite for food and liquids becomes less capricious and is stimulated. The urinary output is increased.

CONCLUSIONS

1. The intravenous injection of glucose solution is a valuable aid in the treatment of serious cases of pneumonia.
2. The results following are almost immediate, but are not necessarily lasting; and success may follow only after repeated injections.
3. The injection of glucose solution is not more difficult than the injections of other intravenous medication.
4. It is not intended that glucose solution should be substituted for antipneumococcic serum in cases of Type I infections; it may, however, be added to the serum treatment.

AN OUTBREAK OF BOTULISM

REPORT OF CASES

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AND

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DETROIT

The outbreak of *Bacillus botulinus* poisoning reported in this paper occurred at Grosse Pointe, a residential suburb of Detroit. The source of the toxin was a glass jar of ripe olives. This food was later analyzed by Dr. Herbert W. Emerson of the Hygienic Laboratory of the University of Michigan, Dr. Plinn F. Morse of Harper Hospital, and the Detroit Board of Health. *Bacillus botulinus* was found by each of these investigators, and the fluid from the olives was demonstrated to be lethal for guinea-pigs in doses of 0.01 c.c.

THE OUTBREAK

The olives were first served at a formal dinner, Oct. 18, 1919, at the residence of Mr. M. W. S., and there were present the host, hostess and six guests. One of the guests noticed that the olives were soft and remarked that they had a peculiar odor. They were, however, eaten by four of the diners and one waitress, and of this group two died, two were made moderately

2. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, J. A. M. A. 69: 1410 (Oct. 27) 1917.

3. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, Arch. Int. Med. 19: 311 (Feb.) 1917.

4. Wells, C. W.: Intravenous Injections of Foreign Protein in Influenzal Pneumonia, J. A. M. A. 72: 1813 (June 21) 1919.

5. Lusk, Graham: Elements of the Science of Nutrition, Ed. 2, Philadelphia, W. B. Saunders Company, 1917.

sick but recovered, while one escaped entirely. On the following days, October 19-21, the olives were eaten by Master L. S. and Miss F. S., children of the host, and by Miss J. M., a waitress in the home. All of this group died. There were in all eight persons who are known to have eaten the olives. Of these one escaped entirely, two were slightly affected, and five died.

CLINICAL HISTORIES

CASE 1.—Mrs. C., aged 27, a temporary waitress, ate two or more olives in the evening after the dinner. On the morning of the next day, October 19, she had slight difficulty of vision, pain in the head and nervousness. At noon she had slight difficulty in swallowing. She was seen by her family physician about 3 p. m., who could find no objective symptoms of disease. At 7 p. m. she began vomiting and had moderate abdominal pain and diarrhea. These symptoms soon were followed by collapse, and death occurred at 10 p. m., twenty-four hours after eating the fruit, and twelve hours after the onset of symptoms.

CASE 2.—Mr. A. I. L., aged 45, ate one or more olives at dinner, October 18. The following day, October 19, he played golf. While on the links he had difficulty of vision, and on returning home he said that he had never felt so tired before. October 20, he noticed diplopia and at night difficulty in articulation. October 21, he developed great difficulty in swallowing and articulation, which later developed into total paralysis of deglutition and phonation. At this time the pupils were dilated and reacted slowly to light. There was internal strabismus of the right eye and partial ptosis of the right eyelid. The eyes were suffused and red. There was paresis of the whole right face. The pharynx and larynx were filled with thick mucus, which the patient could not dislodge. The blood pressure was 140 systolic and 80 diastolic. There was no fever, the urine was normal, the nonprotein blood nitrogen was 36 mg. per hundred c.c., and the Wassermann test was negative.

October 22, dyspnea with laryngeal spasm began. The tongue could not be protruded. The patient became weaker and died of respiratory paralysis that evening, four days after taking the toxin and after an illness of three days.

CASE 3.—Mrs. A. I. L., aged 43, ate a small part of one olive at dinner, October 18. October 21, about sixty-five hours following the meal, she developed slightly disturbed vision, mild ptosis, obstinate constipation and difficulty in swallowing solid food. These symptoms were not severe, and she recovered in a few days.

CASE 4.—Mrs. M. W. S., aged 48, ate a small part of an olive, October 18, and a whole olive, October 19. October 22, she noted mild haziness of vision with diplopia, and October 23 slight difficulty in swallowing solid food, and moderate ptosis of the right eyelid. Aside from the ptosis the physical examination was negative. October 24, at 8 p. m., she received 1 c.c. of antitoxin serum intravenously and 10 c.c. at 9 p. m. On the following day she received 10 c.c. subcutaneously. The ptosis continued for several days, and she recovered very slowly from the nervous and muscular debility.

CASE 5.—Master L. S., aged 12, ate an unknown number of olives, October 19, 20 and 21. October 22, about noon, he vomited once and then was comfortable until late in the afternoon, when he developed dimness of vision and diplopia and had difficulty in entering his home from the automobile. About 7 p. m. he began vomiting, and about 8:30 p. m. he had a severe convulsion lasting one minute. He vomited once after the convulsion. At this time there began inability to swallow and speak and marked weakness. He rapidly failed, and died of respiratory paralysis at 3 a. m., October 23, three days after first eating the olives and twelve hours after the onset of symptoms.

CASE 6.—Miss J. M., aged 43, a maid in the home of Mr. M. W. S., ate an unknown number of olives, October 19-21. About 3 p. m., October 22, she began vomiting, with moderate abdominal pain. During the afternoon she developed difficulty in swallowing, diplopia and dimness of vision. These symptoms kept up for twenty-four hours, but she had several

periods of a few hours each during which they cleared up almost completely. Calomel was given and good catharsis obtained. She found that olives relieved her nausea and so kept on eating them. On the morning of October 23 she vomited blood. At noon of October 23, paralysis of deglutition became complete and ptosis of the left eyelid was present. During the afternoon she became very weak and had difficulty in breathing, it being necessary to use all the accessory muscles of respiration. The pharynx was filled with thick mucus. In the evening she was in a semicoma and the pulse was rapid, weak and irregular. Nystagmus and strabismus were observed, and râles were present at the bases of both lungs. She died of cardiac and respiratory paralysis at 10:30 p. m. on the fourth day after eating olives, and about thirty-six hours after the onset of symptoms.

CASE 7.—Miss F. S., aged 23, ate a total of two or more olives, October 19-21. Illness began on the morning of October 22, when she noticed coryza and sore throat, blurred vision and diplopia. She did not feel sick. October 23, she felt weak. About noon, she started to eat soup and was unable to swallow it. She became nauseated and vomited once. Because of weakness and dimness of vision, she had to be assisted to bed.

At this time the heart, lungs, abdomen and general examination were negative. There was ptosis of both eyes, so that the patient had to throw back the head to see. There was paralysis of the right external rectus muscle. The pupils reacted to light and accommodation, and were normal in size. There was no paralysis of the facial muscles, and the tongue protruded normally. The patient was unable to swallow food or liquids, and there was an accumulation of thick mucus in the pharynx which she could neither expel nor swallow. Her mentality was clear, there were no paralyses or disturbances of sensation, and the deep reflexes were normal. The urine was normal. During the night she rested well.

The following day, October 24, the patient was weaker, but the ptosis was less. Other signs were unchanged, and she spent a comfortable morning. At noon she complained of smothering, and the respiration became wholly thoracic and labored with the accessory respiratory muscles in play. There was no cyanosis or dyspnea. The mucus became more annoying. With difficulty of respiration, the mentality became more anxious and the patient restless. The physical signs did not change during the day.

In the morning the duodenal tube was passed easily to the stomach. Two ounces of magnesium sulphate in one pint of water were injected and later, before the tube was removed, 8 ounces of milk and two eggs. There was a good bowel movement after five hours, and the patient passed about 15 ounces of urine during the day.

At 4:40 p. m., 10 c.c. of antitoxin serum were given intravenously. At 5:45 p. m., 20 c.c. were given, and at 2:15 a. m. of October 25, 12 c.c. There was no reaction, and the injections seemed to quiet the patient.

On the final day, October 25, she was clear mentally, but drowsy and almost too weak to move. Speech, which up to now had been fairly clear, became very indistinct. The tongue could not be protruded. She complained of numbness in both hands and kept rubbing them "to restore the circulation." She suddenly became cloudy mentally, and the pulse rose to 160. In a few moments she became comatose, the pulse and respiration became slow, and she died of respiratory paralysis seventy-two hours after her first symptoms and on the sixth day after first partaking of the olives.

ANALYSIS OF CASES

Onset.—Difficulty of vision was the first symptom in five cases, and vomiting in two. Abdominal pain was present with the vomiting in one case, and weakness was an accompanying symptom in two cases, in one of which it was very severe. The symptoms began within twelve hours in one case, twenty-four hours in one case, sixty hours in one case, and seventy hours in four cases. The onset was gradual, and in only one case was it of such a character as to cause apprehension of illness on the part of the patient.

Course.—Once established, the disease became steadily and progressively worse in the fatal cases, excepting the one in which the patient showed some temporary relief for a few hours at a time. Death occurred in twelve hours in two cases, thirty-six hours in one, and seventy-two hours in two.

Gastro-Intestinal Symptoms.—These consisted of vomiting and moderate general abdominal pain. They dominated the clinical picture in Case 6, and masked the neurologic syndrome in Cases 1 and 5. They were absent or negligible in the remaining four cases. It was observed that death occurred much more quickly in the patients showing gastric symptoms, and that so far as could be determined they ate more of the poisoned food than did the patients showing only neurologic symptoms.

Neurologic Symptoms.—With the exception of paralysis of the diaphragm, the motor lesions were confined to the cranial nerves.

The olfactory (first), the trigeminal (fifth) and the auditory (eighth) nerves were not affected in any of the cases. The oculomotor (third), the trochlear (fourth) and the abducens (sixth) nerves were involved very early in every case. There was ptosis of one or both eyelids, and diplopia and paralysis of one of the ocular muscles, in two of the cases the right external rectus being affected. In only one of the cases, Case 2, was mydriasis present. Nystagmus was observed in Case 6. Vertigo was not seriously complained of by any of the patients. The facial (seventh) nerve showed involvement in Case 2, in which paresis of the right face appeared. The paralyses involving the glossopharyngeal (ninth) and the vagus nerves (tenth) were the most distressing features of the illness and occurred in every case. The difficulty of swallowing appeared shortly after the disturbances of vision, and sooner or later complete paralysis ensued. Strangling generally followed attempts to swallow. Though there was no excess of secretion, there was an annoying accumulation of mucus in the pharynx and larynx which the patient could not expel. There was great difficulty in articulation in Case 2. Paralysis of the trapezius and sternocleidomastoid muscles or of the deep muscles of the neck was not observed. The spinal accessory (eleventh) nerve may have been involved in the pharyngeal paralysis. Paralysis of the hypoglossal (twelfth) nerve appeared in two cases shortly before death. Paralysis of the diaphragm, as evidenced by total absence of abdominal breathing, was observed in Cases 6 and 7 toward the end of the illness. It may have been overlooked in the others. The patients at that time breathed heavily but not over 28 per minute, and the accessory respiratory muscles were in play. They complained of smothering and lack of air, but there was no cyanosis of lips or face. Whether the paralysis was due to injury to the phrenic nerve or to interference with the respiratory center we are unable to say. Incoordination was not observed.

A general convulsion occurred in Case 5 (Master L. S., aged 12). It was severe but of short duration, and did not recur.

With one exception, the mentality was clear in all the patients until shortly before death, when lrowsiness and inattention to environment appeared. Patient 6 had a period of coma on the last day lasting two or three hours from which she partially aroused. Patient 1, not observed by us, was described by her physician as hysterical, which condition was

attributed to a domestic misunderstanding of a few hours before.

The temperature was normal or subnormal in all cases except following serum administration in Case 7 and shortly before death in Case 2. The respiration was below 30 in all cases in which it was noted. The pulse was rapid and variable in rate, a little exertion or anxiety sending it as high as from 130 to 150 per minute. The general physical examination was negative in all cases except Case 6, in which there were râles at the bases of the lungs a few hours before death.

Urinalysis in two cases was negative. Blood counts were not made. One nurse called our attention to a peculiar sweetish odor in the stool of three patients.

The termination of illness came with great weakness and collapse, slowing and diminishing of the respiratory excursion, and a rapid, weak pulse. The heart continued to beat after the breathing had ceased.

Diagnosis.—In our experience, two points stand out: First, cranial nerve paralyses are constant symptoms in food poisoning due to *Bacillus botulinus*; they frequently precede the gastric symptoms, and they may constitute the whole clinical syndrome. Second, the time of onset of symptoms varies to such an extent that the poisoned individuals may become widely scattered and the presence of an outbreak may not be recognized.

The first patient to be taken sick, Case 1, was not observed by us and her illness was unknown to the family until, seeing the report of the death of the boy in the papers, her relatives called up. Her physician was puzzled over the case and suggested poisoning, but his suspicions were not aroused enough to demand a necropsy.

The cause of illness in the second patient was also unrecognized. A diagnosis of pseudobulbar paralysis was made on the evidence of paralysis of the third, seventh, tenth and twelfth cranial nerves, the first two showing right sided lesions. The etiology of the condition was obscure because the patient was in excellent health and presented no evidences of cardiovascular disease or syphilis. A bulbar palsy of infectious origin was ruled out by the absence of fever, and similarly a diagnosis of acute poliomyelitis with bulbar symptoms was discarded. Because of the rapidity of the course, progressive muscular atrophy of the bulbar type and myasthenia gravis were not considered. Poisoning by belladonna, hyoscyamus or gelsemium were impossible because the patient had not taken any of the drugs. The unsatisfactory conclusion was finally reached that cerebral thrombosis and softening were responsible for the condition. When, October 22, the boy and the maid in the home of Mr. M. W. S. came down almost simultaneously with gastro-intestinal and neurologic symptoms, the presence of food poisoning was recognized and the diagnosis of the two previous cases was cleared up.

Treatment.—Antibotulinus serum was obtained through the kindness of Prof. Robert Graham, of the University of Illinois. Forty-two c.c. of the serum were administered intravenously in Case 7, forty-eight hours after the initial symptoms. It did not affect the disease. Patient 4 received 10 c.c. of antiserum intravenously forty-eight hours after the initial symptoms, and twelve hours later 10 c.c. were given subcutaneously. Her illness was very mild, and we cannot state that the serum had any influence on her recovery.

To be of value, the serum must be administered early. This can be accomplished only by an early recognition of the disease and by having depots of serum

in various centers about the country. The dosage has not been fully established. McCaskey used small amounts, while Dickson reports the use of 85 c.c., or about 250,000 units. If a case of botulism occurs, careful search for the poisoned food should be made and all persons who have eaten it should be given good sized prophylactic doses of the serum.

Gastric lavage, free catharsis by castor oil and enemas, sedatives, supportive measures and, in the sub-acute cases, feeding by the stomach tube are indicated.

REVIEW OF THE LITERATURE

Dickson¹ states that up to October, 1918, there had been thirty reported outbreaks of botulism in the United States, with 104 cases and seventy-three deaths. Besides these he mentions four unreported outbreaks with a total of twelve cases and two deaths. Bine² reports an outbreak of three cases and two deaths, Nevin³ one of three deaths, and McCaskey⁴ one of seven cases and four fatalities. During the past year, besides the outbreak observed by us, one has been reported by Thom, Edmondson and Giltner,⁵ and a third occurred in Ohio recently. Thom's outbreak was of five cases with four deaths, and the one in Ohio of eight cases and six deaths. There have been, therefore, at least forty recognized outbreaks of botulism in the United States, with 150 cases and ninety-seven deaths.

The pathology of the disease has been studied by Dickman. The abdominal and thoracic viscera show congestion. The veins and in some cases the arteries show varying degrees of thrombosis, the process beginning in the endothelial lining and eventually leading to occlusion. In the nervous system there are vascular congestion and hemorrhages, more marked at the base of the brain and in the region of the pons. Microscopic changes in the nuclei of the affected nerves were not found by Dickman. He is unable to explain the pathogenesis of the paralyzes. We have found no record of examination of the peripheral nerves.

The clinical findings in the recorded cases have been similar to ours. The onset generally occurred before or on the third day after ingestion of the poison, though delays of six and nine days have occurred. The paralyzes of the third, fourth, sixth and tenth cranial nerves were almost universally present. Great muscular weakness, incoordination and staggering were often found. Several persons have had paralysis of the sternocleidomastoid and trapezius muscles. Motor paralysis of the stomach with food retention for many days has been noted, and severe constipation is common. The course of some of the cases has been longer than ours, and there are several instances in which patients extremely ill eventually recovered after weeks of illness. The laboratory tests were all negative except for moderate leukocytosis.

Burke⁶ has demonstrated that *Bacillus botulinus* occurs in nature under conditions that are ideal for the contamination of foods such as are canned for human consumption. In certain regions she has recovered the organism from moldy and bird picked cherries, pole bean leaves, spiders taken from bean plants, and moldy

hay. It was also found in the intestinal contents of a hog that had eaten vegetables contaminated by the bacillus several months previously. Burke⁷ has also found that the spores are more resistant to heat than has previously been supposed, some of them surviving a temperature of 100 C. for from fifteen minutes to two hours, and steam under 15 pounds pressure for ten minutes. Dickson, Burke and Ward⁸ have investigated the efficiency of certain of the methods for sterilization of home canned vegetables. They found that the organism survived when the can was placed in boiling water for two hours, and when fractional sterilization of fifteen minutes for three successive days was employed. Fractional sterilization of one hour for three successive days, provided the cans were tightly sealed during the interval, was successful in sterilizing the food, as was the method of adding over 2 per cent. lemon juice to the food and exposing the cans to boiling water for one hour. The toxin is destroyed by light and air, but maintains its virulence for more than six months if it is sealed and in a dark place. It is not destroyed by the gastric juice. It is destroyed by a temperature of 80 C. for half an hour and by boiling.

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A REVOLUTION IN TREATMENT OF CONGENITAL DISLOCATION OF HIP IN YOUNG CHILDREN

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The method for the correction of congenital dislocation of the hip has been in vogue only about twenty years, and up to the time of the innovation which I shall describe, the correction has been done either by the closed method after the style of Lorenz, or by the open method as devised by Hoffa in recalcitrant cases. Both of these methods require a long period of encasement in plaster of Paris, followed by corrective exercises, the duration of the treatment extending over a period of many months.

Chance has placed in my hands a method which has been successfully applied to twenty-five cases and which I wish to present to the profession, this method being used in children up to the age of 2½ years.

In reviewing the literature of the anatomy of congenital dislocation of the hip, we find, according to Drs. S. S. Davis,¹ John Ridlon² and Ralph Thompson³, that before the child has borne weight on the affected limb, the head and the acetabulum are normal and there has been no muscular contraction. It is only after the weight has been borne on the affected limb that the muscles about the hip joint are contracted, the upper dislocation resulting in a stretching of the ligamentum teres; and ultimately the artery accompanying the ligamentum teres fails to functionate, resulting in a malformation of the head of the femur.

1. Dickson, E. C.: Botulism: The Danger of Poisoning from Vegetables Canned by the Cold-Pack Method, J. A. M. A. 69:966 (Sept. 22) 1917; Monograph 8, Rockefeller Institute for Medical Research; Botulism: A Further Report of Cases Occurring in the Pacific Coast States, Arch. Int. Med. 22:483 (Oct.) 1918.

2. Bine, René: Boston M. and S. J. 177:559 (Oct. 18) 1917.

3. Nevin, Mary: Paper read in abstract before conference of the American Public Health Assn., Sept. 8, 1915.

4. McCaskey, G. W.: Am. J. M. Sc. 158:57 (July) 1919.

5. Thom, Charles; Edmondson, Ruth B., and Giltner, L. T.: Botulism from Canned Asparagus, J. A. M. A. 73:907 (Sept. 20) 1919.

6. Burke, G. S.: J. Bacteriol. 4:541, 1919.

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8. Dickson, E. C.; Burke, G. S., and Ward, E. S.: Botulism: A Study of the Resistance of the Spores of *Bacillus Botulinus* to Various Sterilizing Agencies Which Are Commonly Employed in the Canning of Fruits and Vegetables, Arch. Int. Med. 24:581 (Dec.) 1919.

1. Davis, S. S.: Am. Med. Aug. 29, 1903.

2. Ridlon, John: N. Y. Acad. of Medicine, March 3, 1904.

3. Thompson, Ralph: Lancet 2:777, 1909.

The origin of the method here described dates back to Oct. 17, 1918, when, in the presence of a number of visiting physicians, I replaced, without an anesthetic, a hip that was congenitally dislocated, in a child, aged 2 years. Wishing to demonstrate to one of the visiting surgeons present the simplicity of the replacement of the hip without an anesthetic, I attempted to displace the hip again; but, having failed to do so after a ten minutes' effort, I said I would permit the child to go about without applying the usual plaster-of-Paris fixation and allow the dislocation of the hip to reoccur, so that the following week I might give the visiting surgeon the opportunity of performing the replacement without an anesthetic as I had done. When the child returned, the following week, our surprise was great to see that the head of the femur was fixed firmly in the acetabulum. I was so impressed with this unexpected result that I have attempted this method on all young children with congenital dislocation of the hip, coming under my observation when they first begin to walk. I have so operated on twenty-five patients in the past year, making the correction without an anesthetic.

Of these twenty-five patients operated on, I myself was compelled to place in plaster of Paris one limb that would not remain in the acetabulum, and I know of only one other such case, in which the cast was applied at another institution.

TECHNIC

The pelvis is held fixed by an assistant; the thigh is completely flexed on the abdomen; pressure is made on the knee which brings the head of the femur under the acetabulum, and as the leg is rotated outward in the flexed position, the head of the femur is raised into the acetabulum, with the fingers of the other hand. The whole procedure in these cases is accomplished in less than a minute's time. The child is immediately placed on the ground and allowed to walk; and in one case, a child, aged 2 years, walked seven blocks on leaving the dispensary, immediately following the operation.

It is my intent to make a detailed report of these cases in about a year, at which time roentgenograms will be presented showing the dislocation and the replacement of the hip, and photographs showing the apparent shortening and cure. Sufficient time will have elapsed then to appreciate what percentage of perfect cures can be accomplished by this new method.

The method is not adapted to children that have walked on the affected limb for six months or more: then the old Lorenz method must be resorted to. It is effectual only when the child first starts to walk; and the oldest patient in whom I have been able to make the correction effectually was 2½ years of age.

A number of these cases were reviewed by the fellows of the American College of Surgeons during the recent October meeting.

CONCLUSIONS

From the observations of Thompson, Davis and other anatomists, one may conclude that:

1. Before the child bears weight and develops muscular and ligamentous contraction, the acetabulum and head and neck of the femur are normal in a large percentage of cases.

2. With normal conditions prevailing, there is no reason why the condition should not be regarded and treated as a traumatic dislocation and replaced in the same manner, and the child permitted to go about.

When we compare the large percentage of good results accomplished by this method with those of the Lorenz method, and the great saving of time and mental suffering, this, in the future, must be the method of choice and trial, to be followed by the plaster-of-Paris fixation, if there develops a failure of retention.

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TREATMENT OF GOITER WITH INJECTIONS OF PHENOL, TINCTURE OF IODIN AND GLYCERIN

A FURTHER REPORT OF EIGHTY CASES *

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The injecting of diseased thyroid glands as a means of curing or relieving the pathologic condition has greatly interested us for the past five years. Through the courtesy of Prof. Beaman Douglass of the New York Post-Graduate Hospital, we have been able to observe all cases of goiter coming before us.

Eighty cases of all forms of goiter were injected at regular intervals by us for the past two years, with a mixture of equal parts of phenol (carbolic acid), tincture of iodine and glycerin. The eighty cases represented more than 500 injections. A limited number of the patients were injected with boiling water, but with poor results. We doubt its efficacy and we have discontinued its use.

There were no untoward results from injecting the goiters with the phenol preparations, disproving the statement of some that it is a blind, uncertain and dangerous procedure. It is true if one's technic is not perfect, there is a chance of entering a vein or of injecting too much of the phenol solution, thereby causing symptoms of acute strumitis. In four of the ten patients who were operated on there was some difficulty in separating adhesions between the anatomic and surgical capsule caused by the material oozing out, when the needle was retired from the gland.

The object of the injections is to produce an inflammation, which eventually causes a fibrosis in the gland and the obliteration of that part of the gland injected. After the case has favorably reacted to the treatment, one is able to feel islands of fibrosis. It gives one the feeling of a hobnail liver. The production of a fibrosis in the gland is borne out by the reports of the pathologists, when previously injected patients were operated on and were submitted for examination.

It will be seen from the accompanying table that the injections are particularly suitable in the ordinary parenchymatous goiters of young women. Of fifty-five patients of this type injected, 76.4 per cent. were cured. It relieves the thyrotoxicosis, as in exophthalmic goiter, but unfortunately the relief is only temporary. In fourteen toxic cases, relief was given in 80 per cent. It is of no avail in the cystic or colloid form; in fact, if

* In the Medical Record (92: 591 [Oct. 6] (1917) one of us (J. E. S.) published a report on seventeen cases of goiter, the treatment of which was similar to that described in this presentation.

the treatment is persisted in, it may do harm by causing a sudden enlargement of the gland which may seriously interfere with respiration.

The majority of the patients sought relief simply for the swelling in the throat. Some had slight difficulty in swallowing or lifting the arms upward. In other cases the swelling was brought to the attention of the patient by friends or members of the family. The majority of the patients noticed the swelling themselves.

RESULT OF TREATMENT IN EIGHTY CASES IN WHICH
PHENOL, IODIN AND GLYCERIN MIXTURE
WAS INJECTED *

Type of Goiter	No. of Patients	Cured	Improved	Unimproved
Parenchymatous	55†	42	10	3
Exophthalmic goiter	14‡	..	12	2
Cystic	8	..	..	8
Colloid	2	..	..	2
Adenomatous	1	..	..	1

* The number of injections ranged from three to twenty-six. All the patients were females except one, a male suffering from an advanced form of exophthalmic goiter.

† Fifty of whom were between 12 and 30 years of age.

‡ Eight mild cases, 6 advanced.

ACTION

The treatment causes an inflammation in the gland with a resultant fibrosis. It quiets the heart's action, improves the appetite, has a favorable effect on metabolism, stays emaciation, and reduces the mental irritability.

It is our custom to inject all goiters which are to be operated on, as the relief of the toxic symptoms is a powerful adjunct to the success of the surgical procedure. Patients are put to bed, but are allowed to get up daily for several hours to break the monotony, provided they do not display an excessive degree of thyrotoxicosis. A strict nonanimal protein diet is ordered, and small doses of codein at frequent intervals are given. The object is to produce mental and body quiet. Colonic irrigations of 2 per cent. sodium bicarbonate are given daily, as this is a powerful way of reducing the toxemia.

Two bowel movements should be obtained daily. The patient should have plenty of rest; noon and afternoon rest is insisted on. Plenty of alkaline water should be given. Patients with little means are advised to take plenty of water with the addition of a little sodium bicarbonate. Plenty of outdoor air and sunlight is essential. Tobacco and alcohol are prohibited. A cleansing bath should be given daily to promote perspiration.

Meat and fish are forbidden. Milk, buttermilk and food cooked with milk should be given. No soups are to be made from meat or fish stocks. Eggs, butter, bread, rice, cereals, cooked fruit and especially fruit juices prepared out of ripe fruit, should be given.

Of the fourteen patients with exophthalmic goiter, ten were operated on and all recovered, the results of which I attributed mostly to the preoperative treatment. Four cases of the series of fourteen proved inoperable, but the patients were greatly relieved by the injections and preoperative treatment. A careful history should be taken of all patients presenting themselves for treatment. An exhaustive examination of the throat should be made to determine the form of goiter present, as the injections are of no avail in the cystic or colloid forms.

METHOD

Five drops of equal parts of tincture of iodine, chemically pure phenol and glycerin are injected into the

most prominent part of the gland. The needle is plunged directly into the substance of the gland, and the patient is told to swallow. If the needle is in the gland, it will have a wide upward and downward movement during the act. If the needle is extraglandular, no such excursion of the needle will take place. Care should be taken to inject the material very slowly, as hasty injection causes great pain, which may be referred to the ears. Other times it will be referred to the jaw and sides of the neck. There is always some pain, which takes place after the fluid has been injected; but this subsides within a short time. If too much of the material is injected, alarming symptoms of acute strumitis may set in. Some patients feel weak; others may actually faint. The interval of treatment is generally five days, but the frequency of the injections will be in direct ratio to the reaction. Some may accept treatment every three or four days, others between the fifth and seventh day. It is never safe to inject more than 12 drops. After the fifth injection, one can readily determine the progress of the case. In some cases five injections suffice; in others, many more may be needed. In one case of the series of fifty-five, as many as twenty-six injections were given before a cure was effected.

CONCLUSIONS

1. A goodly percentage of parenchymatous goiters will be cured by this method.
2. It relieves the thyrotoxicosis in the graver forms.
3. It is of no use in the cystic and colloid forms, and never should be given.
4. It is a safe procedure if one's technic is not faulty.
5. It is given as a preliminary in all cases going to operation, with the exception of the cystic, colloid and cancerous forms.
6. It is the only hope of relief in the inoperable cases and those in which surgery is refused.

ADDISON'S DISEASE

MORRIS J. BALEN, M.D.

PHILADELPHIA

The case here reported presents the characteristic syndrome of Addison's disease, together with definite and conclusive necropsy findings confirming the diagnosis of this rare and unusual affection.

REPORT OF CASE

History.—E. L., a Norwegian tailor, aged 48, entered the Easton Hospital, 8:30 p. m., Oct. 28, 1919, complaining of "liver trouble," and extreme and progressive weakness. There was nothing noteworthy in his family history. He had had mumps and whooping cough in childhood; his past medical history was otherwise unimportant so far as known. He had been in fairly good health until about six months before, when he began to experience constant muscular fatigue, independent of exertion, and to be subject to spells of faintness, dull headaches and pain in his shoulders. These spells of faintness were often accompanied by shortness of breath, palpitation, chilliness, nervousness and dull cerebration. There was little or no cough or sputum. He had frequent attacks of indigestion, associated with epigastric pain and occasionally vomiting. His appetite of late had been poor, and his bowels more or less constipated. For the past six months, he had been growing progressively weaker, and on admission his weakness was extreme. Coincidentally with the beginning of his weakness, his skin became brownish. The pigmentation was gradual in appearance, and steadily progressed in intensity. He was told by friends that it was due to "liver trouble."

He smoked heavily and used alcohol quite freely. There was no history of venereal infection or of any accidents or operations.

Physical Examination.—The patient was apparently well nourished and well developed. The brownish pigmentation of the skin was more marked on the face, upper chest and hands, and there were many spots of deeper brown on the abdomen. There was slight, if any, pigmentation in the mouth. There was no dropsy or edema, and no glandular enlargements. The pupils were equal, and the reaction to light and distance was good. The conjunctivae were slightly icteric, and the finger nails somewhat cyanosed. The cardiac impulse was neither visible nor palpable. The heart was not enlarged, but its action was very feeble. The first sound at the apex was distant, of poor muscular quality, and was accompanied by a faint systolic murmur, which was not transmitted. Both lungs showed extensive infiltration, chronic in character, especially marked at the apexes. There were harsh exaggerated breath sounds, but no râles. The xiphoid cartilage was unusually prominent, and the costal arches wide and flaring. The abdomen was negative, except for the spots of deeper pigmentation just mentioned. There was a cystic tumefaction over the right instep, and there were some scattered yellowish spots on both feet. The swelling over the right instep was painless, and when it was punctured, clear serum escaped. The patellar reflexes were exaggerated. The blood pressure was very low: systolic 85 mm. of mercury, and diastolic 75 (?). The radial pulses were equal, small and of very low tension. The temperature was 98, the pulse 96, and the respiration 24. The urine showed a faint trace of albumin but no casts. No blood count was made. The patient was put on tincture of digitalis, 5 minims, every three hours, alternated with $\frac{1}{60}$ grain of strychnin sulphate subcutaneously. Twenty-four hours after admission the patient became pulseless, went into coma, and died suddenly at 10:30 p. m., October 29.

Necropsy Findings.—October 31, the lungs were found to be anthracotic. The right lung showed numerous miliary tubercles scattered throughout all the lobes, with several small areas of calcification in the upper lobe and a calcareous plaque, about 2 mm. in diameter, at the extreme apex. The pleura on the right side was greatly thickened, and there were adhesions between the costal and visceral layers. Numerous miliary tubercles covered the diaphragmatic surface of the pleura on the right side, and tubercles were also found on the under surface of the sternum. The left lung presented a crater-like ulceration at the apex, about 3 cm. in diameter, with an irregular surface and ragged margins. Section revealed many miliary tubercles, with here and there a calcareous nodule—evidence of healed lesions. The lower lobe and pleura were comparatively free from tubercles. The heart was negative except for some roughening of the mitral leaflets. The abdominal viscera were surrounded by considerable fat. The spleen was about twice its normal size, and on section appeared quite friable, but free from tuberculous deposits. The other abdominal organs, except the suprarenals, showed nothing abnormal.

Suprarenals.—The left suprarenal was many times its normal size, and about three times as large as its fellow on the opposite side. On section, both presented an appearance not unlike that of brain tissue. There was great atrophy of the cortex, and extensive and diffuse fibrocaseous degeneration of the medullary portion, with only minute islands of the original gland tissue remaining. Microscopically, the capsule was seen to be thickened. The histologic distinction of the various zones of the cortical portion could not be made out. A number of small, but typical, tubercles occupied that portion of the cortex corresponding to the zona glomerulosa of the normal suprarenal gland. The medullary portion was the seat of a uniform and diffuse caseation.

COMMENT

This history of a condition with an obscure and insidious onset, with profound and progressive asthenia, general debility, feeble heart action and circulation, low blood pressure, nervous and mental depression,

digestive disturbances and a brownish pigmentation of the skin, immediately brings to one's mind the characteristic syndrome of Addison's disease. The finding at necropsy of tuberculosis of the lungs and of the suprarenals, together with enlargement of the spleen, completes the clinical picture of this rare disease. The very low blood pressure was probably due to an alteration, insufficiency or total suppression of the internal secretion of the suprarenal bodies in consequence of their destruction by tuberculosis. The sudden death precluded any attempts at suprarenal treatment. It is doubtful, however, if such therapy could materially influence the course of the disease in a person whose system had been irreparably damaged by grave and extensive lesions of tuberculosis. The strange feature in this case is the absence of a history and symptoms of pulmonary tuberculosis.

CONTROL OF DIPHTHERIA BY CULTURES OF THE NOSES AND THROATS OF SCHOOL-CHILDREN

L. B. GLOYNE, B.S., M.D.

Health Commissioner

KANSAS CITY, KAN.

The importance of taking swabs from the throats of schoolchildren for the controlling of diphtheria has not been fully recognized by a number of public health officers. In one section of Kansas City, Kan., called Argentine, we have a district that is isolated by natural boundaries. The Kansas River bounds this district on the north and east, while large hills form a natural boundary on the west and south. The retail trade, the milk supply and the school system are all confined within these limits.

Oct. 1, 1919, we had fourteen cases of diphtheria in this district and none in the rest of the city. We took cultures of the schoolchildren, 367 in all, and found thirty-four carriers. One of these was a child who had had diphtheria one month previously and had been released from quarantine after having had only one negative culture. This child had been given antitoxin at the time he was suffering clinically from diphtheria. The physician in charge thought that because antitoxin had been given, the diphtheria bacilli were killed, and the child was safe to return to school.

We placed these carriers in quarantine and required two negative cultures, taken in the homes, from each of these before they could return to school. Only two new cases developed in this community. One was in a child who had had a positive culture, and the other was in the home of a carrier. In the rest of Kansas City, Kan., scattered in all districts, thirty-three new cases soon developed.

The only one of these carriers who was given the antitoxin was the child who developed diphtheria clinically. All the rest cleared up entirely within three weeks, only throat swabbing, gargles and nose syringing being employed. We all doubt the efficacy of this treatment, but we cannot completely disregard our findings in these cases.

CONCLUSIONS

1. The swabbing of the throats of the children should be a measure adopted at the outbreak of a single case of diphtheria in a school.

2. The quarantine of carriers is as essential as is the quarantine of those suffering from diphtheria, in the controlling of an epidemic of diphtheria.

3. Two negative cultures should be required as the minimum from all children who have had a positive culture. A negative culture means something, but does not have the significance that a positive culture has.

4. Antitoxin has a very definite place in giving immunity against diphtheria, but it does not kill the diphtheria bacillus; so those who have had diphtheria may continue to be carriers for an indefinite time, if great care is not taken in getting at least two negative cultures from them.

5. Carriers usually clear up entirely without the use of antitoxin.

A CASE OF CEREBROSPINAL MENINGITIS DUE TO A DIPHTHEROID BACILLUS*

GEORGE F. DICK, M.D.
CHICAGO

While the part played by pseudodiphtheria bacilli in pathologic processes has been much discussed, they have not been recognized as the cause of meningitis, and those found in the nose are usually considered unimportant. Cases such as the one reported here are doubtless rare; but they are important in their bearing on the pathogenic possibilities of pseudodiphtheria bacilli.

REPORT OF CASE

A white man, aged 49, admitted to the service of Dr. James B. Herrick, June 20, 1919, with a family and personal history which gave no information bearing on this illness, two weeks before admission had fallen in the bathroom as the result of a shock received from a defective electric fixture. Three days after the fall he began to complain of headache and "seemed feverish." After ten days of persistent headache, he was brought to the hospital.

He was a well developed, well nourished man. The mouth temperature was 104.8 F., the pulse 88, the pharynx was red, the tonsils were small, the teeth were in bad condition and the cervical glands were palpable. There were dulness and subcrepitant râles over the left lower chest anteriorly, and in the axilla. The patient was drowsy, the knee and ankle reflexes were active, and flexion of the neck increased the headache. Roentgenograms of the head revealed no fracture. The erythrocyte count was 3,980,000; the leukocyte, 12,600, and hemoglobin, 65 per cent. The urine contained a trace of serum albumin and some leukocytes, but no casts.

The patient's condition grew progressively worse, and he died five days after admission, on the fifteenth day of the disease.

Spinal puncture on admission yielded a cloudy fluid containing 740 leukocytes per cubic millimeter, 54 per cent. of which were polymorphonuclear neutrophils, and the rest lymphocytes. The sediment was blood tinged. The ammonium sulphate test for globulin was positive, and the colloidal gold test indicated meningitis (0011234432). Wassermann tests of the cerebrospinal fluid in 0.2, 0.5 and 1 c.c. amounts were clearly negative. No tubercle bacilli were found in direct smears of the sediment. A guinea-pig inoculated subcutaneously and intraperitoneally with the sediment, and killed at the end of six weeks, showed no tuberculous lesions. Organisms were found in Gram's stains of direct smears of the cerebrospinal fluid. They were gram-positive, short, diphtheroid bacilli which most frequently occurred in pairs, end

to end. They were often within the leukocytes. In methylene blue stains they did not show polar bodies, and were shorter than the usual forms of diphtheria bacilli.

Aerobic and anaerobic goat blood agar slants and agar shake cultures were made of the fluid. At the end of twenty-four hours' incubation, all tubes contained in pure culture the gram-positive bacillus found in direct smears. In the shake culture made with 1 c.c. of the cerebrospinal fluid, the colonies were so numerous that it was impossible to count them. The bacillus grew both aerobically and anaerobically on the surface of goat blood agar, producing a delicate grayish film, or isolated, slightly convex, grayish colonies less than a millimeter in diameter. The blood was not changed. The growth on goat blood agar was more luxuriant than on plain agar or Loeffler's serum. The bacillus grew but produced no acid or gas in maltose, raffinose, saccharose, lactose, salicin, mannite, dulcitol, inulin, galactose, or dextrin azolitmin broth. In glucose azolitmin broth, it produced acid without gas. It had no effect on milk. Broth cultures were clear, with a finely granular sediment. In twenty-four hour old cultures the bacillus was not motile.

A guinea-pig inoculated intravenously with two twenty-four hour slants of the original culture died twenty-two hours later. There was a marked fatty degeneration of the liver, and a blood-tinged cerebrospinal fluid, which contained the bacillus in pure culture. Two guinea-pigs were inoculated intraperitoneally with a forty-eight hour broth culture of the organism, and one of them also received diphtheria antitoxin; neither of these pigs died.

Cerebrospinal fluid obtained from the patient three days later showed a negative Wassermann test in 0.2, 0.5 and 1 c.c. amounts. There were no tubercle bacilli in the smears. Cultures contained numerous colonies of the bacillus described. No other organisms were found in any of the cultures.

A blood culture the day following the first lumbar puncture showed about one colony of a gram-positive bacillus from each cubic centimeter of blood. Morphologically and culturally, it was identical with the organism found in the cerebrospinal fluid. A Wassermann test of the blood was negative.

COMMENT

The organism described differs from the diphtheria bacillus in the absence of polar bodies; failure to acidify maltose and dextrin; and in being not pathogenic for guinea-pigs on intraperitoneal injection of a forty-eight hour broth culture.

Ebersson¹ has made an attempt to group diphtheroid organisms. He finds that strains isolated from the eye and nose are usually in the nonfermenting or in the glucose splitting group. The bacillus found in this case of meningitis resembles in morphology and staining properties Hofmann's type of pseudodiphtheria bacillus. It constantly fermented glucose with the production of acid. The pathogenicity of the bacillus for guinea-pigs was discovered only by intravenous inoculation: according to the method usually employed for testing the virulence of diphtheroids, it would be classed as nonvirulent.

On the whole, it is probably best considered as a pseudodiphtheria bacillus closely related to that described by Hofmann. It may be pathogenic for man, as in this case it was doubtless the cause of the fatal meningitis; and is pathogenic for guinea-pigs on intravenous, but not on subcutaneous or intraperitoneal inoculation.

637 South Wood Street.

1. Ebersson, Frederick: J. Infect. Dis. 23:1 (July) 1918.

Diagnosis of Tuberculosis.—The diagnosis in the early stage of tuberculosis must and should often be made before the bacillus can be found in the sputum and before the examination of the chest can give any help.—*Bull. Main State Dept. of Health*, October, 1919.

* From the John McCormick Institute for Infectious Diseases and the Presbyterian Hospital.

A PLASTIC OPERATION FOR THE CURE
OF URETHRAL STRICTURE

MAXIMILIAN STERN, M.D.

NEW YORK

In view of the fact that external urethrotomy can never promise a lasting benefit and is never performed with the hope of effecting a cure, it is my opinion that it should be replaced by an operation that is logical to that end.

Russell's partial resection, Marion's radical resection and Cabot's plastic operation are operations which have advantages over external urethrotomy, but which are more or less difficult of performance, because of injury to the corpus spongiosum which causes hemorrhage and obscures the field.

In a previous communication¹ I reported four cases of urethral stricture, with acute retention of urine, treated without external urethrotomy, and I made reference to an operative procedure, which I thought, at that time, promised lasting results.

In that communication there was a report of one case of urethral stricture in a patient on whom previous external urethrotomy had been performed and who had a frankly cicatricial stricture at the bulb. With the operation that I am about to describe, this patient was apparently cured, as a recent examination has proved.

PURPOSE OF THE OPERATION

By the method that I am about to describe it is purposed to excise the strictured floor at the bulbomembranous junction without inflicting injury to the overlying structures or to any other portion of the urethra.

Figure 1 indicates the location of strictures most commonly encountered in their relation to the anatomic structures overlying and to the triangular ligament.

The muscle structures are separated, thus exposing the corpus spongiosum, as subsequent illustrations will show. The corpus spongiosum is detached from the triangular ligament and elevated from the urethra, thus exposing the strictured area. This is excised and a repair is made in a horizontal direction, thus preventing any diminution in the lumen of the urethra. The structures overlying are then restored to their normal positions, as indicated in Figure 2. With the indwelling catheter in the urethra for several days and the several layers of tissue securely sutured over the urethral wound, primary union is logical and no escape of urine through the perineal wound should occur.

PREOPERATIVE PREPARATION OF
THE PATIENT

In patients presenting themselves with acute retention of urine and in an anxious and desperate state incident to many sleepless nights and vain endeavor to micturate, it seems inadvisable to introduce the additional risk of an ether narcosis. In such extreme

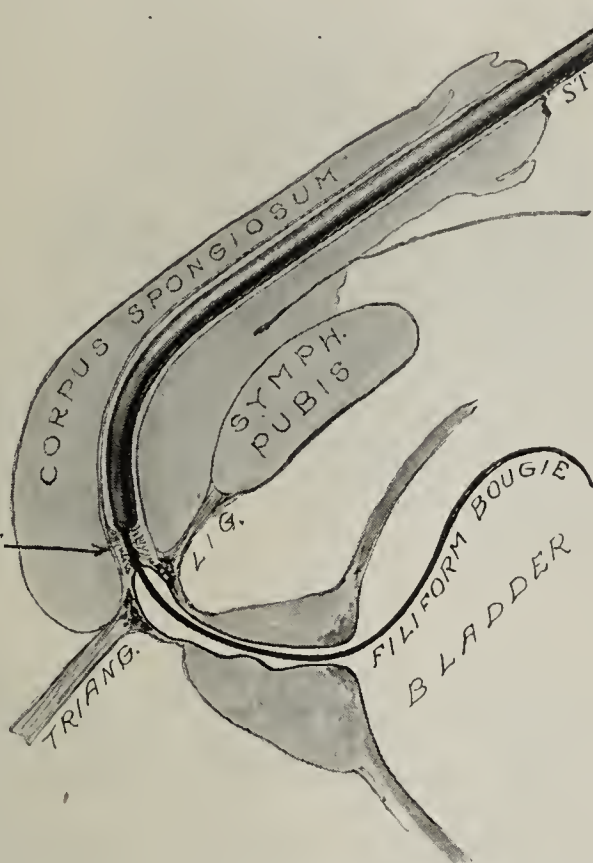


Fig. 1.—Diagrammatic representation of stricture at bulbomembranous junction; staff in urethra arrested at stricture; filiform bougie through stricture into bladder. The corpus spongiosum overlying the stricture and attached to superficial layer of the triangular ligament will be noted.

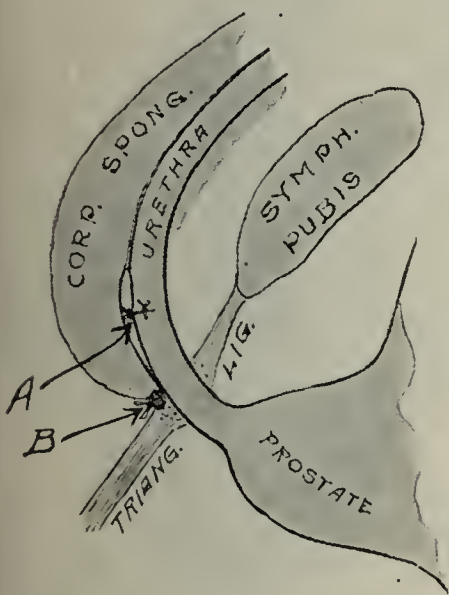


Fig. 2.—Diagrammatic representation of finished operation: A, stricture excised and sutures in place; B, corpus spongiosum replaced over urethra and sutured.

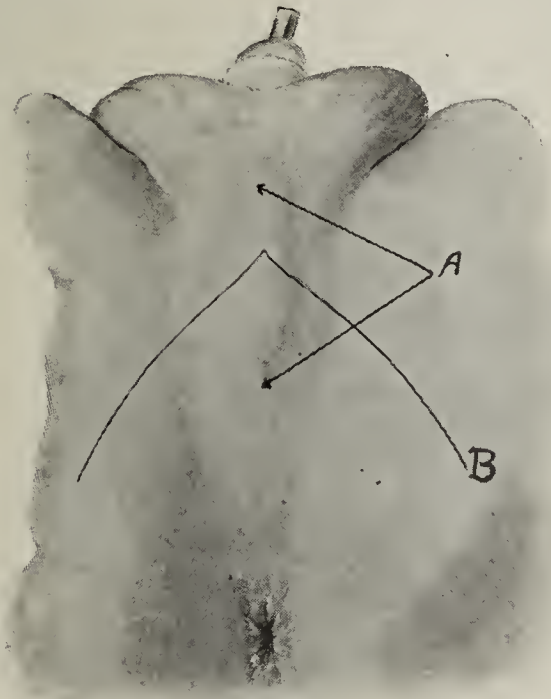


Fig. 3.—A, bulging caused by staff in urethra, the lower arrow corresponding to beak of staff at stricture; B, inverted V incision, its apex well above stricture.

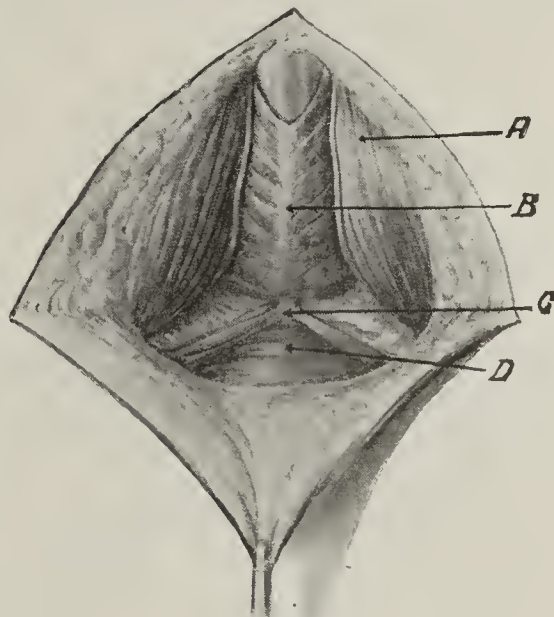


Fig. 4.—Skin flap turned down, exposing structures overlying corpus spongiosum: A, ischiocavernosus muscle; B, bulbocavernosus muscle; C, junction of the superficial transverse perineal and bulbocavernosus muscles on corpus spongiosum; D, levator ani muscle.

Since that time an operation has been performed in like manner in six other cases that were not amenable to palliative measures, with results that have seemed perfect.

cases the preliminary introduction of a ureteral catheter through the stricture with the aid of the author's instrument, as described in another communication,² will be found a valuable preoperative measure.

1. Stern, Maximilian: Four Cases of Urethral Stricture with Acute Retention of Urine Treated Successfully without External Urethrotomy, *Internat. J. Surg.* 32: 180 (June) 1919.

2. Stern, Maximilian: The Easy Penetration of Urethral Strictures: Operating Urethroscope of the Gerringer Type, *J. A. M. A.* 73: 1360 (Nov. 1) 1919.

The rehabilitation of the patient and the amelioration of cystitis and urethral edema will do much toward making a radical operation successful. These can be accomplished only by giving the patient several days of respite from his vesical urgency. Through a ureteral catheter the urine dribbles away into a receptacle, and uninterrupted sleep can be obtained.

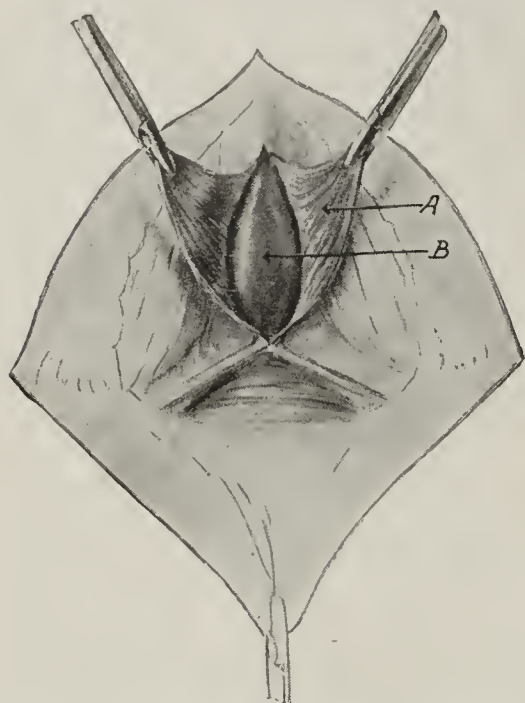


Fig. 5.—A, bulbocavernosus muscles separated and held apart, permitting corpus spongiosum (B) to protrude.

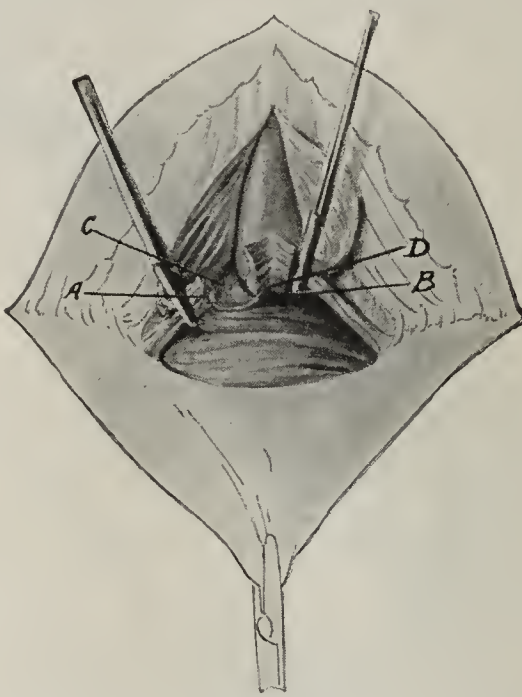


Fig. 6.—B, clamps grasping junction of bulbocavernosus and superficial transverse perineal muscles near their attachment to corpus spongiosum; A, right side severed, exposing C, superficial layer of the triangular ligament; D, muscle stump remaining attached to corpus spongiosum.

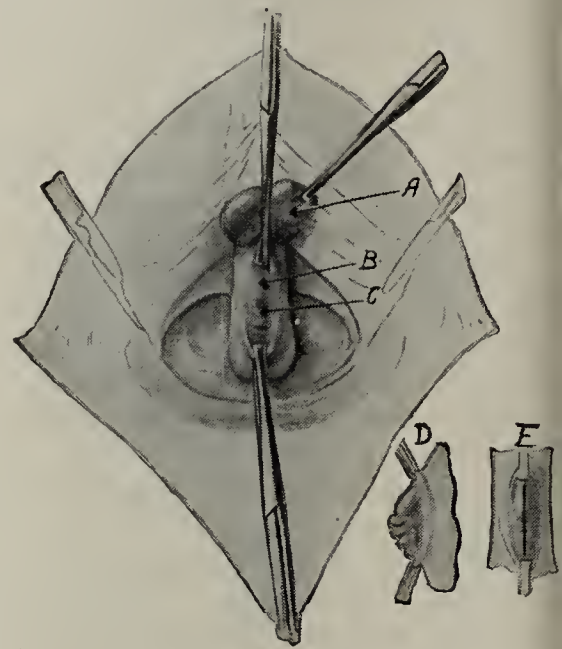


Fig. 7.—A, corpus spongiosum elevated, exposing urethra; B, beak of staff engaged in stricture in urethra throwing it into folds; C; D, same, lateral view; E, Allis clamps placed above and below stricture and line of incision.

The back pressure on the kidneys is relieved and the general condition of the patient is improved.

THE OPERATION

The patient is placed in an exaggerated lithotomy position, with a sandbag under the buttocks, in order to bring the perineum into a higher plane than a vertical one—almost approaching the horizontal. An inverted V incision is made, the apex of which corre-

sponds to a point about 1 inch above the position of the beak of the staff in the urethra, its lower arms extending nearly to the tuber ischii (Fig. 3). The skin flap is dissected carefully, so as not to injure the thin muscle layers overlying the corpus spongiosum (Fig. 4).

perinei muscles. At this point they are firmly fixed with the superficial transversus perinei muscles to the corpus spongiosum. A hemostat is placed so as to grasp the insertion of these two muscles on either side and an incision is made mesial to the

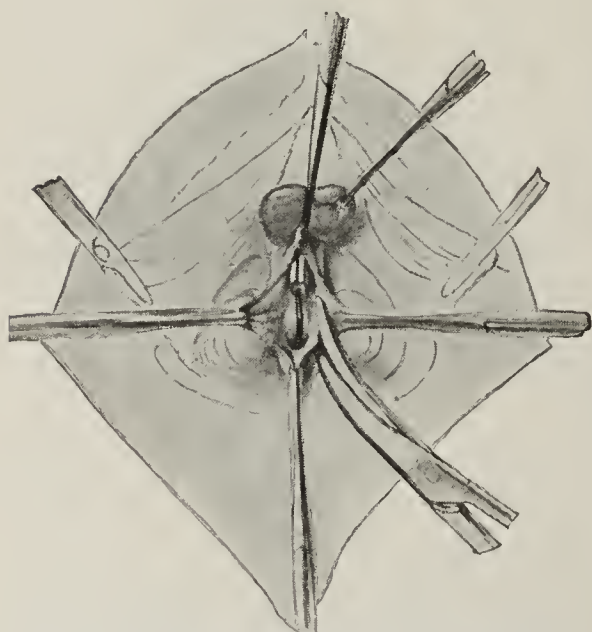


Fig. 8.—Urethra opened; staff and filiform exposed; left stricture bearing flap being removed.

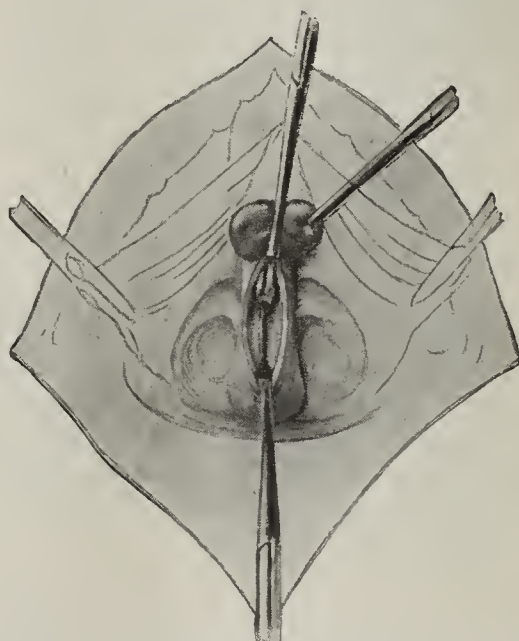


Fig. 9.—Same as Fig. 8; aperture in urethra after removal of stricture tissue may be seen.

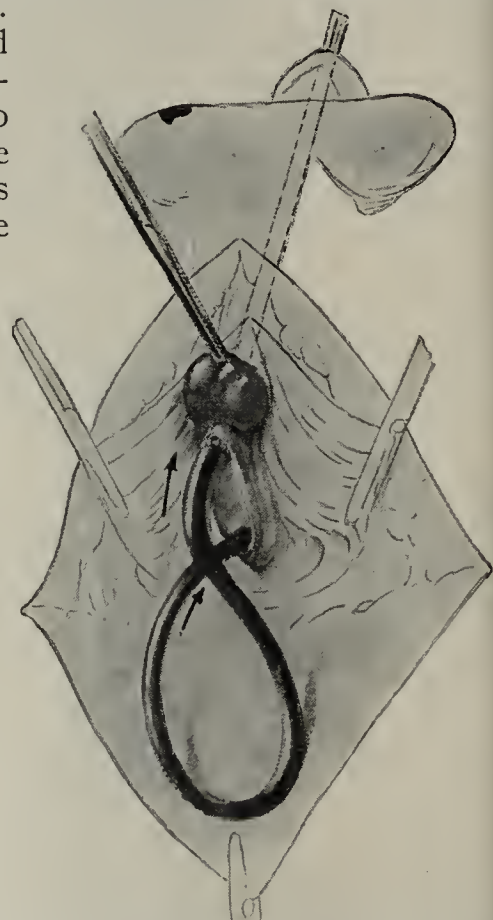


Fig. 10.—Soft rubber catheter inserted into bladder; open end of catheter slipped over beak of staff about to be drawn up through urethra.

sponds to a point about 1 inch above the position of the beak of the staff in the urethra, its lower arms extending nearly to the tuber ischii (Fig. 3). The skin flap is dissected carefully, so as not to injure the thin muscle layers overlying the corpus spongiosum (Fig. 4).

hemostats, so as to leave a muscle stump attached to the corpus spongiosum (Fig. 6). Two lateral spaces now appear beside the "butt-end" of the corpus spongiosum, into which the finger easily penetrates to the superficial layer of the triangular ligament, and it will be observed that the cor-

pus spongiosum is fixed to this structure. With the aid of scissors the elevation of the corpus spongiosum from the triangular ligament and from the urethra itself is easy of accomplishment. This procedure is carried as far as may be necessary, that portion of the urethra in which the staff is arrested and a short distance above it, being thus exposed. The

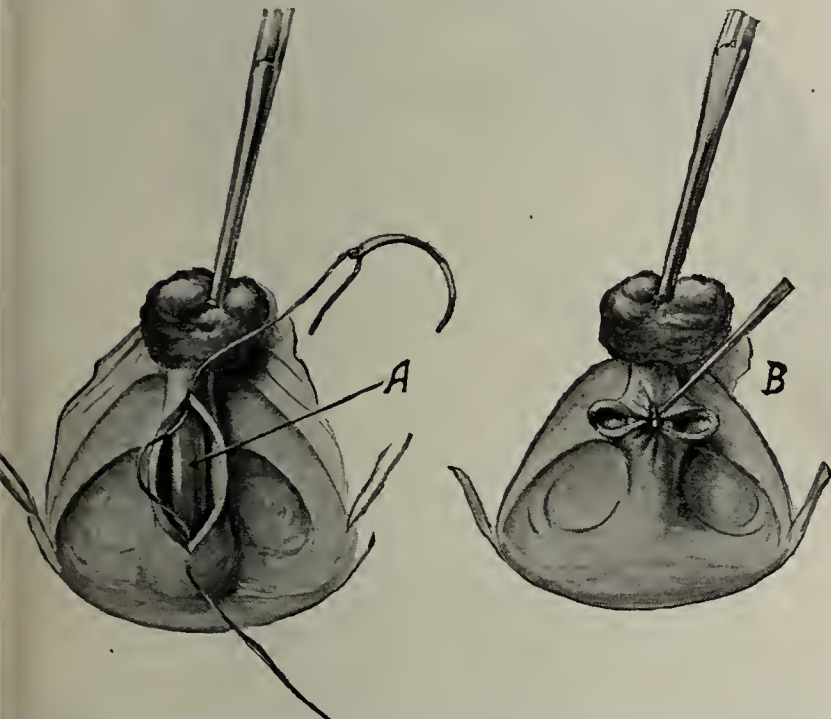


Fig. 11.—A, catheter in urethra; first suture placed for approximation of upper and lower angle of wound; B, suture tied.

strictured urethra is now exposed to view, and when the tip of the staff is pressed downward the urethra below the point of engagement will pucker in advance of it (Fig. 7).

Two Allis clamps grasp the urethra, one above the strictured area and the other well below it. A linear incision in the midline is made between these two points, by which the strictured area is opened. Allis clamps are attached to the free edges, the interior of the urethra being thus exposed, while the beak of the staff and the filiform are brought into view (Fig. 8). These two lateral flaps are removed with scissors, an ovoid fenestra being left in the urethra (Fig. 9). A rubber catheter, size 22 F., is now inserted into the bladder and the filiform removed. The open end of the catheter is slipped over the beak of the staff, and withdrawn through the urethra (Fig. 10). Urethral repair must now be made. It will be found that there is ample urethral tissue for the transverse repair without causing even slight tension (Figs. 11 and 12).

REPLACEMENT IN THEIR NORMAL POSITIONS OF ALL THE STRUCTURES OVERLYING THE URETHRAL WOUND

1. The corpus spongiosum is attached to the superficial layer of the triangular ligament by two sutures of fine catgut.
2. A single suture is placed in such a manner (Fig. 13) as to bring the two bulbocavernosus muscles and the transversus perinei muscles in apposition with the muscle hump remaining on the corpus spongiosum. This suture also includes the levator ani, which frequently tears away when the transversus perinei muscles are severed.

When this suture is tied, the structures are restored to their original positions and the union of the bulbocavernosus muscles completes the muscular repair (Fig. 14).

The skin flap is now replaced with interrupted silk or linen sutures. It will be observed that there are three distinct coverings over the urethral wound. The close apposition of these structures may be confidently expected after from forty-eight to seventy-two hours, during which time the catheter remains in the urethra. After the expiration of this time, no urinary leakage is to be expected, and the patient is permitted to void.

POSTOPERATIVE TREATMENT

The indwelling catheter is fixed to the glans so that the eye of the instrument is situated just inside the internal vesical sphincter and fastened with an elastic device

manufactured for that purpose, or by any of the methods improvised by urologists. It is allowed to remain in situ for forty-eight hours, the patient being cautioned during this time not to make any urinary effort. At the expiration of forty-eight hours the catheter is slowly withdrawn, while a gentle stream of hot boric acid solution is flowed through it. A sterile catheter is then inserted and allowed to remain twenty-four hours. This concludes the third postoperative day. On the fourth postoperative day the patient is catheterized every four hours or when request is made. On the fifth day, voluntary micturition is permitted.

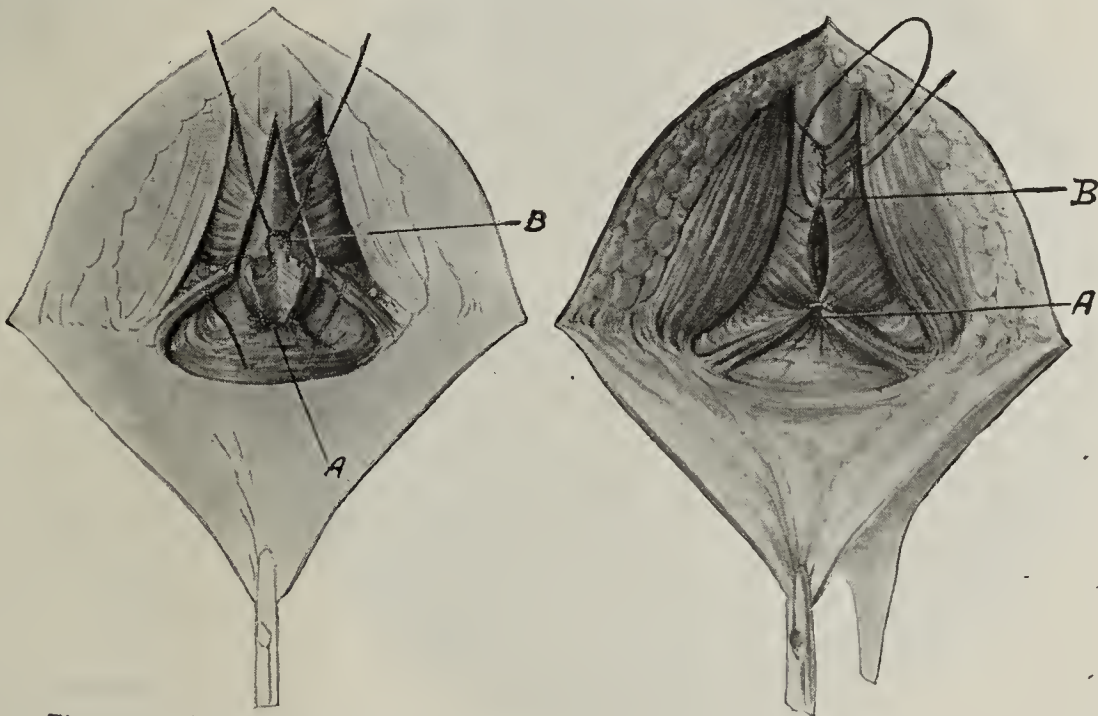


Fig. 13.—A, corpus spongiosum replaced over urethral wound and sutured to superficial layer of triangular ligament B, single suture so placed as to restore all muscle structures to their original positions over "butt-end" of corpus spongiosum.

Fig. 14.—A, suture tied; B, union of bulbocavernosus muscles.

The care of the perineal wound includes certain important considerations in order to accomplish primary union. In a moist, bacteria-laden area, frequent changes of dressings must be made and perspiration prevented, if possible by avoiding heavy bedclothes.

Immediately after the operation, it is my practice to cover the operative field with an unguent, comprising paraffin, wax and petrolatum, which acts not only as an occlusive covering, but also as an antiseptic, in that it envelops any organisms present in the skin and renders them inert.

A sound (24 F.) is passed on the tenth day, and one of larger size a week later. It is my experience that no further instrumentation is necessary.

CONCLUSIONS

1. Since all, or nearly all, strictures occur anterior to the superficial layer of the triangular ligament, this operation can easily reach them. Extravasation of urine or infiltrating abscesses are not to be feared in a surgical procedure that does not disturb the membranous or prostatic urethra lying posterior to the triangular ligament.

2. An operation which is directed precisely to the diseased area, and which does not inflict injury to any other part of the urethra, must be conceived as a logical step toward a cure, and as superior to procedures heretofore in vogue.

219 West Eighty-First Street.

CARCINOMA OF THE EXTERNAL EAR

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KANSAS CITY, MO.

To the uninitiated, the successful treatment of early, superficial carcinoma of the external ear may seem a comparatively simple matter; but after one has acquired a little experience in combating even the



Fig. 1.—Basal-cell carcinoma of helix: A, epidermis; B, connective tissue of derma; C, masses of cancer cells; hematoxylin-eosin stain; low magnification.

milder type of the disorder in this region, a pessimistic attitude generally replaces the former optimistic one.

The difficulty of bringing about a cure in these cases is largely due to the fact that the skin lies very close to the cartilage; and even if the latter escapes direct

cancerous involvement, the chronic inflammatory changes to which it is subjected, together with the poor blood supply, prevent prompt healing, even after the removal of the parent cause of the trouble.

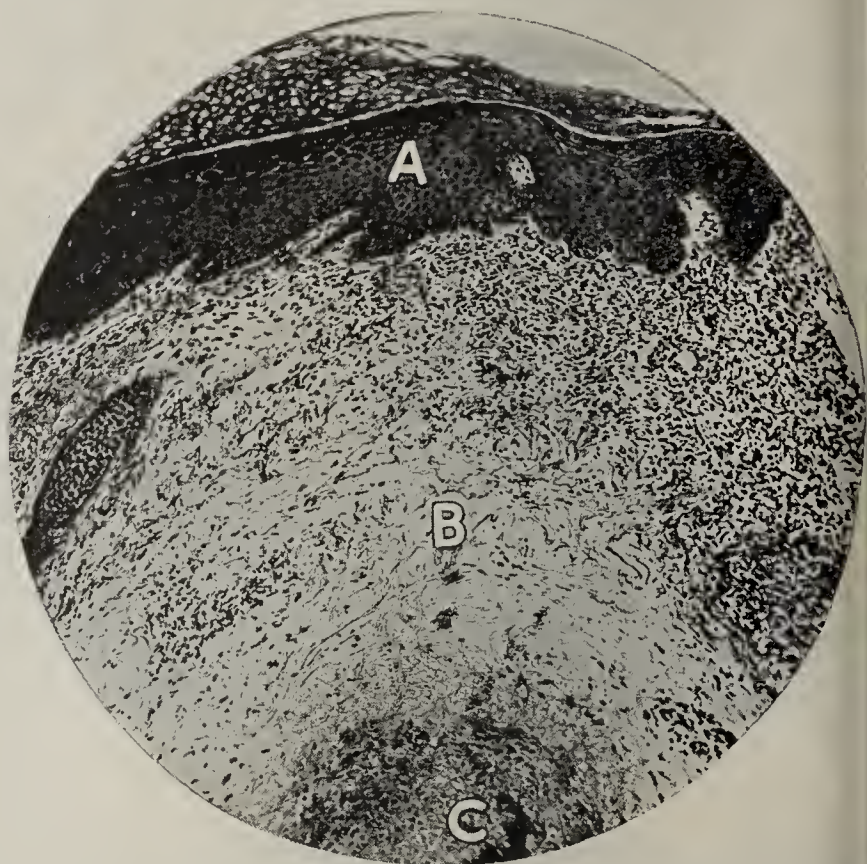


Fig. 2.—Very early basal-cell carcinoma of ear, showing effects of radium treatment: A, cellular infiltration; B, changes in connective tissue; elastic fibers broken and twisted; C, cartilage; hematoxylin-eosin stain; low magnification.

During the past two years, I have had opportunity to study seventeen cases of carcinoma of the ear. All the patients were men. The youngest was 28, the oldest 81 years of age. In five cases studied microscopically, all the growths were of the basal-cell type.

Owing to the character of the structures involved the histologic picture differs in some minor respects from that seen in basal-cell carcinoma of other parts of the body.

In thirteen instances, the growths had developed from seborrheic keratoses, usually of the keratotic variety, and in nearly every case there was a history of primary injury, such as a cut or a bruise. Eleven of the patients, at one time or another, had suffered from frost-bite.

All the lesions developed at some point above the level of the floor of the external auditory meatus. In no instance was the lobe primarily involved. The upper portion of the helix was a favorite site for the development of the lesions, probably because of its exposed position. Occasionally the cranial surface of the pinna was attacked, in one instance following an injury from a spectacle bow, and in another a slight cut from a razor, inflicted by a barber while trimming the hair.

There was a striking similarity in the case histories. Following a slight injury of the ear, generally at some point on the helix, the patient developed a small, superficial ulcer, which healed very slowly. The retarded healing was, in a measure, the fault of the patient himself. If the scab was not deliberately scratched off, because of the slight irritation to which its presence gave rise, it was accidentally rubbed off by the too vigorous use of a rough towel. Finally, the lesion apparently healed, but a small keratosis developed at the site of the former wound.

The growth of the little hyperkeratotic tumors may have been retarded by the frequent application of grease or petrolatum; but in the course of months or years, a large percentage of them became malignant. The subjective symptoms were at first comparatively slight, and consisted of itching and burning of variable degree, easily allayed by a mild antipruritic. Later, as the carcinoma developed, and the deeper structures were invaded, the patients frequently complained of a throbbing, penetrating pain, which often involved the entire side of the head, and which only narcotics would relieve.

The plan of treatment varies with the character, stage and extent of the lesion. In growths of the prickle-cell type, early and radical excision is the best and safest course. The basal-cell tumors are less serious, and more weight can be given to the importance of a good cosmetic result when it comes to dealing with them.

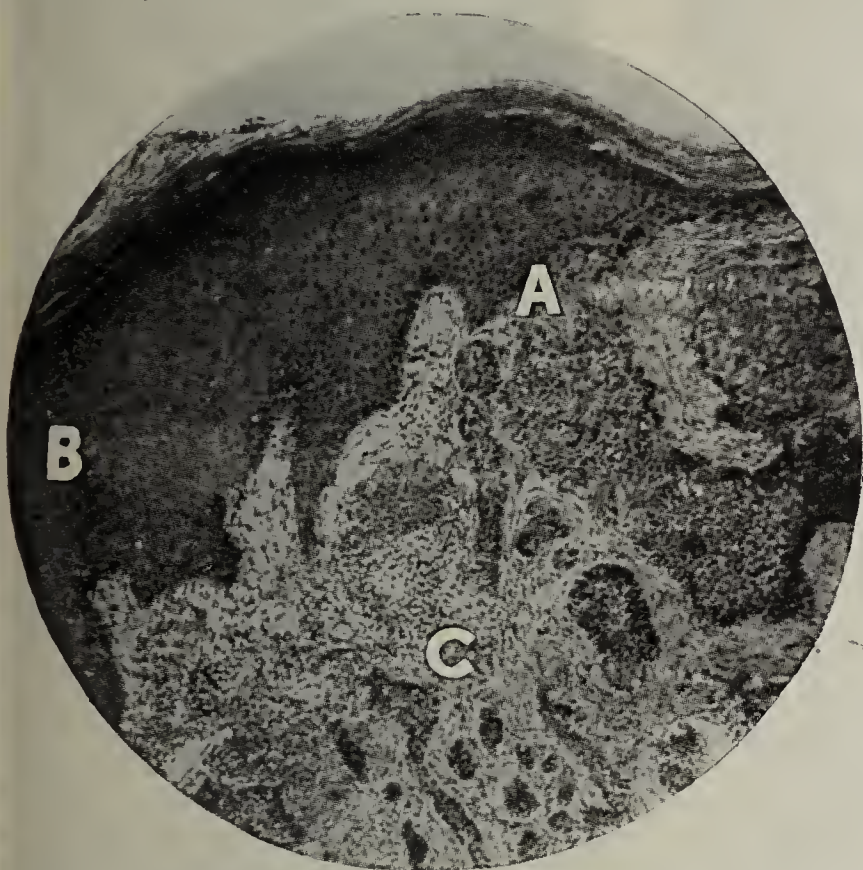


Fig. 3.—Early basal-cell carcinoma of ear: *A*, strand of cancerous tissue extending downward from basal layer of epidermis into corium; *B*, thickened prickle layer; *C*, derma, with masses of new growth lying between the bundles of connective tissue; hematoxylin-eosin stain; low magnification.

As a prophylactic measure, the ears should be suitably protected from cold during the severe winter months. Frost-bite may not be a direct causative factor, but repeated injury from this source undoubtedly predisposes to cancer.

Even slight lacerated wounds of the ear should receive proper surgical attention. In treating rough, jagged injuries of the skin, the edges should be pared down and carefully approximated, and the wound properly closed and dressed.

Seborrheic keratoses, which are often the precursors of the more serious lesions, can sometimes be successfully combated by the daily use of a mild keratolytic, such as salicylic acid ointment (10 per cent.). Also carbon dioxid snow is a valuable remedy in some instances, although its field is limited, and in suspicious or advanced lesions, more harm than good is liable to follow its use. This is due largely to the fact that its destructive action is not that of a direct escharotic, but a sequel to the acute inflammatory changes that follow intense refrigeration.

The widely dilated vessels, together with the lowered vitality of the immediately adjacent tissues, tend to extension rather than eradication of the lesions attacked. The actual cautery is a much better agent

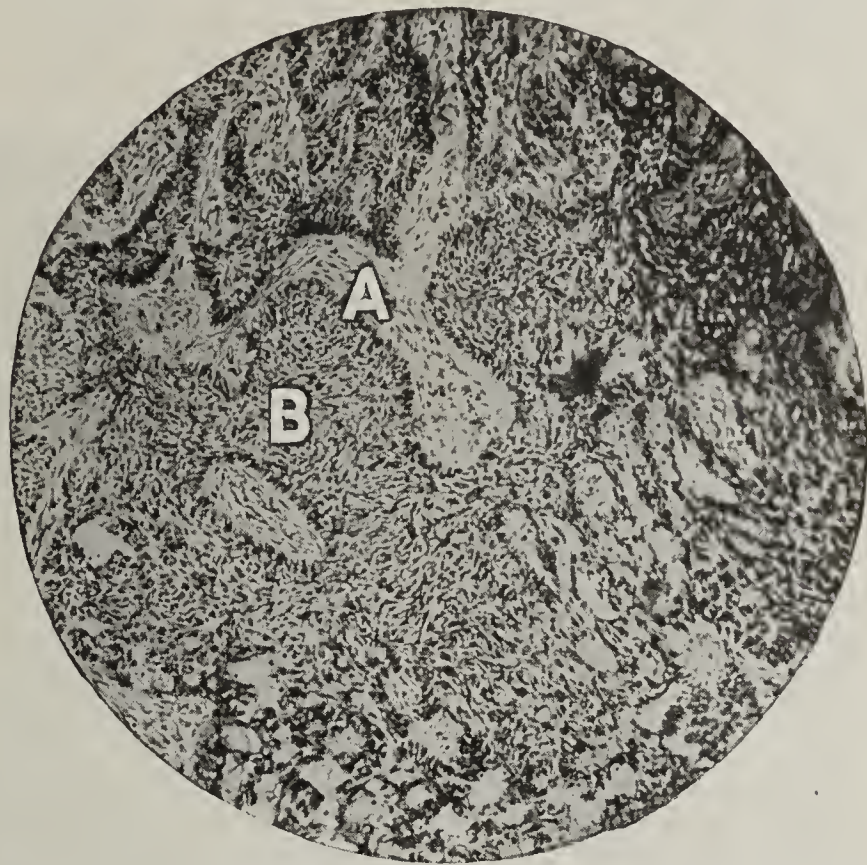


Fig. 4.—Late basal-cell carcinoma of ear: *A*, connective tissue of derma: only a bridgework remains; *B*, masses and strands of cancer cells penetrating the fibrous network; hematoxylin-eosin stain; low magnification.

in these intermediary or frankly malignant cases. The destruction of the lesion is certain, for, as Hazen, Bloodgood, MacKee and others have shown, the efferent vessels are promptly sealed off, and the liability to



Fig. 5.—Late basal-cell carcinoma of ear, showing involvement of cartilage at *C*: *A*, disorganized strands of connective tissue; *B*, irregular masses of cancer cells; hematoxylin-eosin stain; moderate magnification.

peripheral extension is reduced to a minimum. Unfortunately, the tissues in this vicinity do not heal very promptly following actual cauterization, and the ensuing burns are frequently a source of extreme discomfort to the patient. Fulguration is painful and, as

ordinarily practiced, unreliable. Of the various chemical caustics, arsenous oxid, as recommended by Robinson, is probably the best; but when employed in this locality, it is open to the same objection as the actual cautery.

Prior to the involvement of the cartilage, many of the cases respond very satisfactorily to roentgen-ray

In the treatment of basal-cell carcinoma of the ear by means of radium, a severe reaction is seldom necessary, and in the superficial cases should always be avoided. The skin in this region is very thin, and affords only slight protection to the underlying structures. The inflammatory changes that occur as a result of prolonged exposures subside very slowly, and weeks



Fig. 6.—Basal-cell carcinoma of ear involving cartilage of eighteen months' duration; very painful.

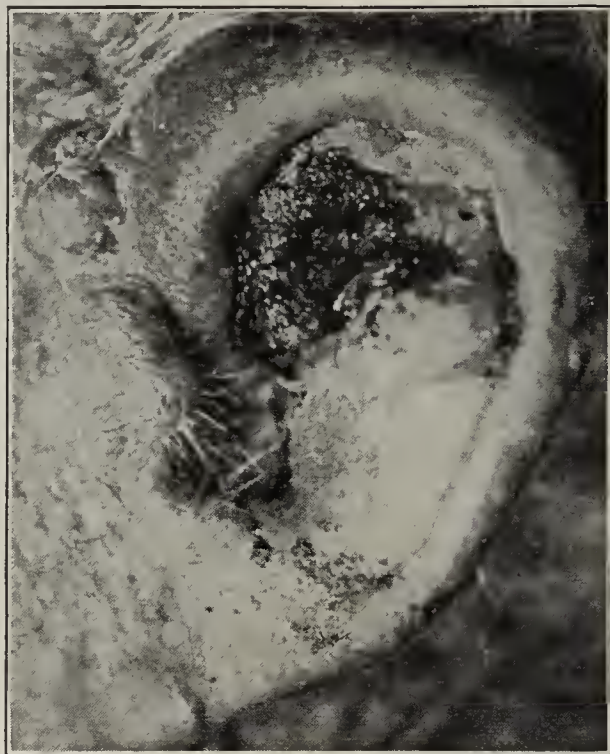


Fig. 7.—Multiple basal-cell carcinoma of the ear; of three years' duration; no lymph node involvement; radical operation, followed by cure.

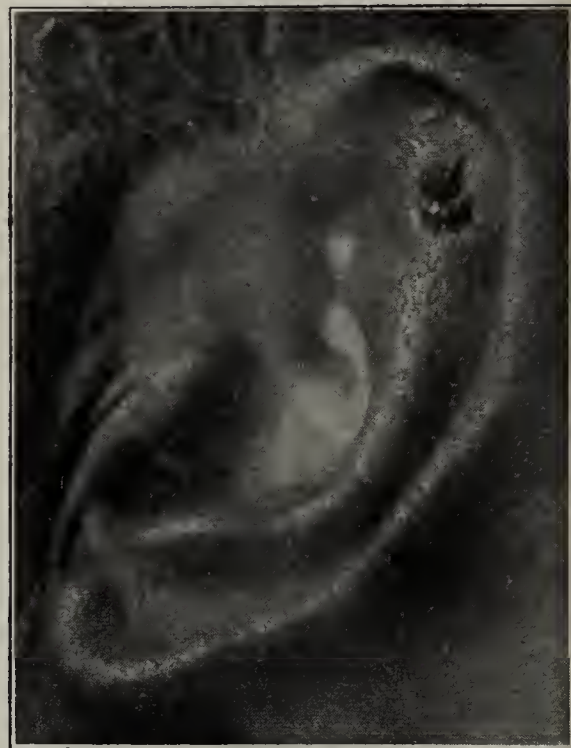


Fig. 8.—Carcinoma of the ear, showing ulcer that remained after radium therapy. Lesion healed under the action of soothing local applications in seven weeks; no recurrence had taken place one year later.

treatment and especially to radium. If the former agent is employed, only the intensive method should be used, otherwise the result is liable to be disastrous rather than beneficial. I once saw a case of superficial carcinoma of the concha which at the time could readily have been successfully removed by a competent surgeon in



Fig. 9.—Basal-cell carcinoma of the ear in a man of 70; the growth was destroyed by means of radium, but the lesion healed very slowly, and was extremely painful.



Fig. 10.—Seborrheic keratosis on helix which developed following slight cut from razor and ultimately became malignant.

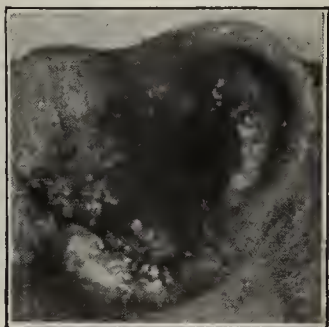


Fig. 11.—Early basal-cell carcinoma of ear, showing condition after patient had received more than 100 exposures to the roentgen ray.

or even months may elapse before the ulcer marking the site of the former carcinoma is entirely healed. The healing process can sometimes be expedited by the cautious use of liquor hydrargyri nitratis, a remedy first suggested to me by my friend, Dr. T. S. Blakesley. The agent is applied by means of a tooth-pick, and its action is promptly halted at the end of one or two minutes by a liberal coating of sodium bicarbonate. Occasionally, diluted citrine ointment (unguentum hydrargyri nitratis, 1 part; petrolatum, 7 parts) will prove helpful at this stage of the disorder. Cleanliness is essential, for, as Dr. Du Noüy has said, the ideal conditions of perfect and rapid healing are realized when a wound is kept practically sterile, or deprived of pathogenic micro-organisms, as cocci, diplococci and streptococci.¹

In those cases presenting cartilaginous involvement, I have found both radium and roentgen-ray treatment useless. Prompt excision is the best and safest plan, and in the hands of a skilled operator, the results are generally good. As a rule, the ensuing deformity is comparatively slight, and the patient is promptly relieved of a disorder that is liable ultimately to prove both distressing and dangerous to life.

about fifteen minutes. Nine months later, I again saw the case, but during the interval the patient had received more than a hundred brief roentgen-ray exposures in and around the affected area. The combination proved too much for him, however, and the man died.

1. Du Noüy, P. L.: *Am. J. Physiol.* **49**: 121 (June 1) 1919, cited in *The Search for Cicatrizing Substances*, editorial, *J. A. M. A.* **73**: 428 (Aug. 9) 1919.

Altruism.—Sympathy for manifest evils, and self-sacrifice for others have no limit when the emotions are directly stimulated.—Brend.

TUMORS OF THE BLADDER

THEIR DIAGNOSIS AND TREATMENT

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AND

ALVIN THOMPSON, M.D.

CHICAGO

Tumors of the bladder comprise but a small percentage of all the tumors of the body, this being variously estimated at from 0.75 per cent. to as high as 5 per cent. of the total number. Of these, approximately one half are malignant, and most of the remainder potentially so, in that they later become malignant.

TYPES OF BLADDER TUMORS

There are two common varieties of bladder tumors: papilloma and carcinoma. The papillomas are fibrous, benign or malignant, and the carcinomas adenoid or diffuse, adenomas being very rare.

Besides these common varieties of epithelial origin, other types of tumor are found occasionally, including myomas, angiomas, fibromas and various types of sarcomas. The papillomatous growths, benign or malignant, are by far the commonest form of tumor found in the bladder. Ewing¹ states that this is due to the structure of the mucous membrane and the physical conditions to which the tumors are exposed. The transitional type of epithelium accounts for the histologic varieties of tumors arising from it. The villous form is probably due to muscular activity and the constant bathing in fluid. Ewing further states that the long confinement of these tumors to the site of origin is probably due to their villous form rather than to a lack of lymphatics, which was once thought to be the reason.

Bladder papillomas occur in various forms, coarse or fine villous growths with more or less narrow pedicles, flat or lobulated forms, or they may be sessile. Papillomas vary greatly in size and are frequently multiple. The commonest location is in the trigonal area, especially about the ureteral orifices and the edges of the trigon. They have been observed at all periods of life, but are commonest after middle life, especially in the sixth decade. They occur about three times as frequently in men as in women. Their course is prolonged, and they have a tendency to remain confined to the bladder. A few of them remain benign for many years, but most of them become malignant eventually. Many are malignant from the beginning.

THE DIAGNOSIS OF MALIGNANCY

The question of malignancy is the all-important point in diagnosis. If a tumor is benign it can be removed by fulguration, and recurrences or additional tumors appearing later can usually be removed by the same means, whereas if it is malignant it is usually resistant to fulguration, and other or additional means must be

used. The macroscopic appearance of a tumor is not a certain guide in judging its malignancy. However, there are certain characteristics which may be taken as evidence of malignancy in papillary tumors, as necrosis or sloughing, calcific incrustations, edema about the base of the growth, nodules in the mucosa near the growth, the presence of an intractable cystitis, an induration felt through the vagina or rectum, and multiplicity or great size and the slow response to fulguration. The sessile growths and the flat warty or the extensive velvety patches on the wall of the bladder are quite sure to be malignant. If a piece is removed through the cystoscope for examination, it may have benign characteristics even though the pedicle or base may be actually malignant. However, the

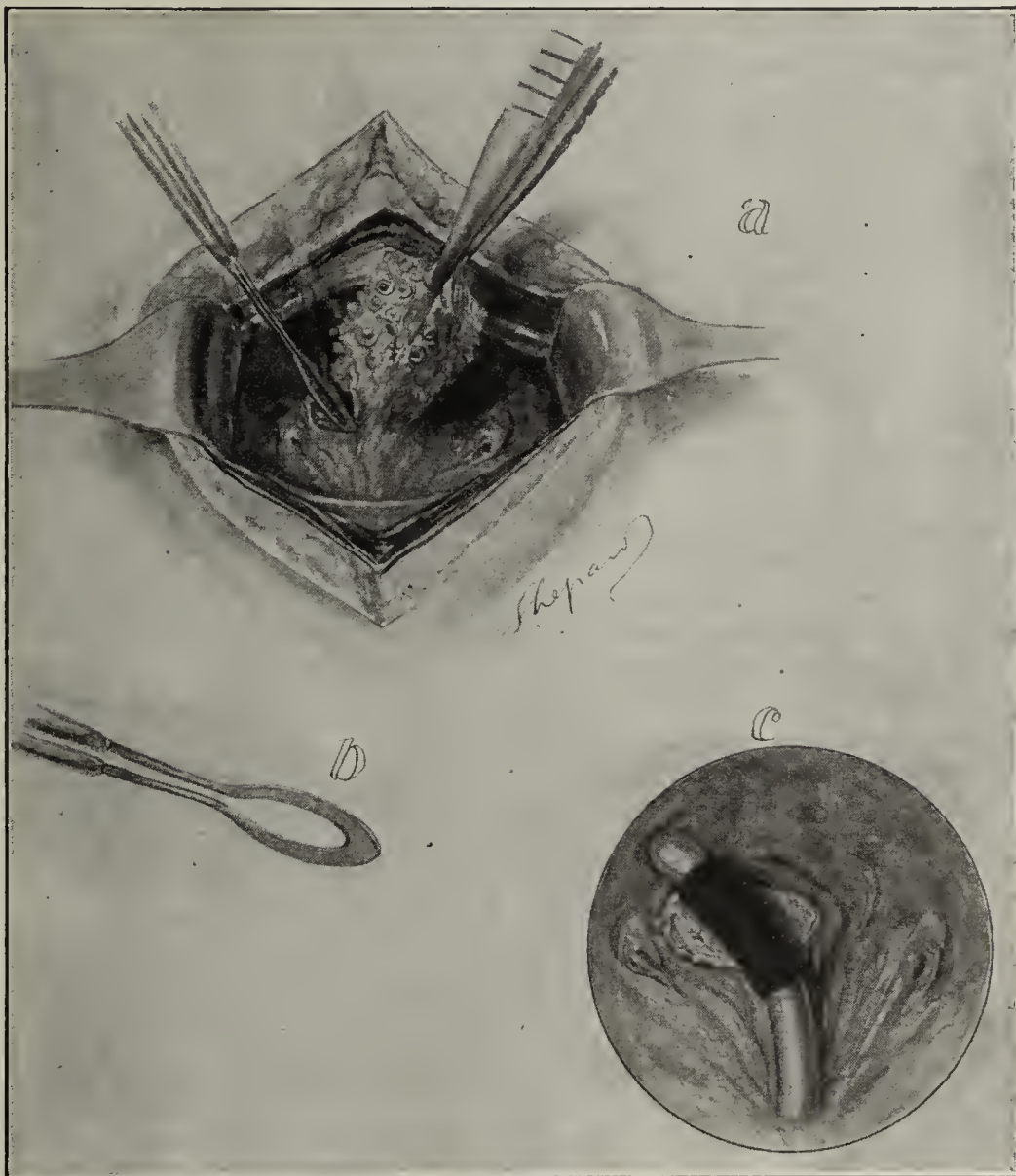


Fig. 1.—Excision of papilloma of bladder with electrocautery knife: *a*, method of grasping pedicle of tumor with forceps and excising it with electrocautery knife; *b*, electrocautery knife; *c*, method of applying radium to former site of tumor.

removed portion may show actual malignancy. Then, of course, the diagnosis is assured. The removed portion may not show well-defined malignant characteristics and still give evidence of malignancy by exhibiting unusual growth capacity. Buerger² gives, in addition to the usual well-defined microscopic evidences of malignancy, these morphologic criteria on which the diagnosis of carcinoma or carcinomatous change in papillomas may be made: "Cells manifesting irregularity in size and shape; nuclei rich in chromatin, deeply staining and of bizarre shape; cells with atypical mitosis; giant cells and multinucleated cells."

Extension of malignant tumors may occur through the bladder wall to other pelvic structures, up the

1. Ewing, James: Neoplastic Diseases, Philadelphia, W. B. Saunders Company, 1919.

2. Buerger, Leo: Tr. Am. Urol. A. 9:14, 1915.

ureter to the kidneys, and along the pelvic lymphatics to the prevertebral lymph nodes. Cases of metastases from bladder tumors have occurred in remote organs; but such metastases are comparatively rare and occur late.

Bladder tumors may be complicated by secondary anemia from hemorrhage, by cystitis, by hydronephrosis complicating tumors which may occur about or within the ureteral orifices, and by renal suppuration. Serious kidney complications may occur in those cases, benign or malignant, wherein blood clots or fragments or parts of the tumor interfere with the emptying of the bladder resulting in back-pressure from retention.

There is one dominating symptom which should be investigated by cystoscopic examination of the bladder without delay, and that symptom is hematuria, especially of the painless intermittent type. Neglect in giving prompt heed to this early warning has allowed too many papillomas to develop undisturbed until the bleeding has become profuse or the later attending symptoms, pain and frequency, have made investigation urgent. By that time the growth may have reached a large size or have become malignant, if not originally so, making the treatment not only more difficult, but too often less effective.

ETIOLOGY

The etiology of bladder tumors, like that of neoplasms in other parts of the body, is not definitely established; but many observers have noted that in a large number of cases there is a definite history of an irritation of some kind, as cystitis or stone. Bladder tumors appear to be common in anilin workers. These observations seem to indicate that irritation may predispose toward the formation of the growth.

Besides these primary growths of the bladder, secondary growths are not uncommon, spreading from the kidney, abdominal or pelvic viscera, and especially from the prostate.

TREATMENT

The treatment of bladder tumors has been more or less discouraging in the past, especially before the day when cystoscopy made early diagnosis possible. The choice of method to be used should be based on the pathology of the tumor. This, as we

have stated, cannot always be determined accurately. If the tumor is thought to be benign, there is no question but that the fulguration method described by Beer in 1910 gives the best results with the least discomfort to the patient and the lowest rate of recurrences. This method is carried out by means of the high frequency current used through an operating cystoscope. The two types of current used in this procedure are the Oudin and the d'Arsonval. The Oudin, or monopolar spark, produces cauterization and coagulation through its marked local action at the point of application. The d'Arsonval, or bipolar spark, has a

deeper and less local action, producing coagulation by heat and a more extensive destruction. For this reason it must be used with more caution, especially when its action is directed to the base of the tumor close to the bladder mucosa, in order to avoid too deep destruction of the bladder wall. These fulguration treatments are repeated at intervals varying from five days to two weeks, depending on the local reaction following each treatment and the progress made. Almost all benign papillary growths are readily removed by this method, and even some of the malignant papillomas are wholly removed, though usually more slowly and with greater likelihood of recurrence.

Surgical removal of both benign and malignant bladder tumors is attended by a large number of recurrences. It seems that fragments of the tumor even of the benign type are readily transplanted, producing recurrences either at the original site or in other parts of the bladder. Gardner,³ in an analysis of 666 cases of bladder carcinoma, shows that in 224 cases of partial resection of the bladder there were recurrences in 43.7 per cent. of the cases;

while in 442 cases in which only the growth was excised, the percentage of recurrences was 88. Comparison of these two surgical methods shows that the more radical removal gives the better results. Total cystectomy in these cases is very discouraging, as there is not only a very high immediate mortality but the results otherwise are not favorable. Gardner³ reports ninety-six cases of benign papillomas removed by excision with recurrences in 35.5 per cent., while in sixty-

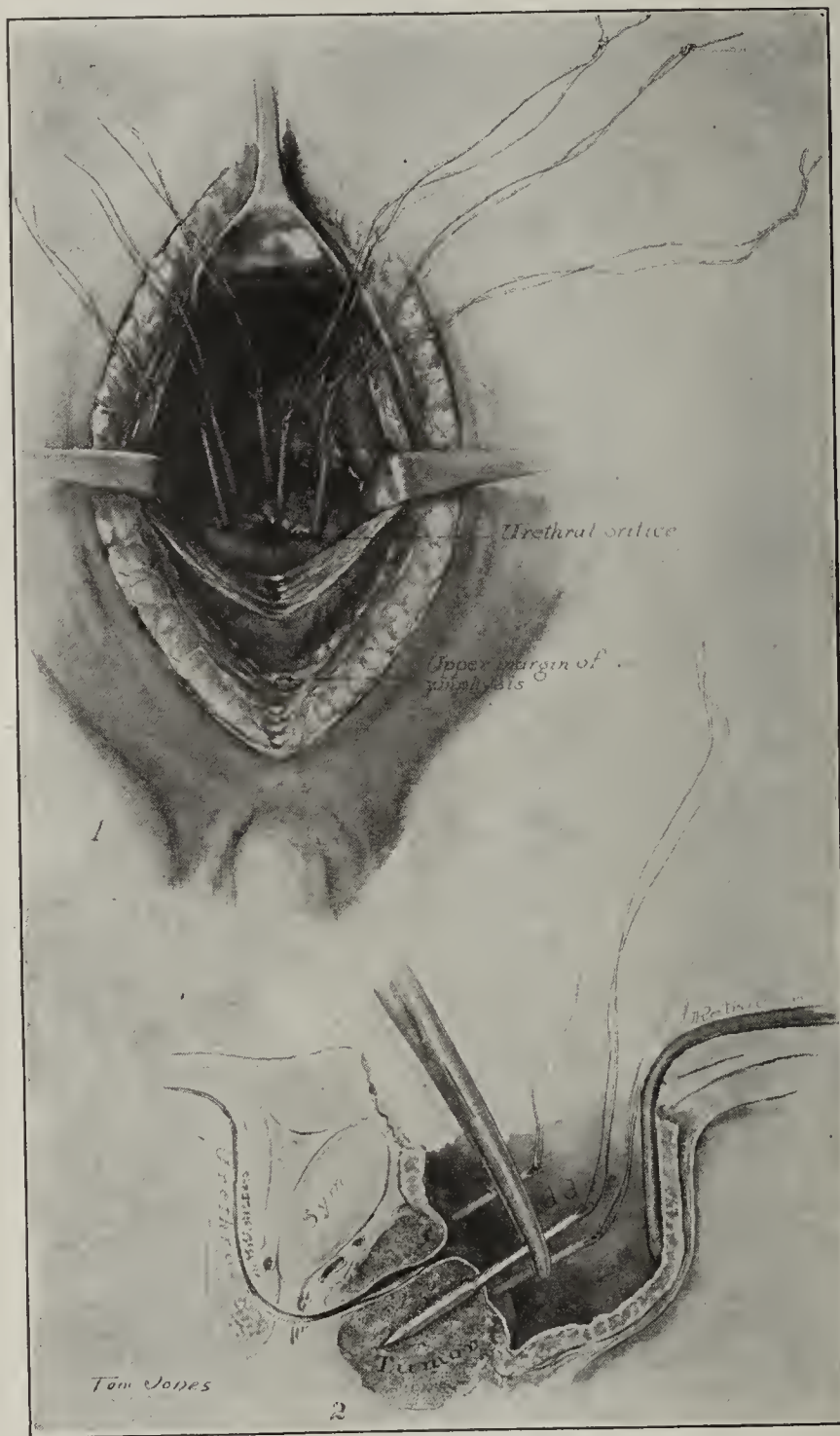


Fig. 2.—Carcinoma of the prostate: 1, radium needles inserted into prostatic tumor through cystotomy incision; 2, schematic sagittal section illustrating the direction in which the needles are pushed, and the depth to which they are carried.

3. Gardner, J. A.: Tr. Am. Urol. A. 9: 226, 1915.

one cases treated by fulguration only 13.1 per cent. recurred. This shows a decided advantage in favor of the fulguration method in benign papillomas.

Radium has now been used for a number of years in the treatment of malignant bladder tumors; and the results, while far from being satisfactory, have been somewhat encouraging. The unsatisfactory results are partly due to faulty application of the radium. As radium acts in proportion to the inverse squares of the distances from the tissue acted on, it is obvious that it must be placed directly on the tumor or inserted into the mass to get the maximum effect. It may be applied in a specially constructed sound or cystoscope and kept in place on the tumor by holding the instrument with special clamps designed to keep it from moving (Young).

AUTHORS' PROCEDURE

Our usual procedure with a tumor thought to be malignant, if located in an accessible part, is to excise the growth and with it resect the entire bladder wall of that region, using an electrocautery knife in preference to the ordinary scalpel. Those tumors located in parts of the bladder not easily accessible, such as the trigon about the internal urethral orifice or closely associated with the ureters, are excised through the open bladder, carrying the incision down to the muscularis (Fig. 1 *a*), using the electrocautery knife (Fig. 1 *b*), following which radium is applied (Fig. 1 *c*) to the denuded surface from which the tumor has been removed.

Sessile growths and those with broad pedicles may be treated by introducing needles containing radium directly into the growth. When this is not possible, the radium may be applied on a staff or sound either through a suprapubic opening or through the urethra, care being taken to keep it in contact with the involved area.

Many of the unsatisfactory results in the past may be charged to the inaccurate placing of radium in the bladder. It is of the utmost importance, therefore, that the radium be not only placed accurately but also kept in place throughout the entire exposure.

It is known that commonly prostatic cancer spreads to and involves the bladder wall; and for this reason, the treatment of certain types of prostatic cancer will be included in this paper. Radical excision of a malignant prostate cannot be carried out with any reasonable degree of safety and success, except in very early cases. Those cases of cancer of the prostate which are not too far advanced and which show no evidence of metastasis are thus treated with radium:

A suprapubic cystotomy is made with a liberal high opening so as to give easy access to the involved blad-

der neck. A bimanual examination is made to determine the limits of the tumor. By means of a needle carrier, a number of hollow needles, each containing a capsule of radium, are inserted directly into the mass about 1 cm. apart in different directions (Fig. 2). A silk guide attached to each needle extends out of the suprapubic wound, by means of which the needle is withdrawn (Fig. 3). These needles are left in place from twelve to twenty-four hours, depending on how much exposure is desired. It is surprising how little reaction occurs from these long exposures as compared to the extensive burns which we see on the mucous membrane of the bladder and rectum when the radium is placed directly on these membranes. One such exposure usually causes the removal of most of the upper part of the tumor, though it may be repeated in a few weeks if found necessary. As most of the tumors begin in the lower part of the gland, a second introduction of

needles is made into this part of the tumor by making a dissection through the perineum, exposing the prostatic mass, and introducing the needles carrying the radium into the mass from below.

We have not described this method of attacking the malignant prostate with the intention of reporting cures, because the time since operation has been too short (about two years); however, our results are sufficiently encouraging to warrant continuation of the method.

32 North State Street.

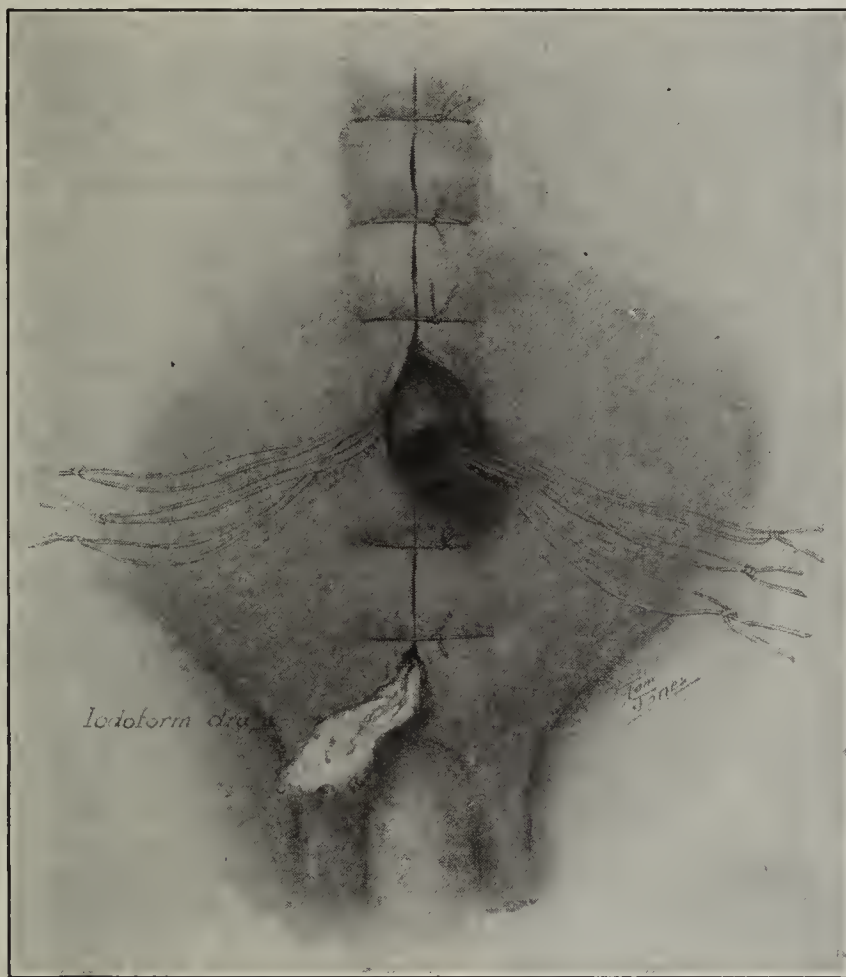


Fig. 3.—Wound with drainage, the threads attached to the radium needles having been carried out through the drainage opening.

National Department of Health.—In the creation of a department of health, all of the bureaus or parts of bureaus and divisions and boards could be easily adjusted without the loss of prestige by any of them. Some functions could be consolidated into single bureaus.

The plan should be constructive of the agencies we now have, certainly not destructive. The Public Health Service, owing to its size and present organization, would constitute the main foundation on which to construct such a department. Its mobile corps of medical and sanitary personnel is an excellent one to expand so as to include in the commissioned corps all of the scientists and specialists transferred from the other departments in grades according to the nature of the work and experience of each. Furthermore, some provision should be made to commission high class specialists in the various branches of preventive medicine from civil life, in grades commensurate with their ability and experience. The mobile corps, as expanded, should continue under the supervision of the surgeon-general, and should perform all of the medical and sanitary duties for all of the bureaus and divisions of the department. The provisions for one well organized, disciplined mobile corps of highly trained health experts to perform all of the medical and sanitary duties for all of the bureaus and divisions will doubtless be an effective agency in coordinating the work of those bureaus.—B. S. Warren, *Pub. Health Rep.*, Dec. 5, 1919.

TWO CASES OF MONGOLIAN IDIOCY
IN THE SAME FAMILY*

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Recent endeavors to throw light on the etiology of Mongolian idiocy have resulted in considerable literature on the subject during the past few years. The rarity of its occurrence in more than one child in a family is an observation of universal note.

Goddard¹ has collected the histories of 322 cases of Mongolian idiocy, and in not one instance was there a history of more than one Mongolian child in the family. McClelland² remarks that it is a common observation that in no family was more than one Mongolian idiot encountered. Shuttleworth³ says that the production



Two Mongolian children of the same family and their next older brother, showing characteristic mongolian facies, spatula hand, and short thumb and little finger.

of more than one Mongol in the same family is a great rarity, he himself having heard of only two cases and having never seen any. He also reports the case of twins, one normal and the other a Mongol, as does Swanberg.⁴ Dr. Max Schlapp, in the course of examining mental defectives for the city of New York, has seen over 500 Mongols, and in a personal communication to me states that he has never seen two Mongolian children in a family. Van der Scheer⁵ has collected

reports of two families, one with two Mongols and the other with three, and states that he has been able to find on record the reports of several families in which more than one child presented the disease.

As this type amounts to about 5 per cent. of all types of imbecility, it assumes the proportion of a considerable problem, and a determination of its exact etiology will be a large factor in its prophylaxis.

The controversy over the relation of syphilis to Mongolian idiocy is not yet definitely settled; but to those whose experience has been large, the occurrence of a positive Wassermann reaction is only a coincidence. The proportion of positive Wassermann reactions obtained from groups of Mongols should be over 80 per cent., instead of under 15 per cent., if the causative factor were syphilis, and so far the brains of Mongols have failed to show the characteristic pathologic changes of the disease. Two families showing the apparently intimate relation between the two conditions are reported in the literature: In one, reported by Van der Bogert,⁶ first, a syphilitic child was born, second, a normal child, and third, twins, one of whom was a syphilitic of the Mongol type. Babonnieux and Villette⁷ tell of a family of four Mongolian children whom they consider congenital syphilitics because of two maternal miscarriages, the death of six other children when infants, the presence of hutchinsonian teeth in these offspring, and a buccal leukoplakia in the father.

The family that has come under my observation is interesting not only from a statistical point of view, owing to the fact that two of the children present classical textbook pictures of Mongolian idiocy, but also from an etiologic point of view, since it presents two possible etiologic factors.

REPORT OF CASE

Family History.—The father, an Italian by birth, aged 49, formerly a bookkeeper, now a postoffice clerk, came to this country before his children were born. His ancestors were of an intelligent class, including lawyers, physicians and druggists, and there is no history of mental disease. The mother, also of Italian birth, aged 42, was the daughter of an engineer. Her mother had diabetes. She is large, obese, and has always been well except for frequent frontal headaches. Her pregnancies have been borne without any difficulty, and she has eleven living children whose ages are 27, 22, 20, 18, 17, 15, 13, 11, 9, 7 and 4. Between the last two children, she had two induced miscarriages. All of the children above 15 have finished school and have then taken business courses so that they are contributing their bit to the support of this large family. Their mentality is unimpaired, several of them showing considerable promise. The two youngest children were never considered to be like the others; they were backward in their development and did not resemble the rest of the family, but the parents have noticed a decided similarity in appearance between these two.

History.—Robert P., aged 7 years, was born after normal but rather prolonged labor. He has always been well but slow to develop. He was brought to see me because of his failure to talk, his vocabulary being limited to single words. He is able to call his parents and some of his brothers by name, and he seems to understand a great part of what is said to him. He is easily embarrassed, good natured, and somewhat restless in his activity. Physically he is undersized and bears the following characteristics of the Mongol: He has blepharitis, almond-shaped eyes with oblique palpebral fissures, epicanthic folds and an external strabismus in the left eye; the mouth hangs open; the lips are thick and

* Read before the New York Neurological Society, Dec. 2, 1919.

1. Goddard, H. H.: Syphilis as an Etiologic Factor in Mongolian Idiocy, J. A. M. A. **68**:1057 (April 7) 1917.

2. McClelland, J. E., and Ruh, H. O.: Syphilis as an Etiologic Factor in Mongolian Idiocy, J. A. M. A. **68**:777 (March 10) 1917.

3. Shuttleworth, G. E.: Mongolian Imbecility, Brit. M. J. **2**:661 (Sept. 11) 1909.

4. Swanberg, Harold A., and Haynes, H. A.: A Case of Mongolism in One of Twins, Arch. Neurol. & Psychiat. **1**:717 (June) 1919.

5. Van der Scheer, W. M.: Multiple Cases of Mongolian Idiocy in Family, Nederlandsch. Tijdschrift v. Geneesk. **1**:328 (Jan. 25) 1919; abstr., J. A. M. A. **72**:1114 (April 12) 1919.

6. Van der Bogert, Frank: Congenital Syphilis, Simulating Mongolism, in One of Twins, Am. J. Dis. Child. **11**:55 (Jan.) 1916.

7. Babonnieux and Villette: Arch. de méd. d'enf. **19**:478 (Sept.) 1916.

the tongue is large and protruding, having deep transverse fissures and prominent papillae; the nostrils point forward from a broad, flat nose. The expression is dull and stupid. The skin is soft, dry, and slightly puffy with plenty of subcutaneous fat; the joints are lax, showing a hypotonus. The fingers are short and thick; the thumb is obliquely cut off and the little finger is only half the usual length. Besides these signs he has small genitals with undescended testicles, and until a few years ago he wet the bed. The teeth are very bad, and there is no sign of second dentition as yet.

Edward P., aged 4 years, was born after normal labor. His development was slow. This child wets himself, and is noisy, destructive, and ceaseless in his activity, but is affectionate and good natured. It was most difficult to persuade him to submit to examination and to be photographed. He cannot talk and makes only unintelligible noises. His physical status is the exact counterpart of that of his brother: bullet head, brachycephalic skull, grimacing face with slit eyes, blepharitis, drooling mouth, thick lips, protruding tongue, hypotonus, hand of the typical spatular type, and skin of the same quality as that of his brother. To describe one is to describe the other.

The illustration shows the characteristic facies and the spade hand of the younger, though the difficulty in controlling the children made a better picture impossible. As I could not obtain consent for a Wassermann test, those data are unavailable; but a survey of the family history, with nine healthy children previous to these two, and parents who have no evidence of the disease, seems to be sufficient to exclude syphilis.

COMMENT

In these two Mongolian imbeciles we have the last children of a large family, a potent argument for the theory that they develop from a parent in whom the germ plasm has become defective through exhaustion. A history obtainable in over 50 per cent. of Mongols is that the idiot child was the last one of a large family, when the mother was far advanced in her reproductive life, or else that the child was the product of a marriage union consummated late in life.³

Let us consider this hypophrenic type from the endocrine aspect, for it is almost impossible to observe this peculiar appearing creature without remarking the growth and the tissue abnormalities. For some time the few points of similarity between the Mongol and the myxedematous cretin have been emphasized and made the basis for thyroid medication; but how different is the restless activity of the former from the dull sluggishness of the latter. So far, absolutely no results have been obtained with thyroid feeding in mongolism. In this family there is a strong endocrine heredity especially on the maternal side; her mother had diabetes, and she herself is of a pronounced dyspituitary type with nasal eyebrows, spacing of the incisors, obesity, and frequent frontal headaches. The children with their dry, smooth, hairless skin, prognathous jaw, small stature, abnormal bony growth, and undescended testicles show some very definite signs which could be classed as polyglandular. Therapy along these lines has, thus far, failed to bring about any cures, but further work will, we believe, throw light on this probable etiologic factor.

74 West Forty-Eighth Street.

Aerial Dust.—Establishments devoted to the manufacture of abrasive materials may present conditions in regard to aerial dust content that can scarcely be equaled in any other industry. The study of such conditions and the devising of adequate means for so controlling them as to protect the workers in this trade from the menace of tuberculosis would seem to invite serious attention.—*Public Health Reports*, May 30, 1919.

A CASE OF LUMBOSACRAL PARALYSIS (TRAUMATIC)

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DAVID M. LEVY, M.D.

AND

W. E. TUPPER, M.D.

CHICAGO

The lumbosacral plexus comprises the ventral branches of a portion of the fourth and fifth lumbar nerves and of the three upper sacral nerves. The principal nerves arising from this plexus are the ante-

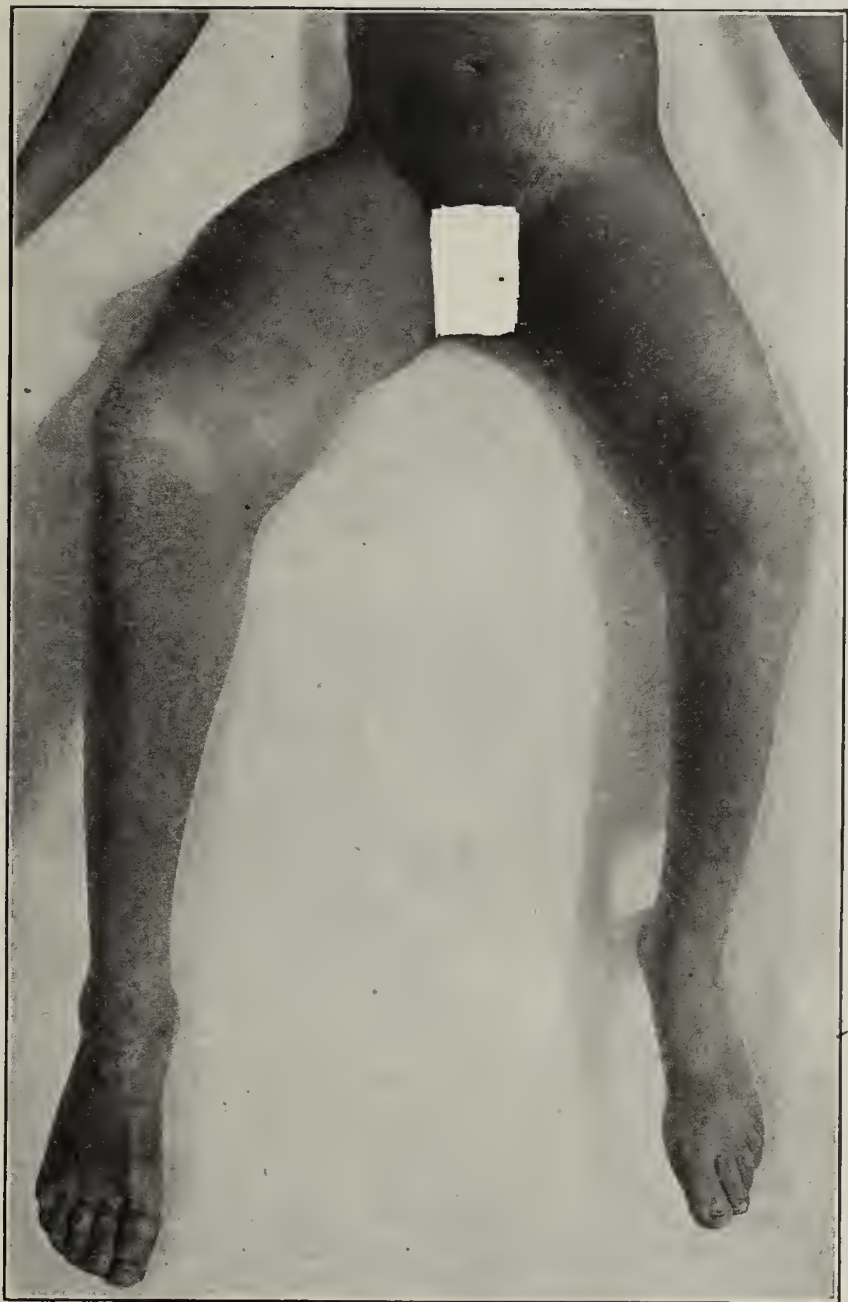


Fig. 1.—Drooping of left foot, and atrophy of entire limb.

rior crural (second, third and fourth lumbar nerves), external popliteal (fourth and fifth lumbar and first and second sacral), internal popliteal (fourth and fifth lumbar and first, second and third sacral) and obturator (third and fourth lumbar). A combined involvement of all these nerves occurred in the case here reported.

REPORT OF CASE

History.—A colored boy, aged 18, a laborer, admitted to the orthopedic service (Dr. Harger), Aug. 19, 1919, complaining of difficulty in walking, stated that about fourteen years before, while in perfect health, he fell on the floor with the legs widely stretched. For nine months he was unable to walk, having been all this time confined to bed. He asserted that up to four years before he had had little difficulty in walking, but

admitted that the left leg was always smaller and weaker than the right. Four years before, this leg became much weaker, and he would fall frequently because of sudden flexion of the knee joint. The whole left leg, he said, had a feeling of

being dead and colder than the opposite one, but there never was pain. The patient had had measles, smallpox, mumps, whooping cough, pneumonia (twice), influenza, gonorrhea (one and one-half years before) and multiple sores on the penis (a year before). The family history was good.

Examination.—The patient looked healthy, and had a marked left scoliosis in the lumbodorsal region; the left side of the pelvis was much lower and the left leg was atrophied, while the right thigh appeared hypertrophied. In standing, he kept the left knee slightly bent and the body bent toward the right (Figs. 1 and 2). In walking, he bent the body forward and to the left, and swung the pelvis, throwing the leg and foot which struck the ground. The muscles of the entire left lower extremity were greatly atrophied, flabby and weak. The leg was much shorter and thinner than the right. The right thigh in the middle measured $25\frac{1}{2}$ inches, and the left, 19 inches; above the patella, 18 and $14\frac{3}{4}$ inches, respectively. The length of the left limb was $33\frac{3}{4}$ inches, that of the right,



Fig. 2.—Atrophy of left leg; tilting of pelvis; bent trunk; scoliosis.

36 inches. The thighs measured in length $18\frac{3}{4}$ inches on the right, $18\frac{1}{2}$ on the left. The measurements of the calf muscles at three levels gave a difference of 3 inches in favor of the right side; above the ankle joint the difference was very slight (a fraction of an inch).

Passive movements of the joints of the affected side were exaggerated and somewhat limited in the ankle. Kernig's, Lasègue's and Patrick's "faber sign" were absent.

Active movements on the same side were all abolished except abduction and flexion of the leg. Thus the patient was totally unable to move, on the left side, the toes or the foot, and could not extend or cross the leg, and adduct or flex the thigh over the abdomen. In contrast to such an extensive motor lesion, the sensory disturbances repeatedly studied in various wards of the hospital were rather mild, in the form of patches of anesthesia and hypesthesia over the dorsal surface of the foot and anterolateral surfaces of the leg.

The affected muscles and nerves showed some electrical changes which were rather indefinite. The muscles supplied by the anterior crural and peroneal nerves, as well as these nerves themselves, gave a normal response to the galvanic current, while the posterior tibial and the obturator gave no response whatever. The faradic current was not available.

The roentgen examination detected no changes in the bones or joints (Fig. 3).

The reflexes, like the Achilles tendon and the knee, were lost on the left, the cremasterics were very inconstant; the plantar was absent, and the Babinski negative. Pupillary and genito-urinary changes were absent.

SUMMARY

The clinical findings can be summed up as a flaccid atrophic, partly degenerative paralysis of the left lower limb, with involvement of the main branches of the great sciatic nerve (external and internal popliteal nerves), anterior crural and obturator nerves. The paralysis was of fourteen years' standing, and occurred after a fall in a 4 year old child with the legs abducted. Recovery occurred nine months after the injury, was never complete, and for the last four years the condition had become worse. The extensive paralysis was associated with comparatively mild sensory and indefinite, rather unusual, electrical changes. Bone changes, in spite of a long duration of the paralysis, were totally lacking.

COMMENT AND CONCLUSIONS

The clinical findings in this patient very much resemble those observed by Lorenz,¹ Bernhardt,² Schuster,³ Bade,⁴ Peltesohn⁵ and others in patients after not altogether successful attempts at reduction of dislocated hip joints. Thus, Lorenz speaks of a "tearing paralysis" (*Zerrungslähmung*) of the sciatic nerve which he has observed twice in 360 cases of so-called

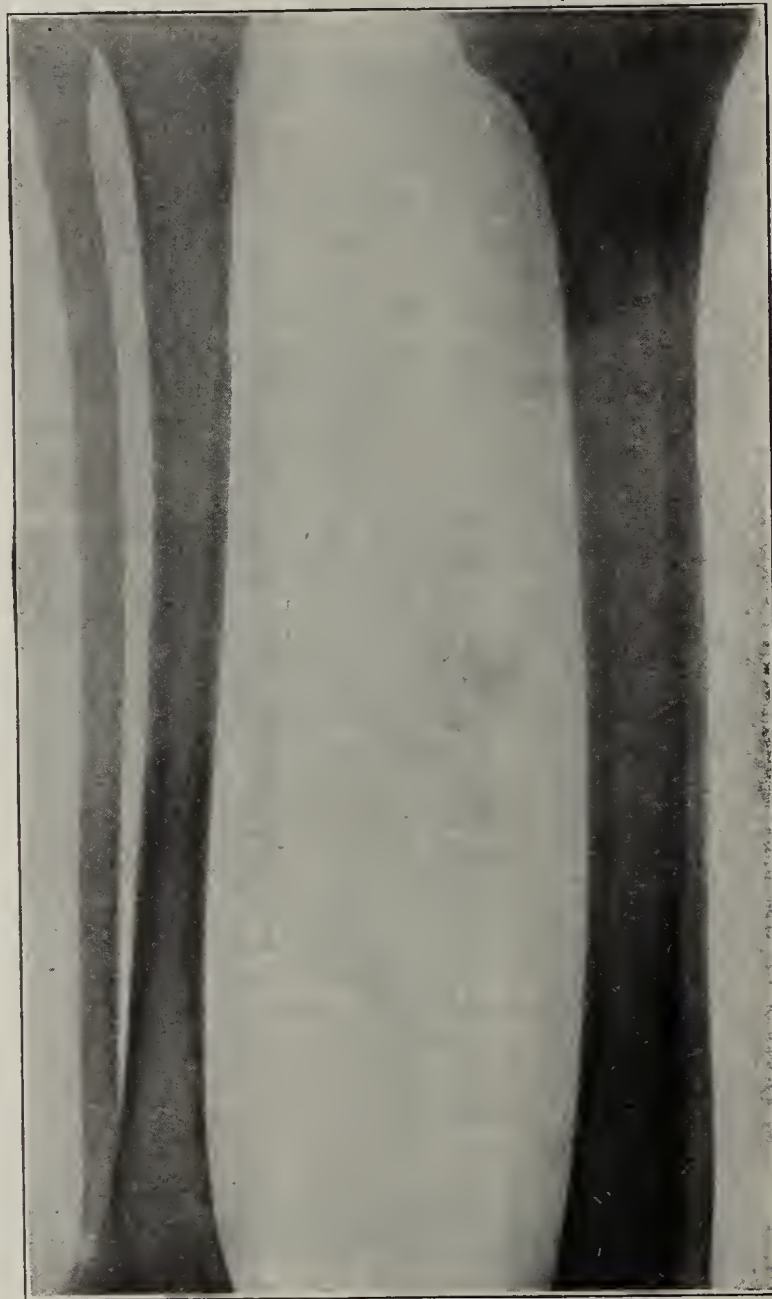


Fig. 3.—Tibia and fibula of affected side, lateral and front views no changes.

1. Lorenz, Adolph: Ueber die bisherigen Erfahrungen mit der unblutigen Einrenkung der angeborenen Hüftgelenksluxationen, *Therap. Monatsh.* **13**: 413, 1899.
2. Bernhardt, M.: Ueber einige seltener vorkommende peripherische Lähmungen, *Berl. klin. Wchnschr.* **28**: 237 (March 7) 1904.
3. Schuster, E.: *Neurol. Centralbl.* **27**: 654, 1908.
4. Bade, Peter: Ueber Lähmungen im Anschluss an die Reposition der angeborenen Hüftverrenkung, *Verhandl. d. Deutsch. Ges. f. Orthop. Chir.* **8**: 198, 1909; *Beilageheft der Ztschr. f. Orthop. Chir.* **24**.
5. Peltesohn, S.: Die Lähmungen im Gefolge der unblutigen Einrenkung der angeborenen Hüftgelenksverrenkung, *Ztschr. f. Orthop. Chir.* **23**: 222, 1909.

bloodless reposition of the hip joint, while in five of his 360 cases there was a paralysis of the quadriceps from the same cause (tearing of the crural nerve), without sensory changes. Bade explicitly states that the forced abduction procedures are the factors which most frequently lead to paralysis (of the crural and sciatic nerves), which he found to occur in 2.1 per cent. of Lorenz's operations.

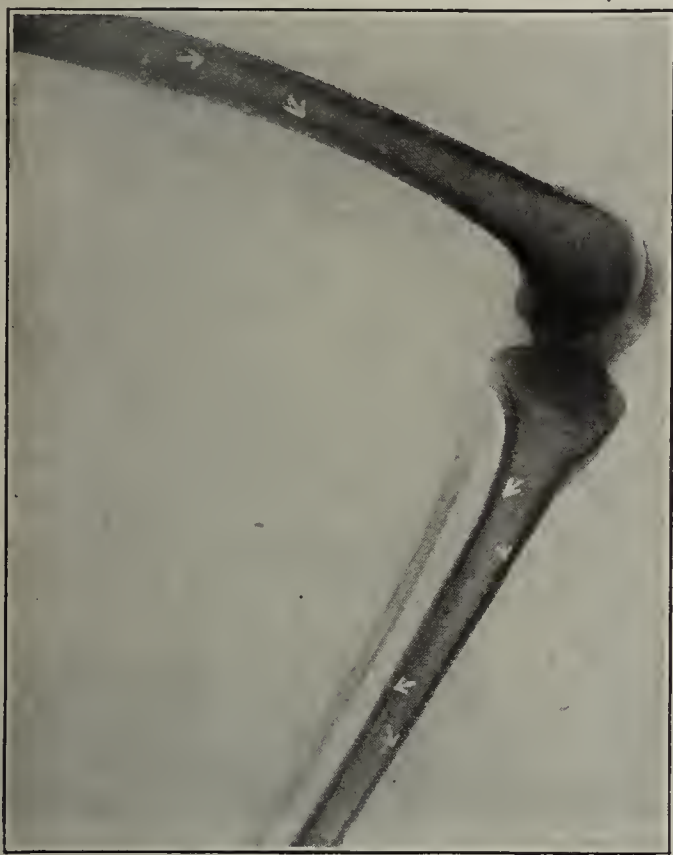


Fig. 4.—Long bones of the affected extremity in an old case of poliomyelitis.

Peltesohn comes to the same conclusion from his extensive clinical and experimental studies, though he admits also the possibility of the compression of the sciatic nerve between the trochanter and tuber ischii. In addition to the sciatic paralysis he and many other orthopedists observed also anterior crural paralysis ("from overstretching" the nerve) without any neuralgic pains or sensory changes. The combined lesion of the sciatic and crural nerves he explains, together with the rest of observers, as a "plexus lesion."

It is unquestionable that in our case, in view of the history of a trauma, long duration of the paralysis (nine months), and the presence of sensory disturbances, mild as they are, the lesion should be placed in the plexus, not in the spinal cord. In other words, it should be considered a peripheral and not a central lesion, as in poliomyelitis. Even if we disregard the sensory symptoms, neither the etiology nor the condition of the bone changes speak for the latter. In poliomyelitis of long duration the bones of the affected limb are thin and smooth, and are deprived of their anatomic characteristics. The bone changes confined to the diaphysis only and sparing the epiphysis, are very well shown in Figure 4, which represents the bone changes in a demented 39 year old patient who was paralyzed in both lower limbs for thirty-seven years. This also followed a fall. Not only the bone changes but also the entire clinical picture in this case⁶ were totally different from the case reported in this article.

31 North State Street—Cook County Hospital.

6. Hassin, G. B.; Lukas, Christine, and Brown, R. O.: Roentgenographic Bone Changes in a Case of Poliomyelitis, *J. A. M. A.* 65: 1459 (Oct. 23) 1915.

Clinical Notes, Suggestions, and New Instruments

VERRUCAE

REPORT OF A CASE

WILLIAM ALLEN PUSEY, M.D., CHICAGO

This case in an Italian boy is interesting, both on account of the excessive number of warts, and the result of the application to them of Vleminckx's solution.

The young man appeared at my office for treatment, September 3, at which time a photograph (Fig. 1) was made. He had a crop of warts that were literally confluent over nearly all of the forehead and temples, and were scattered in large numbers over the rest of the face. The photograph, unfortunately, because of the bad lighting, does not give an adequate idea of the abundance of the lesions. They were as abundant, and as prominent, over the entire forehead as they appear on the right side in the photograph. They made, in fact, a continuous patch three fingers wide below the hairline over the whole forehead. The patient had also a large crop on the backs of his hands.

He was given a solution of 1 part of Vleminckx's solution and 3 parts water, which he applied once daily to the face and hands. In a week he returned. There was a slight scaling dermatitis from the Vleminckx's solution, and a remarkable decrease in the warts. He continued the application, and returned again nine days later. At that time the warts on his face had almost entirely disappeared. His condition at this time is shown in Figure 2, taken sixteen days after the first photograph.

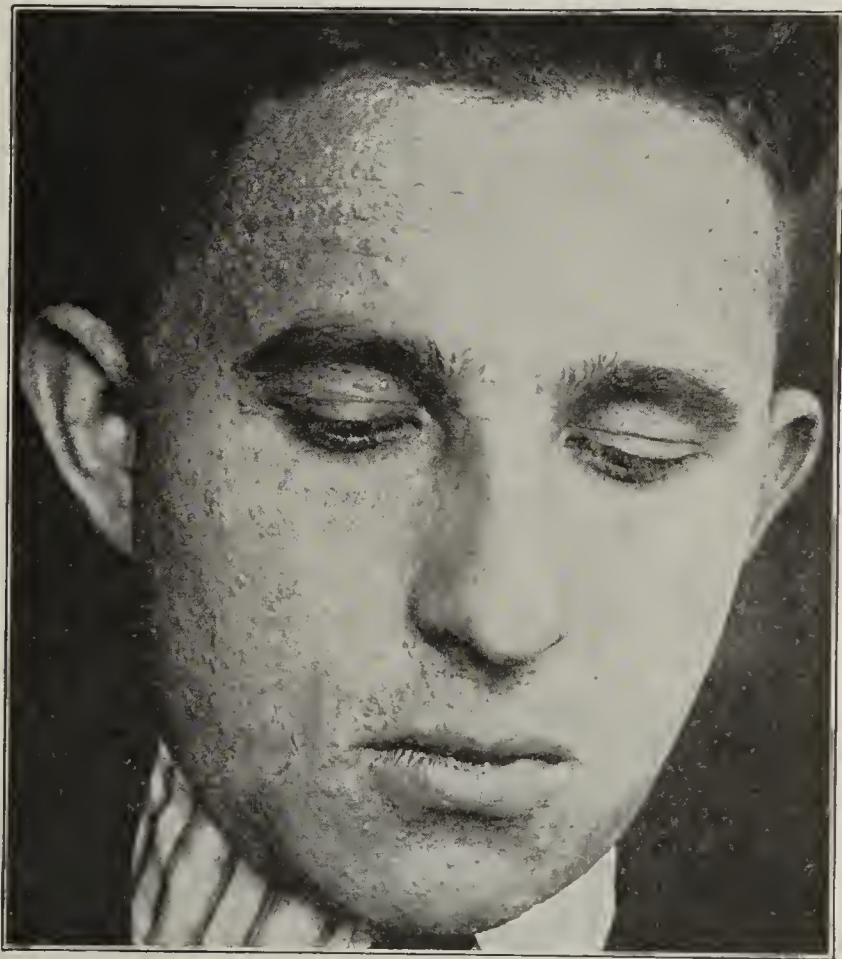


Fig. 1.—Appearance of warts on the day the patient presented himself for treatment.

The warts on the hands, which individually were larger, had not completely vanished, but many of them were gone, and all of them were flattened down and manifestly involuting rapidly.

My attention was first called to the use of Vleminckx's solution in connection with verrucae by the late Dr. James Nevin Hyde. I have used it in a desultory way for many years without being impressed with its value. Lately I have

been using it in stronger solutions and with interestingly good results. I have never seen another case in which removal of the lesions was so surprising as in the one described above, but the solution has served me well in many

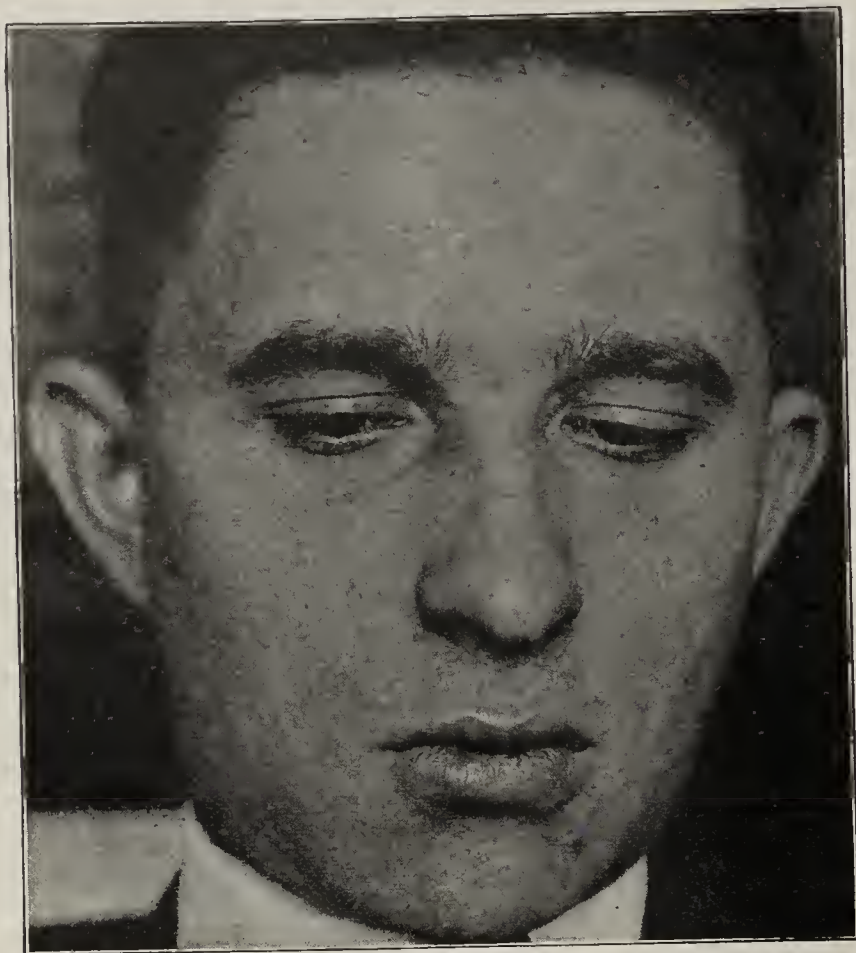


Fig. 2.—Appearance of the patient sixteen days after he first presented himself for treatment.

of these troublesome cases. The method of application that I have found most effective is to put on a small dressing, just a little larger than the wart, wet with full strength Vlemminckx's solution, and held in place by adhesive plaster. This is left on over night, and repeated until irritation is produced; then it is used less frequently until the wart disappears, or until, in case of plantar warts, the desiccated horny mass can be dug out.

7 West Madison Street.

A NEW METHOD FOR PROCURING BLOOD FOR WASSERMANN TESTS *

R. G. OWEN, M.D., AND F. A. MARTIN, M. D., DETROIT

For the past three years we have drawn bloods for Wassermann tests with a special instrument which we have found convenient and economical.

As shown in the accompanying illustration, it is a small metal cap which fits the centrifuge tube into which the blood



Instrument for drawing blood for Wassermann test.

is drawn. The sides of the cap are flexible so that it will fit tubes of varying sizes within a moderate range.

A needle without a hub is sterilized by dry heat in a small test tube with the point of the needle down. When ready for use the needle may be removed without touching the point. It is held by the middle, the wire withdrawn and the butt end of the needle is inserted into a hole in the top

of the cap and tightened with a set screw. The cap is placed on the sterile centrifuge tube, and the instrument is ready for use.

With this instrument, the tube and cap furnish a good handle, and the needle is held rigidly so that it may be guided accurately. The hole in the cap is made large enough to hold any size needle up to and including an 18 gage.

In our work we use thick-walled centrifuge tubes, without a lip, whose outside diameter is approximately 16 mm. The needles used are either 18 or 20 gage. They may be purchased in gross lots for slightly less than five cents each.

After use, the needle is dropped in a strong soap solution from which it may be cleaned with alcohol and ether, resterilized, and used many times.

When the needles and tubes are sterilized in large lots, numerous bloods may be drawn within a very short time and at a slight cost, particularly if the needles are cleaned and used again.

These instruments may be obtained from the Central Scientific Company of Chicago.

33 East High Street.

FORCEPS FOR USE IN PLACENTA PRAEVIA

W. B. HANBIDGE, M.D., OGDENSBURG, N. Y.

The patient on whom these forceps were first used was at term but not in labor. She had a rather profuse hemorrhage while in bed at 3 a. m., Aug. 11, 1919, and was sent to the hospital with a diagnosis of lateral placenta praevia. Examination revealed a very rigid cervix which admitted the index



Forceps for use in placenta praevia.

finger. The placenta was felt to the left about one-half inch from the os. An anesthetic was given and the cervix dilated to the extent of slightly over an inch. There was some hemorrhage during dilation. A pair of forceps had been prepared by cutting off the posterior part of the fenestra of each blade of a pair of obstetric forceps close to the shank, and at the point where the anterior portion curves backward. In using these forceps, the left blade was turned with the concave surface to the pubes. The handle was held well to the right of the operator and the point pushed up within the uterus, the handle at the same time being carried well to the left and back to the perineum. At the same time the assistant pressed on the fundus of the uterus to hasten the discharge of liquor amnii, and to keep the head well down. The right blade was introduced by reversing the movements. The forceps locked easily and gripped the head firmly. Gentle traction was applied, and all oozing of blood ceased. The anesthetic was removed, and gentle traction was kept up by tying a roller bandage tightly around the handles and extending it over a rod, at the foot of the bed, which could be elevated or lowered by being attached to the irrigating stand. A 2½ pound weight was tied to the end of the pendant strip of bandage, which was all the traction that seemed necessary. Occasionally the weight was removed for a short time so that there would not be a continuous pressure of the forceps on the scalp. Pain came on promptly, and at the end of five and a half hours the cervix was about three-fourths dilated. As the presentation was a left occipitoposterior one and the head was not descending, the placenta praevia forceps were removed and obstetric forceps applied. The head was brought down and the occiput rotated to the front.

The infant was normal and uninjured except for a slight cut behind one ear. This may have been done by the obstetric

* From the Detroit Clinical Laboratory.

forceps, but it was probably caused by the placenta praevia forceps on account of no axis traction attachment being used, the blade being too sharp in front and the position being left occipitoposterior.

In this case the placenta praevia forceps were very easily applied, and the pains came on at once and at short intervals. The forceps seemed to act as a gentle dilator of the cervix to stimulate uterine contractions, and a slight amount of traction kept up sufficient pressure of the head on the placenta to prevent hemorrhage.

In modifying a pair of obstetric forceps, it would be preferable to have one with a lock that allows the shanks to come closely together, as it can be applied through a smaller opening than one made with the English lock.

116 Ford Street.

A NEW FRAME FOR TUBERCULOSIS OF THE SPINE

GORDON N. MORRILL, M.D., CLEVELAND

The rather general acceptance of the Whitman-Bradford frame as the best appliance for hyperextension of tuberculous spines leads me to describe a frame which in my experience has proved superior to it in every way for treatment of this disease in children.

The principal reasons for dissatisfaction with the Whitman modification of Bradford's appliance are obvious to those who have had experience with it, namely: (1) the impossi-

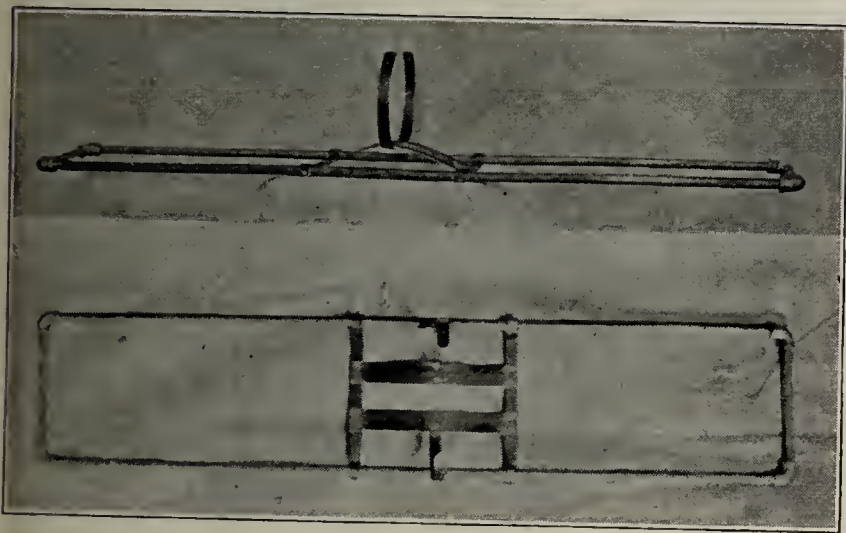


Fig. 1.—Above, Bradford foundation with the new support attached; below, top view of frame.

bility of holding the kyphos up, owing to the inevitable sagging of the canvas; (2) difficulty in ascertaining the position of the kyphos after the child is strapped into place, because of the thick padding underneath; (3) the necessarily tight apron holding the patient in position, with the result that not only is breathing made difficult, but the body is flattened and compressed to such a degree that normal development is impossible; (4) bad ventilation caused by direct bodily contact with the canvas cover and rubber sheeting; (5) the fact that the entire frame must be bent to the corrective angle, and (6) the great danger of genu recurvatum, owing to the rigid fixation of the knees in a hyperextended position.

Each of these defects is completely eliminated in a frame devised by Dr. H. O. Feiss and myself. For eight years I have used it exclusively in all acute cases of dorsal and lumbar tuberculous spines in my work at Lakeside and Rainbow hospitals, with unvarying success and the increasing conviction that it is the most practical device I have yet seen for the purpose.

Because of these excellent results, I feel justified in going considerably into detail in describing the frame and the part it plays in the treatment of Pott's disease in children.

The appliance is constructed on the Bradford frame foundation, which need be made in but two sizes for children under 12. Fastened to the sides of the gas-pipe frame is the support-unit of the device, and this may be moved to

any desired position by adjusting four screws holding the cross bars in place (Fig. 1). The support proper is composed of two curved pieces of steel fastened to the cross bars $1\frac{1}{2}$ or 2 inches apart, leaving sufficient space for the spinous processes. To each side of this support proper is attached one-half the waist band, which serves, not as a means of confining the patient, but of fixation for the perineal and shoulder straps. These are attached as shown in



Fig. 2.—Child in position on the frame, showing the arrangement of accessories.

Figure 2, and buckled firmly in place. The knee strap, it should be noted, is placed well above the patellae, thus eliminating the danger of pressure at a sensitive point. An important item, also, is the pad under the knees (Figs. 2, 4, etc.), to prevent stretching the posterior structures of the knee joints. Strips of felt are used as padding on the spinal support and waist-band; and canvas covers, as well as overslips of finer material, are laced on the ends of the frame. A space is left between the lower of these and the support-unit for the use of the bed-pan, for which the entire frame should be raised on blocks. The child wears shirt and drawers when put on the frame, and the outer garment may be buttoned beneath the support, making it unnecessary that the clothing be so large as to include the entire apparatus.

The many advantages of the frame I have described are easily recognized. Naturally, the convex curve of the two pieces of steel, which may be quickly adjusted for any degree of kyphosis, is the main corrective agent of the device. It tends to restore the normal curve of the spinal column, through exaggerating it to compensate for the deformity. By hyperextension of the spine, and by the rigid convexity of the support, the body weight, pulling in opposite directions, separates the diseased vertebrae—which in itself has a naturally curative effect—and at the same time reduces the kyphos. There is no weight or pressure to flatten the chest or abdomen; therefore, normal development and the body metabolism are not interfered with—facts which are made evident by the increase in weight which has always occurred in these cases.

The raising of the trunk above the frame not only makes good ventilation, but also enables the visiting physician

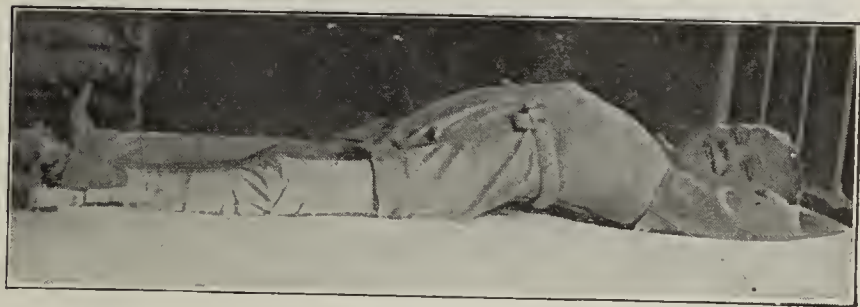


Fig. 3.—Patient having tuberculous spine and hip, with traction on limb.

instantly to ascertain the position of the kyphos in relation to the support.

Moreover, traction may be used without interfering with the patient's position on the frame, as in Figure 3, in which the boy is being treated simultaneously for tuberculosis of the hip and of the spine. In such instances, the frame should be tied at its upper end to the head of the bed, which, together with the perineal straps, makes slipping downward

impossible. In one case, a child having complete pressure paraplegia with paralysis of the bladder and bowels was so treated, with traction on the legs, and in three weeks the paralysis had practically disappeared.

If this frame is to be used on a bed, it is advisable to put a board under each end to prevent the bed's sagging. But it may be laid on a table quite as well (Figs. 2, 4 and 6).

Beyond seeing that the support fits the deformity, there is little to be done for the patient while on the frame, except that he must be rolled off carefully once every day, and his back bathed with alcohol and powdered with zinc oxid. While this is being done, the child should always take a position resting the elbows on the table, the chin in the hands (Fig. 5), thus keeping the spine in hyperextension until the apparatus is again in place. In rolling the patient both off and on the frame, the nurse places her hand on the chest with her arm supporting the abdomen, and turns the frame with the child. To this treatment and proper adjustment of the support is due the fact that there has never been a pressure sore in my experience with the appliance. If the pressure is correctly applied, there will be merely a slightly reddened area on each side of the kyphos. However, it must be clearly understood that this device is never to be used with adult patients, as their skin cannot withstand the pressure of the proportionately greater body weight without resulting abrasions.

With caries of the bodies of the vertebrae it is absolutely essential that the patient be kept on the frame at least six months, as the spasm of the erector spinae seldom ceases under that period. Even if this were not true, a shorter



Fig. 4.—Examples of the two sizes of frame used for children under 12; the pad under the knees is important.



Fig. 5.—Position to be assumed by patient daily while the back is being cared for.

period of recumbency would be unwise, owing to the probability of an exacerbation of the disease. Frequently, as much as a year is required to make certain the best results. Lateral roentgenograms and tracings of the kyphos should be made every two months while the patient is on the frame, increasing the tracings to one a month when the patient has been removed and fitted to a suitable brace. Only in these

ways can reliable data on the progress of the disease be secured.

For treatment of tuberculosis of the upper dorsal spines, I use the same frame with a specially adapted support-unit. It differs from the one described only in the curve of the two steel bars, which in this case are bent into a figure S (Fig. 7). With the high point of the curve under the



Fig. 6.—Patient in Figure 5 in place on the frame.



Fig. 7.—Above, special device for tuberculosis of the upper dorsal region (note arrangement of straps and padding); below, patient in position on frame.

kyphos, the weight of the head acts as traction, and usually secures all the extension needed. This is much better than the commonly used plaster bed, owing to the complete ventilation secured, and the ease with which its curve may be adjusted.

In spinal, as in all forms of tuberculous disease, the open air treatment is of vital importance. Therefore, one of the extremely practical features of the device is the ease with which it may be carried about by the nurse in the hospital or the parent at home. The child may even be brought to the physician's office without removal or danger of displacement.

The accompanying photographs cannot fail to make more evident the points I have endeavored to emphasize, particularly the patients' invariable well-being and their normal bodily development while recumbent.

It is with the hope that this appliance may prove of value to others who are interested in the treatment of tuberculous spines that I present it for consideration.

429 Osborn Building.

Treatment of Mental Disorders.—In every large center of population a department for nervous and mental cases should be provided in connection with the best general hospital. This department should be so organized and equipped that the patients would be treated by the most approved method at the hands of specially trained and experienced nurses and physicians. In no class of case is the necessity for specialist more pressing. In fact special knowledge and skill are the only sure safeguard against gross neglect and mismanagement in the treatment of mental cases.—W. L. Russel *Canadian J. Mental Hygiene* 1:161 (July) 1919.

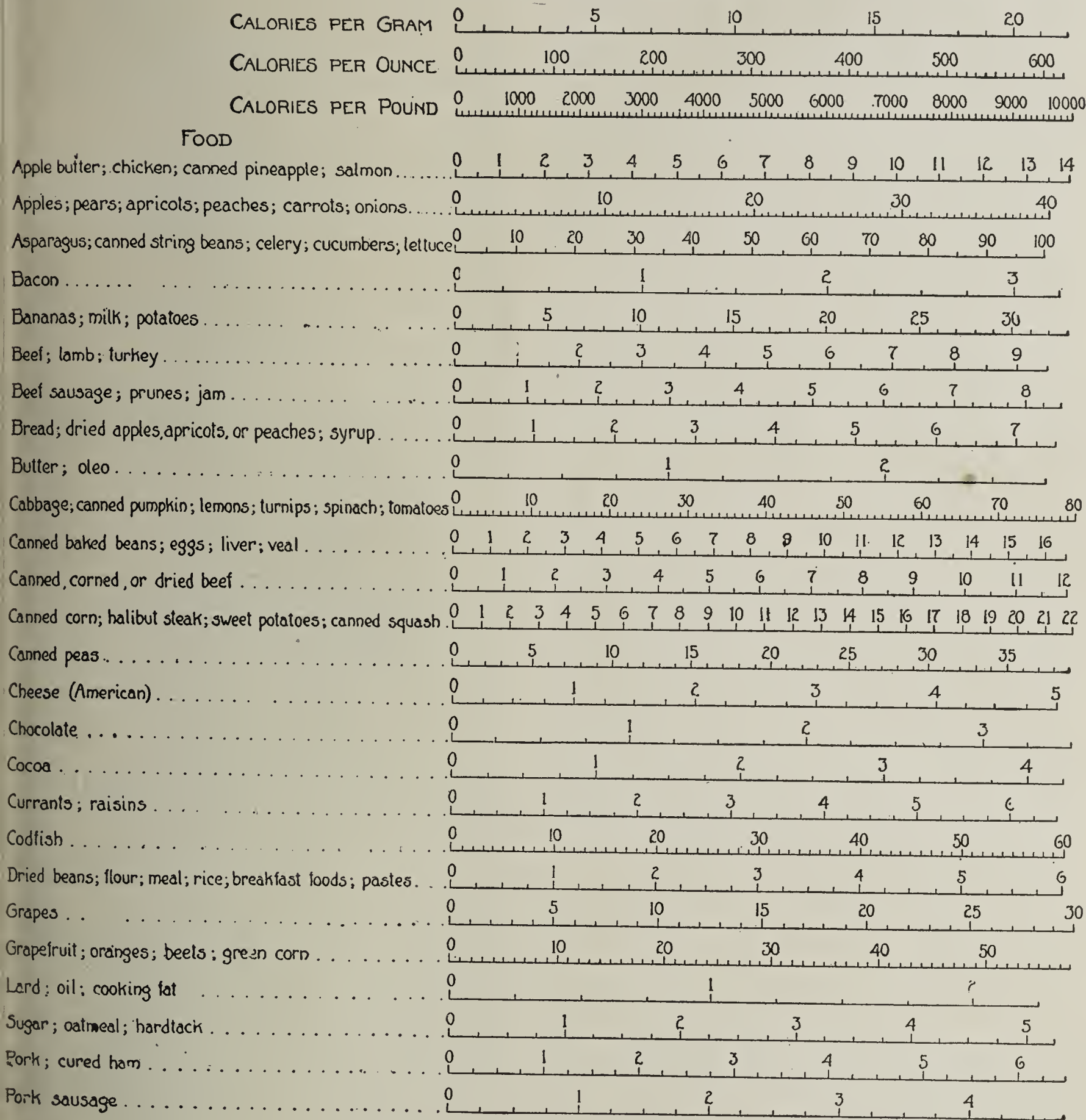
A CHART FOR RAPID CALCULATION OF CALORIFIC
VALUES OF DIET

J. F. McCLENDON, PH.D., MINNEAPOLIS

Associate Professor of Physiology, University of Minnesota
Medical School

The accompanying chart furnishes the calorific value per unit weight and performs simultaneously the process of multiplication and division, thus giving an immediate answer

calculation often exceeds the savings that may arise therefrom. The object of the chart is to reduce the labor of calculation to a vanishing quantity. The time required to use the chart decreases with practice, but is so small as to be negligible even the first time the chart is used. The first time I used the chart, five minutes were required to calculate the calorific value of a diet containing seventeen articles of food, and the error was only 5 per cent. The error due to variation of the foodstuff may be 5 per cent. or



Scale for rapid determination of calories.

to the question of the calorific value of any diet, bill of fare or store of food. It is one thing for the physician to recommend a more adequate diet for a patient suffering from pellagra, tuberculosis or other disease, but quite another thing for the patient to procure such a diet. With the increase in cost of food, economic rationing becomes more and more desirable. The calculation of the calorific value of food is seldom done as an economic measure, since the cost of such

more, and hence the use of the chart in calculation is open to no more criticism than the use of Atwater and Bryant's data for the composition of food.

Since food is usually purchased by the pound or in containers whose capacity in pounds is known, the use of the pound as the unit of weight is most convenient. Besides the chart, a measuring tape is necessary. A millimeter tape is most convenient if it is remembered that each millimeter

represents 100 calories, or each centimeter, 1,000 calories. The "calories per pound" scale at the top of the chart represents a millimeter tape with the calory units marked on it, and it may be cut out or copied for use, but it is not long enough and should be extended. A fine thread may be used in conjunction with the "calories per pound" scale, as in the ordinary practice of measuring with a string and transferring to a rule.

A list of the foods and their weights in pounds is prepared. Beginning with the first food on the list, the scale opposite its name on the chart is found and the number corresponding to its weight is noted on the scale and the distance from this number to the left hand end of the scale is measured with the tape. The part of the tape used in this measurement is marked off by covering it with the left thumb, the next succeeding portion of the tape is used to measure the second article of food, and at the end of the process, the calorific value of the whole list of foods is read off directly from the tape. For instance, let us suppose that we wish to calculate the total calorific value of 1 pound of bread and 10 pounds of apple butter. Using the millimeter tape measure (which is identical with the "calories per pound" scale at the top of the chart) we measure off one unit of the bread scale and find it to be 13 mm. Then, taking the same measure and commencing at the 13 mm. point we measure 10 units on the apple butter scale. We shall find that this will take us up to about 84 mm. Therefore, the total calorific value of the 1 pound of bread and 10 pounds of apple butter are 8,400 calories. There may be an error in calculation of 20 calories, which is only 0.5 per cent. Of course, in rapid work, ten times as great an error may occur.

Some further examples are as follows: Suppose a meal is made of 1 pound of beef and 1 pound of potatoes. We measure the beef as about 10 mm. and the potatoes as about 3 mm., or a total of 13 mm. or 1,300 calories (whereas the correct calculation is 1,307 calories by multiplication and addition). Besides this slight error in calculation there is a much greater error in using an average figure for beef. If we were calculating the beef used in an army mess, the data would be nearly correct; but when the beef is cut up there is considerable variation in the different cuts, as illustrated by the fact that Atwater and Bryant devote ten pages of tables to data on fresh beef. Since the different cuts vary from 125 calories per pound for very lean neck to 2,440 calories per pound for very fat flank, it might seem useless to use the chart for beef at all. In case of the higher calorific values, most of the calories are due to large masses of fat that would not be eaten as such, and the lower calorific values are due to the presence of much bone that makes the cuts fit only for soup. In the ordinary practice of eating steaks and chops, the average figure for beef would not be very far wrong. If we have a different scale for every cut of beef, the chart would be too large for ordinary use.

As another example, suppose we make a pudding of a dozen eggs, 5 pints of milk and half a pound of sugar. A dozen eggs weight approximately $1\frac{1}{2}$ pounds, and 5 pints of milk 5 pounds. We find that eggs have the same calorific value as canned baked beans, and milk the same as bananas, to remember which will aid in finding the scale. We measure off 1.5 units on the egg scale and find it to be 9 mm., and 5 units on the milk scale and find it to be 15 mm., or a total of 24 mm., and half a unit on the sugar scale and find it to be 9 mm., making a grand total of 33 mm., or 3,300 calories. The correct calculation gives 3,317 calories; hence our error is about 0.5 per cent.

If the food has been weighed in ounces, the same chart is used, but a new measuring tape must be prepared by cutting out or copying the "calories per ounce" scale at the top of the chart. For instance, to find the calorific value of 1 ounce of butter we measure one unit on the butter scale with our new tape and find it to be 217 calories, whereas the correct calculation gives us 217.38 calories.

If the weight of the food is recorded in grams, the same chart is used, but a third form of measuring tape is prepared by cutting out or copying the "calories per gram" scale at the top of the chart. For example, to find the calorific value

of 1 gm. of butter, we measure one unit on the butter scale with this third form of tape, and we find it to be 7.7 calories, whereas the correct calculation would give us 7.668 calories.

In case the food is not sold by weight, the capacity of containers may be estimated. The volumetric capacity of containers may vary if not fixed by law, and the gravimetric capacity may vary with variation in the character of its contents. The tabulated data, obtained in San Francisco, may be of some use. The weights are net.

ESTIMATED CAPACITY OF CONTAINERS

Apples	40 lbs. per box (135 apples in a 4-tier box).
Bananas	70 lbs. per bunch.
Beets	10 lbs. per dozen.
Cantaloupe	65 lbs. per crate.
Cassaba melon	40 lbs. per crate.
Carrots	80 lbs. per sack.
Cauliflower	40 lbs. per dozen.
Celery	3 lbs. per bunch
Cucumbers	40 lbs. per lug-box.
Corn (green)	70 lbs. per sack.
Eggs	54 lbs. per case, $1\frac{1}{2}$ lbs. per dozen.
Grapes	45 lbs. per lug-box, 40 lbs. per crate.
Grapefruit	65 lbs. per crate (64 grapefruits).
Lemons	70 lbs. per crate (350 lemons).
Lettuce	40 lbs. per crate, 13 lbs. per dozen.
Milk	2 lbs. per quart.
Oranges	70 lbs. per crate.
Peaches	55 lbs. per lug-box, 40 lbs. per pony-crate.
Potatoes (sweet)	118 lbs. per box.
Radishes	7 lbs. per dozen bunches.
Spinach	10 lbs. per dozen bunches.
Tomatoes	55 lbs. per lug-box.
Turnips	80 lbs. per sack.

The weight of contents of canned and dry package goods is marked on the container. The foods sold by volume and not weight are usually of low calorific value, and hence the absolute error in estimating the weight is very small.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(Continued from page 30)

THE CATHARTIC SALTS

"Taking a dose of salts" is generally considered an easy and simple way of producing an evacuation of the bowel. Consequently few medicaments are more generally used—and abused—by both physicians and laymen than are the saline cathartics. These salts, in fact, belong among the habit-producing drugs, and are responsible for a large proportion of cases of cathartic habit. That they are occasional accessory causes of death from ileus and appendical and other forms of peritonitis is only too well known to the surgeon.

The chief effect of the salines is to interfere with the absorption of some of the ingested water, so that it is eliminated into the stool instead of passing through the system. They do this, presumably, because they are practically nonabsorbable in the alimentary tract and therefore retain enough water in the colonic content to render them isotonic with the blood.¹

As an isotonic solution of sodium sulphate is 2 per cent. of the dried (4 per cent. of the crystalline) salt

* This is the thirteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. Other theories have been advanced to explain the action of these agents. Space for the discussion of these is not taken here, they do not influence their use.

It would take 500 c.c. (1 pint) of fluid to carry out of the system a dose of 10 gm. (2½ drams) of this salt. In case of magnesium sulphate, 7.5 per cent. of which is isotonic, the proportion of water abstracted is somewhat greater, because this substance is converted in the intestine into magnesium bicarbonate and sodium sulphate, both of which are soluble and practically nonabsorbable. Evidently this is why magnesium sulphate is a more efficient purgative than sodium sulphate. Magnesium citrate, on the other hand, yielding sodium citrate and magnesium bicarbonate, is proportionately less powerful than magnesium sulphate, to the extent that sodium citrate is a feeble cathartic than sodium sulphate.

ILL EFFECT ON THE STOMACH

When the salts are ingested in any other than isotonic strength, they are rendered isotonic in the stomach. In case of strong salt solutions, this is accomplished at the expense of delayed evacuation of the stomach and irritation of the gastric mucosa. We may, therefore, formulate the rule that *salines should be given in dilute solution—generally, a teaspoonful to a tumblerful of water—unless abstraction of fluid from the system is aimed at.* The gastric distention produced is by no means advantageous to the functions of the stomach. This is so well known that purgative salts are preferably taken on an empty stomach; their ingestion is so timed, that they have largely left the stomach before food enters it, which is ordinarily accomplished by giving them at least half an hour before meals. This presupposes, however, a normal emptying time of the stomach. When there is gastric motor insufficiency—a condition in which fluid is evacuated with difficulty and therefore interferes with digestion—these agents are, as a rule, not well tolerated. The condition of sufferers from gastritis is likewise aggravated by any but most moderate doses of isotonic alkalized solution. When there is nausea or vomiting, these agents, with the exception of magnesia, cannot be administered, or they have a tendency to provoke nausea and vomiting in sensitive persons. These are the reasons that most of the cathartics of this class are practically taboo with the gastro-enterologist, who deals with so many of these patients. Even their transduodenal administration by means of Jutte's tube has recently been advocated, to spare the stomach the action of these chemicals.

EFFECTS IN INTESTINE

While these bodies delay the evacuation of the stomach when they are given in concentrated solution or when they produce diarrhea, the moment they enter the intestine they hasten the onward progress of its contents, producing a liquid evacuation within from one to four hours of their ingestion. Such prompt effect is dependent, however, on good peristaltic activity. When this is deficient, as is likely to occur in those confined to bed, instead of one prompt and comfortable bowel movement in one, two or four hours, several small bowel evacuations may ensue with considerable griping in the course of twenty-four hours. For this reason the salines may be advantageously combined with peristaltic stimulants, as salts and senna, sulphur and cream of tartar. From what has been said it is evident that the best time for giving these salines is in the morning before breakfast; while administering them last thing at night is least likely to produce desirable results.

The rush of fluid through the intestine, induced by saline cathartics, results in a veritable washing out of the bowel, which cannot, however, be complete. Liquid and solid materials are passed along the intestine by different processes. While the rhythmic segmentation movements of the intestine may cause a rapid passage of fluid, solid contents, which depend for their propulsion on peristalsis, may be left behind. While the artificial diarrhea produced may carry away poisons, it also causes the loss of a certain amount of nutriment. On the latter action is based their use in the treatment of obesity, which, however, is not nearly as rational as diminution in the intake of nutriment. Not much can be said in favor of their action in so-called intestinal autointoxication: for, while they may remove some of the bacteria and the poisons produced by them, the fluidity of the bowel contents and the greater amount of organic matter contained in them may favor the more rapid growth and development of those organisms left behind.

The evacuant action of the salines is chiefly useful when a single flushing out of the bowel is desired to remove, as thoroughly as possible, irritant or otherwise offensive material. As they produce but little irritation in the intestine, they may be used even in the presence of enteritis and in dysentery. Salines are the classical evacuants to be used in connection with mercurials and anthelmintics, and in case of poisoning.

One of the chief faults of the cathartic salines is their deficiency in stimulating peristalsis: indeed, intravenous or intramuscular injection has been shown to inhibit bowel movement. The rapid evacuation produced is due to distention of the intestine with fluid; and this is so marked that salines are particularly obnoxious for preoperative purgation or for evacuation of the bowel prior to a roentgenologic examination of the abdomen. They are contraindicated in chronic atonic constipation, as they not only do not antagonize the underlying pathologic condition, but actually aggravate it by lessening the need for peristaltic activity, as liquid contents are more easily propelled than solid material. Their use in dyschezia (torpor recti) is irrational, as in these cases they act no better than an equivalent amount of water injected by rectum; and it surely is not good sense to upset water absorptive and other physiologic processes all the way down the alimentary canal in order to distend its lowest segment with fluid that might so much more readily and efficiently be introduced from below.

The chronic use of salines is justified only in those cases of constipation due to minor colonic stenosis, even cancerous, and to partial anatomic obstacles (adhesions, etc.) in patients for whom surgical relief is not desirable.

• SYSTEMIC EFFECTS

The source of the fluid eliminated in the stools in the course of saline catharsis is chiefly ingested water. Even if the saline is not taken in isotonic solution, enough water is ordinarily consumed in our diet to produce isotonicity without abstraction of fluid from the blood. It is only when dry diet and concentrated salt solution are used simultaneously that abstraction of fluid from the system occurs. As a result of such concentration, the red blood count may rise to 7,000,000 per cubic millimeter, to return to normal within the next few hours even if no fluid has been taken. A second less marked rise in the concentration of the blood may be observed during the stage of diuresis.

Alongside of this temporary diminution in the volume of circulating fluid there is a tendency to depression of the circulation. This accounts for the feeling of faintness experienced by feeble individuals at the height of action of these agents, as well as for the relief of headaches due to cerebral hyperemia or high blood pressure testified to by others.

In treatment of dropsy, the cathartic salines are perhaps the least harmful among the hydragogues, owing to absence of intestinal irritation. However, their unfavorable action on the stomach may render jalap or elaterin preferable in certain cases. When given for this purpose, from 15 to 30 gm. ($\frac{1}{2}$ to 1 ounce) of sodium sulphate (preferable to magnesium sulphate for reasons to be given below), dissolved in from 30 to 60 c.c. (1 to 2 ounces) of water, are taken on an empty stomach, best in divided doses every fifteen minutes until all has been taken. It would be poor therapy, however, to force a patient to take this disagreeable potion, obnoxious not only to the palate but also to the stomach, unless moderate drink restriction is practiced at the same time. The policy of this therapy may be questioned when we realize that mere drink restriction could produce the same result, as far as dehydration of the system is concerned, in a more gradual and less disturbing manner. There are a number of other weighty objections to it. Thus, the salines fail to produce their purgative effect as soon as a certain degree of systemic dehydration has occurred. Under such circumstances they are absorbed; and, if they cannot be promptly thrown out by the kidney, must be retained with an adequate amount of water to maintain isotonicity, thus still further adding to the waterlogged condition of the patient. Furthermore, in the dropsy of myocardial insufficiency, the weakening of the patient by the routine administration of heroic doses of salines more than offsets the benefit to be derived from the abstraction of the small amount of fluid lost in this way. In patients with enfeeblement of the circulation, the drastic use of salines, so commonly practiced, cannot be too strongly deprecated. All this accounts for the observation made, at times, that a patient who at first seemed to improve on this treatment becomes more dropsical again on its continuance. All that can be said in favor of it is that a dropsical patient should not be permitted to become constipated; and that the gentle use of salines, enough to produce one or at most two liquid stools a day, might be recommended, alongside of moderate drink restriction. When watery bowel movements do not result, the administration of the saline should be stopped.

A note of warning should furthermore be sounded against the use of magnesium salts when there is a suspicion that they might be absorbed instead of being thrown out with the stools, as might occur not only under conditions just described, but also in case of ileus. If the patient cannot get rid of the dose in the usual way, it may, by its absorption, aggravate the existing intoxication and even contribute to a fatal result by the depression of the respiratory center and the curare-like action on muscles inherent in the magnesium ion. An extraordinarily high specific gravity of the urine (even 1.070 or 1.080) is suggestive of magnesium sulphate poisoning. In such a case, the antagonism between calcium and magnesium, demonstrated by Meltzer, might be of practical importance, as well as the hypodermic use of 0.6 instead of 0.9 per

cent. salt solution to lessen the prevailing excess in osmotic tension. Sodium sulphate is much safer under these circumstances, as it would be less poisonous if absorbed.

One may well be skeptical that anything can be accomplished by saline catharsis in the way of diminishing the bulk of exudates, such as those of pleurisy with effusion. The most that can be said for the practice is that salines, in moderate doses and given in fairly concentrated solution, may be preferred to other cathartics to antagonize constipation. Exhausting purging is a display of poor judgment in these cases, as it can only do harm.

To reduce milk secretion in weaning or to lessen engorgement of the breasts in an otherwise healthy woman, drink restriction may be accompanied by use of saline cathartics for a day or two.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CHINOSOL.—Oxyquinolin Sulphate.— $(C_8H_7ON)_2H_2SO_4$.—A normal oxyquinolin sulphate.

Actions and Uses.—So far as experimental evidence and experience go, chinisol is non-toxic. It is a powerful antiseptic, somewhat stronger in this respect than mercuric chloride and considerably stronger than phenol. It has been found to exert an antiseptic action in solutions containing part to 10,000. It is a feeble germicide, being weaker than phenol and much weaker than mercuric chloride. It is incompatible with alkaline substances (soap) and with salts of mercury and iron. Chinisol does not coagulate albumin or injure the mucous membranes or tissues. The sensitiveness of patients to its solution varies considerably. In some it produces a pronounced stinging when applied to mucous membranes even in dilute solutions (1 to 2,000), but it is claimed not to cause harmful irritation in any strength. It is claimed to possess marked analgesic power and to be an efficient deodorant.

Dosage.—For internal use 0.3 Gm. (5 grains) three times daily. As an antiseptic the average strength of solution used is 1:1,000; as a nasal spray or douche 1:3,000; as gargle 1:2,000, and as an eye-wash 1:4,000, gradually increased in each case according to the tolerance of the patient up to 1:500. In gargles the strength may be increased to 1:250. As a vaginal douche the initial strength used 1:1,000, increased to 1:100 if necessary.

Manufactured by Chinisol Co., Parmele Pharmacal Co., New York. U. S. patent No. 906,918 (Dec. 15, 1908; expires 1925). U. S. trademark No. 28,750.

Chinisol Tablets.—Each tablet contains chinisol $\frac{1}{4}$ Gm.

Chinisol is a yellow crystalline powder of saffron-like odor and burning taste. It melts at from 175 to 177.5 C. It dissolves readily in water, but with difficulty in alcohol and it is insoluble in ether. The aqueous solution has an acid reaction.

A drop of solution of ferric chloride produces in a solution of chinisol a marked green coloration. Barium chloride produces a white precipitate. Solutions of alkaline hydroxides precipitate from an aqueous solution of chinisol a white precipitate, consisting of interlaced crystalline needles, which, after filtration, washing with water, and drying in a desiccator, should melt at from 73 to 75 C. Incineration chinisol should not leave a weighable residue.

DUBOIS' IODOLEINE.—Iodized Poppyseed Oil.—An iodine addition product of poppyseed oil.

Actions and Uses.—Dubois' Iodoleine may be used whenever iodides are indicated, its effect being more gradually exerted. See general article, Iodine Compounds for Internal Use, N. N. R., 1919, p. 143.

Dosage.—From 0.25 to 2 Cc. (0.3 Gm. to 2.5 Gm.) per day in capsules taken at meals of Dubois' Iodoleine containing

per cent. of combined iodine by weight. From 1 to 10 Cc. (1.14 Gm. to 11.4 Gm. of Dubois' Iodoleine containing 26 per cent. of combined iodine by weight injected intramuscularly when intensive action is desired. Warm to body temperature before injection. For oral administration Dubois' iodoleine is supplied in the form of capsules. For intramuscular administration it is also supplied in ampules.

Manufactured by Laboratoires Dubois, Paris, France (David B. Levy, New York, distributor). No U. S. patent or trademark.

Dubois' Iodoleine Capsules, 0.25 Cc.—Each capsule contains 0.3 Gm. Dubois' iodoleine equivalent to 0.10 Gm. iodine.

Dubois' Iodoleine, Injectable.—100 Cc. contain 30 Gm. iodine.

Dubois' Iodoleine, Injectable, Ampules, 1 Cc.—Each ampule contains 1 Cc. of sterile Dubois' iodoleine equivalent to 0.3 Gm. of iodine.

Dubois' iodoleine is an oil-like liquid, lightly brownish, with an odor of poppyseed oil. It is insoluble in water or alcohol, soluble in chloroform and in ether.

Specific gravity of Dubois' iodoleine 30 Gm. per 100 Cc. at 15 C. is 1.14. Specific gravity of Dubois' iodoleine 40 Gm. per 100 Cc. at 15 C. is 1.22.

When heated it chars and gives off purple vapors of iodine.

When heated with alcoholic potassium hydroxide, Dubois' iodoleine is saponified and the iodine changed to potassium iodide.

About 1.5 Gm., accurately weighed, is saponified by boiling with 100 Cc. half-normal alcoholic potassium hydroxide for three hours under a reflux condenser. The condenser is then removed and the alcohol evaporated. The residue is then acidulated with diluted nitric acid, a small amount of sodium sulphite is added to prevent oxidation of iodine. The fatty acids are then removed by filtration or extraction with chloroform and the iodide determined by titration with potassium sulphocyanate, using ferric ammonium sulphate as indicator.

By this method the iodine in Dubois' iodoleine capsules is not less than 40 Gm. in 100 Cc., and in Dubois' iodoleine injectable not less than 30 Gm. in 100 Cc.

THYROXIN.—4,5,6-trihydro-4,5,6-triiodo- α -oxy- β -indole proprionic acid ($C_8H_5ON_3I_3$). C_2H_4 .COOH; an active principle obtained from the thyroid gland. It contains 65.1 per cent. iodine.

Actions and Uses.—Thyroxin is used essentially for the same purposes as Dried Thyroids, U. S. P. It is indicated in cases of diminishing or absent thyroid functioning such as simple goitre, cretinism and myxedema. The reports of Kendall show that thyroxin affects the pulse rate, blood pressure, nitrogen metabolism, relieves symptoms of myxedema and will produce hyperthyroidism. According to Kendall's view the emphasis for the activity of the thyroxin molecule should be placed on the oxy-indol nucleus rather than on the presence of iodine. The most important quantitative measure is the determination of the basal metabolic rate. One milligram (0.04 Gm.) of thyroxin increases the basal metabolic rate in adults approximately 2 per cent. The relation holds for larger amounts, that is, 10 milligrams increases the metabolic rate 20 per cent. It is through the basal metabolic rate that the pharmacological action of thyroxin can be followed best. When given by mouth or intravenously, there is no immediate effect except occasionally when an increase in pulse rate and respiration occurs, which, however, will soon disappear. After twenty-four to thirty-six hours there is a noticeable increase in pulse rate. There may be loss of weight and beginning of nervous manifestations. If the dosage is continued for five or six days, the typical so-called hyperthyroid symptoms will be produced: loss of weight, increased pulse rate with tachycardia, nervous manifestations and a sense of fatigue. With small doses no harmful effects are not produced and a stimulating effect is manifest in cases of myxedema. With large doses, the above symptoms are aggravated: the amount of thyroxin required to produce toxic effects is exceedingly small. It has been reported that the maximum effect from a single injection is not reached until the tenth day, the duration of the effects of a single administration of thyroxin being about three weeks.

In some forms of goiter (such as simple adolescent colloid goiter) the function of the thyroid is defective and the administration of thyroxin is indicated; but in most cases of goiter (especially exophthalmic) thyroxin should never be administered.

Dosage.—0.2 mg. to 2 mg. Thyroxin should always be given in minimum doses and in each case the optimum amount should be determined by trial. In general a normal adult will show evidences of hyperthyroidism if given as much as 2 mg. per day. A person afflicted with cretinism requires generally 0.4 to 0.8 mg. per day; a very small cretin requires 2 to 1.0 mg. every day or every other day.

In many cases after symptoms of hypothyroidism have disappeared, remarkably small doses suffice to keep the patient in an almost normal state.

The patient should be careful of exertion and should take sufficient protein in the diet to compensate for increased

loss of nitrogen from the action of the drug. Thyroxin is offered in the form of tablets which should be used *only* for oral administration.

Manufactured by E. R. Squibb and Sons, New York, by license of the University of Minnesota. Patents applied for.

Thyroxin Tablets 0.2 mg.—Each tablet contains thyroxin 0.2 mg. (1/324 grain).

Thyroxin Tablets 0.4 mg.—Each tablet contains thyroxin 0.4 mg. (1/162 grain).

Thyroxin Tablets 0.8 mg.—Each tablet contains thyroxin 0.8 mg. (1/81 grain).

Thyroxin Tablets 2 mg. (0.002 Gm.).—Each tablet contains thyroxin 2 mg. (1/33 grain).

Thyroxin was introduced into medicine by Kendall (Kendall, E. C., J. A. M. A., Sept. 14, 1918, p. 872; J. Biol. Chem., December, 1919, p. 265). It is prepared from the thyroid glands of animals by severe alkaline hydrolysis and by precipitation from this alkaline solution of the acid insoluble constituents. Thyroxin is separated from this fraction by treatment with barium hydroxide and subsequent crystallization of the sodium salt from an alkaline solution; it is then further purified by treatment with alcohol containing a weak organic acid. It is presumed to exist in three tautomeric forms.

Thyroxin occurs as white crystalline needles in the pure form. It is insoluble in water and the usual organic solvents. It melts at 250 C. It is very susceptible to reduction being easily decomposed by zinc in alkaline solution. It is decomposed by prolonged cooling in water.

Thyroxin forms salts with solutions of sodium and potassium hydroxides. It also forms insoluble salts of barium and silver.

When thyroxin is treated with alcohol in the presence of mineral acid, it dissolves; this does not occur in the presence of weak organic acids.

Dissolve thyroxin in sodium hydroxide solution; on addition of sodium chloride a disodium salt is precipitated. Add the disodium salt thus obtained to alcohol containing ammonium chloride; on boiling, thyroxin separates in long needles.

On analysis it should yield 65 per cent. iodine.

BARBITAL SODIUM (See N. N. R., 1919, p. 83).

Veronal Sodium-Winthrop.—A brand of barbitol sodium complying with the N. N. R. standards.

Manufactured by the Winthrop Chemical Company, Inc., New York. U. S. patent No. 782,739 (Feb. 14, 1905; expires 1922). U. S. trademark.

Thromboplastin Hypodermic-Squibb.—A sterilized extract of cattle brain in physiological solution of sodium chloride. It complies with the description of thromboplastin-Squibb, but a longer time is required for the clotting of blood plasma.

Actions and Uses.—See general article Fibrin Ferment and Thromboplastic Substances (New and Nonofficial Remedies, 1919, p. 117). Thromboplastin hypodermic-Squibb is intended for hypodermic and intramuscular injection to increase the coagulability of the blood.

Dosage.—From 10 Cc. to 20 Cc. every 24 to 72 hours. Thromboplastin hypodermic-Squibb is marketed in 20 Cc. vials which bear an expiration date after which time, the contents should not be used. (The manufacturer reports that no loss of potency could be detected in specimens which had been kept unopened for two years.)

Manufactured by E. R. Squibb and Sons, New York. No U. S. patent or trademark.

Brains from cattle freshly killed are removed under aseptic conditions, using sterile gloves and sterile instruments, and are transferred immediately to sterile containers. They are then taken into a sterile room, connective tissue, blood vessels, etc., removed, and the brain substance is thoroughly ground either in a ball mill or sterile meat grinder. The brain substance is then diluted by the addition of physiological solution of sodium chloride containing 0.4 per cent. trikresol in the proportion of eight parts saline solution to one part of brain substance by weight. The reaction of the mixture is then taken, and sufficient sodium hydroxide solution is added to make it neutral to phenolphthalein. It is then filled under precautions insuring sterility into sterile bottles which are stoppered with cotton plugs. The resultant mixture is sterilized by streaming steam for 40 minutes after a preliminary warming. The result is a slightly opalescent, supernatant fluid overlying the coagulated brain substance. It is then tested for sterility, and when required filled into 20 Cc. containers.

Meningitic Form of Acute Poliomyelitis.—When the cervical region of the cord is attacked, one must be on the watch for paralysis of the diaphragm because the virus will not need to spread far to implicate this region. Complete paralysis is easily recognized by the indrawing of the epigastrium with inspiration. When the intercostal muscles are also paralyzed, the condition is pitiable. The child lies cyanosed, with widely dilated nostrils, raising the chest by the accessory muscles. Oxygen gives some little relief, and it is remarkable how long life is prolonged. It is when the paralysis is partial that it may be overlooked, but ineffective cough may rouse suspicion, for in order to cough effectually the diaphragm must be steady.—*Clinical Journal*, December, 1919.

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SATURDAY, JANUARY 10, 1920

IMPROVED METHODS OF TREATMENT OF SHOCK

Whatever may be the cause or causes of surgical shock—which it would be too venturesome to debate at this juncture—considerable evidence is now available pointing to a loss of circulating fluid.¹ In the early studies of shock, when fall of blood pressure appeared to be the most conspicuous symptom, remedial measures were directed toward inducing the blood vessels to acquire a better tonus in order to restore the efficiency of the circulation. It must be admitted frankly that most of these have failed in general to accomplish anything more than very transitory advantage. Stimulants and vasoconstrictor drugs were naturally first to be tested, and, like related methods of physical therapy, they proved to be of little importance. Subsequently, attention was turned more directly to the impaired volume of the blood in shock, even though no external hemorrhage had occurred. Gasser, Erlanger and Meek² point out, in one of the most recent discussions of this subject, that the blood volume has been found to be decreased in all forms of experimental shock studied and after all grades of damage. They have shown, in common with other investigators, that the effective volume of the blood may be reduced by transudation of plasma, by absolute stasis in some part of the vascular system, by hemorrhage into tissue, especially into the lumen of the intestine, as well as by dilatation of the capillaries and small veins with greatly increased slowing of the circulation.

Consequently, it has seemed logical of late to treat the condition by an attempt to restore the lost fluid to the circulation. The use of isotonic saline solutions for this purpose has proved to be elusive, as the fluid passes out of the vascular system so rapidly that scarcely any gain can be registered. This fact, long known, has led investigators to seek an artificial fluid

that will be more effective in restoring blood volume and maintaining a more normal pressure. The outcome has been the suggestion of various alkaline solutions, and more recently solutions of gelatin³ or glucose.⁴ Mann⁵ of the Mayo Clinic, to whom we owe numerous valuable contributions to the subject of shock, has lately come to the conclusion that the best results in the treatment of experimental shock are obtained by the injection of fluid mediums. The data of the experiments justify the conclusion that none of the artificial solutions give such good results as the use of blood. Mann believes that the so-called colloidal solutions and their various modifications give better results than physiologic sodium chlorid solution, but their potency is certainly not equal to blood or blood serum, and occasionally they might be harmful.

During the war, when the subject of shock came into greater prominence than ever before, many surgeons followed the suggestion of Bayliss⁶ of London and his followers who have used solutions containing acacia for transfusion. This colloid is not readily diffusible, and it is assumed to increase the osmotic pressure of the blood into which it is introduced. Accordingly, the concentration of the blood by transfer of water from it tends to be prevented. For example, whereas after injection of a crystalloid like salt or sugar into the circulation the diluted blood returns to normal volume within a few minutes, this is not the case when concentrated solutions of gum acacia are employed.⁷ When both colloid and crystalloid are introduced in hypertonic solution, it appears that the colloid will hold in the circulation not only the water that it itself slowly attracts, but also the water brought to it rapidly by a hypertonic crystalloid, so that the combined injection of the two results in a rapid and well-sustained expansion of the blood volume. In other words, to quote Erlanger and Gasser, hypertonic gum solutions attract tissue fluids into the circulation very slowly. Hypertonic crystalloids injected intravenously, as is well known, attract water quickly. When the two, the hypertonic gum and the hypertonic crystalloid, are injected to all intents and purposes simultaneously the gum holds the water that the crystalloid quickly brings into the circulation. Presumably, the blood volume is thus increased by a process that resembles the one which the organism itself employs in combating a reduction in blood volume.

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1. Cannon, W. B.: Shock and Its Control, *Am. J. Physiol.* **45**: 544, 1918. Dale, H. H., and Laidlaw, P. P.: Surgical Shock and Some Allied Conditions, *Brit. M. J.* **1**: 381, 1917.

2. Gasser, H. S.; Erlanger, J., and Meek, W. J.: Studies in Secondary Traumatic Shock, IV, The Blood Volume Changes and the Effect of Gum Acacia on Their Development, *Am. J. Physiol.* **50**: 31 (Oct.) 1919.

Since the functional collapse of the vasomotor center or of the heart is now regarded as a relatively late consequence of low arterial pressure rather than its cause, it seems well worth while to pursue further the efforts to restore blood volume and thereby maintain adequate return of blood to the heart and a safe arterial pressure in shock. This immediately helpful feature may be undertaken quite apart from the means to combat the ultimate etiologic factors, such as are represented by the postulated and much discussed tissue poisons, acidosis, etc., which are supposed to deteriorate the normal exchange of fluid through the vessels, or occasion stagnation of blood in certain areas. Erlanger and Gasser⁷ of Washington University in St. Louis have convinced themselves, in a series of animal experiments on traumatic shock, that the viscosity of strong gum solutions may be quite harmful, but that when hypertonic gum and hypertonic glucose are given simultaneously and slowly so as to avoid altogether the period during which the high viscosity of the gum is hampering the circulation, a maximum saving of life can be effected. They argue that such beneficial results as they saw are presumably due to the internal transfusion effected by the hypertonic solutions, to the maintenance of the increased blood volume through the colloidal and possibly other properties of the gum, and to the action of the hypertonic solution on the heart and blood vessels, and to the specific action of glucose on nutrition in general and on that of the heart muscle in particular. They suggest, further, that blood transfusion is not essential to recovery even from the severest acute hemorrhage, if only the blood bulk can be restored in other ways. The apparent innocuousness of gum-glucose solutions given slowly has already justified a few trials on man⁸ which encourage further tests of the method. With the principles and certain limitations of the procedure well recognized through preliminary animal experimentation, the surgeon will be justified, we believe, in giving them further trial in the emergencies of shock that so often fail to yield to current modes of treatment.

HIGH PROTEIN DIETS AND NEPHRITIS

The science of pathology is still far from formulating an entirely satisfactory hypothesis for the genesis of all forms of nephritis. It is known, of course, that incident to the attempts of the kidney to eliminate certain substances like the salts of mercury or uranium or several other metals, a tubular nephritis of varying intensity may arise; and the acute injury may subsequently become chronic in its manifestations. There is considerable justification for the belief that the reaction of the secreted urine, which in turn is dependent on the nature of the food intake, is not without

influence on the behavior of the kidney cells under secretory stress. Usually, however, the etiology of nephritic changes is sought in some foreign factor, such as the inorganic possibilities just cited, or nephrotoxins or nephrolysins assumed to arise within the organism itself.

Although the alleged "strain" of eliminating a large quantity of those substances, namely, the products of protein catabolism in the body which the kidney is normally intended to excrete, has been pointed to from time to time as a possible cause of kidney damage, there has been little convincing evidence for such an outcome. Urea, which represents the great bulk of the nitrogenous waste, is evidently excreted with great ease. There are numerous recorded instances of large increments in urea output without any signs of kidney defect or detriment; but experiments to determine the functional efficiency of the kidney have usually been of comparatively short duration. The clinical forms of nephritis are frequently slow in making their appearance. Newburgh¹ has therefore attempted, in the department of internal medicine at the University of Michigan, to ascertain whether nephritis will be produced when the kidneys have been eliminating an unusually large amount of nitrogenous material over a considerable period of time. He argues that just as the kidney secretes ordinary medicinal doses of mercury without harm, but is injured when the quantity offered for elimination in a given time is augmented greatly, as it is in acute poisoning, so the renal cells may react unfavorably if the quantity of some or all of the nitrogenous substances secreted is increased and kept at the higher level for some time. In feeding experiments on rabbits, renal injury was quickly and constantly noted in animals that ate several egg whites daily. Prolonged egg white feeding caused acute and subacute nephritis. When the nitrogenous metabolism was increased by means of casein, rabbits suffered no demonstrable renal injury from eating 15 gm. of casein daily; but when the daily intake of casein was 30 gm., and the nitrogen metabolism was about three times normal, a well marked deleterious effect on the kidney was produced. Rabbits that lived for months on soy beans, which are rich in vegetable proteins, regularly acquired chronic nephritis and frequently died of it. The nitrogen metabolism from this diet was about twice the normal.

We may accept these observations, which are likely to be widely quoted by the advocates of a low protein diet or at least of greater economy in the use of protein, without admitting their wider significance in the etiology of human nephritis. The vegetarians will find little solace in the fact that sources of plant proteins were involved as well as the tabued animal products. Urea per se is not charged with the harm done. It must be remembered that the diets used by Newburgh

8. Erlanger, Joseph, and Gasser, H. S.: *Ann. Surg.* **69**: 389 (April) 1919.

1. Newburgh, L. H.: *The Production of Bright's Disease by Feeding High Protein Diets*, *Arch. Int. Med.* **24**: 359 (Oct.) 1919.

were potentially acid in character, and certain to produce an acid urine in a species adjusted and accustomed to secrete an alkaline fluid under a free choice of food. Until such experiments are successfully duplicated under conditions in which the normal reaction of the renal secretion is not tremendously altered and the accessory factors in the diet are known to be adequate, the incrimination of the high protein diets in connection with nephritis must be considered with judicial reserve.

THE ERADICATION OF TUBERCULOSIS

In the control of a disease like tuberculosis, which permeates all strata of society and which is obviously of an infective nature, there are clearly two factors concerned. It is, of course, essential that the disease should be scientifically studied from all aspects; but it is also necessary that the scientific knowledge that has been gained shall be transmitted in comprehensible form to the masses. There is no disease that has been more systematically and more intelligently combated than tuberculosis, and yet we have no more than scratched the surface. The disease continues to be one of the greatest scourges to which civilized man is subjected. Indeed, it is, as Krause¹ remarks, "a price we pay for our civilization."

In a recent address on the subject, Krause discusses the question of a progressive program for combating this disease. Incidentally, he points out, what had already become apparent, that the fight against tuberculosis will really be a fight against all diseases of an infectious nature; for the same principles underlie the prevention and cure of all parasitic disease. It is interesting to note that the keynote of this address by a scientific student of tuberculosis is not the necessity for further scientific investigation, though this is not denied, but the necessity for the wider application and diffusion of facts already long known, and for a much greater attention to the social aspects of the disease. Of what profit is our scientific knowledge of the etiology of tuberculosis if we fail to apply its obvious lessons? As Krause properly points out, we fail to control the most outstanding and obvious etiologic factors in the spread of tuberculosis. The statute books of our states are replete with antispitting laws, and yet our highways are spattered with expectoration. The regulations of boards of health on the subject of clean milk are voluminous, and yet clean milk is frequently unobtainable by the masses.

These, however, are not the only obvious factors that are neglected. As physicians we have known for generations that tuberculosis is undoubtedly associated with unsatisfactory social conditions. Poverty, insufficient or improper food, alcoholism and insanitary housing all predispose to the activity of tuberculosis infection. It may be said that the adjustment of such

conditions does not lie within the realm of the physician. The reforms that are necessary to change them must occur partly as the result of political action, and partly as the result of education. While there are some who hope to change these unfortunate conditions by revolutionary methods, there seems to be little reason to anticipate that much will be accomplished in this way.

SOME FEATURES OF ASCARIASIS

Ascariasis, or infestation with the eelworm, *Ascaris lumbricoides*, is one of the most common invasions of man by animal parasites. Although it is usually more frequent in childhood, it may occur at any age in the human subject. *Ascaris* is one of the parasites that have generally been asserted to develop in man by the direct method. No intermediate host is required. The swallowed eggs begin their transformation into the lumbricoid worm directly in the alimentary tract. A comparable roundworm is of very frequent occurrence in the intestine of the pig.

Stewart¹ has attempted without success to infect pigs by feeding *Ascaris* eggs to them. Rats and mice, on the other hand, were readily infested by this procedure. In the course of these studies he observed that the larvae find their way into the tissues and particularly into the liver and lungs of the host. The larvae then find their way back to the intestinal tract after migration through the pulmonary tissue, and may ultimately pass out of the alimentary canal without further development. This migration of the larvae of *Ascaris* has also been verified in experiments conducted by Yoshida² at the Osaka Medical Academy in Japan. These observations of the larval parasites in rats and mice, taken in connection with the apparent resistance of the pig to direct infestation with eggs, have raised the question as to whether the rodents act as intermediate hosts, the young worms being passed on to human beings (and to pigs) through the contamination of food and water by the saliva or feces of rats and mice that had themselves become infested by swallowing the eggs of the parasite.

More recent investigations by Ransom and Foster³ at the Bureau of Animal Industry in Washington indicate that it is not necessary to assume an intermediate host in the case of *Ascaris* infestation in man. The real explanation, they remark, of the behavior of *Ascaris* larvae in rats and mice is that the worms are merely going through the same course as they do in their usual hosts, man and pig. The rats and mice are, however, unsuitable hosts; hence the larvae are unable to complete their development to maturity.

1. Krause, F.: Am. Rev. Tuberc. 3: 513, 1919.

1. Stewart, F. H.: On the Development of *Ascaris Lumbricoides* Lin. and *Ascaris Suilla* Duj. in the Rat and Mouse, Parasitol. 9: 2 1916-1917, and several earlier papers in the British Medical Journal.

2. Yoshida, S.: On the Development of *Ascaris Lumbricoides* L. Parasitology, 5: 105 (March) 1919.

3. Ransom, B. H., and Foster, W. D.: Recent Discoveries Concerning the Life History of *Ascaris Lumbricoides*, J. Parasitology, 5: 93 (March) 1919.

them; whereas in human beings the parasitic larvae, after migration through the lungs and return to the alimentary canal, can continue their growth to an adult stage.

The "wanderings" of eelworms in man have been recognized for a long time, and such cases present a dangerous aspect of ascariasis.⁴ That the erratic ascarids may produce lung symptoms in man is more than likely. Ransom and Foster therefore properly remind us, in commenting on Stewart's interesting discovery of the migration of *Ascaris* larvae through the lungs, that this new aspect of the pathology of eelworm infestation is likely to lead to a better understanding of certain obscure diseases of the pulmonary organs. Other dangers from the migrations, whereby perforations of ulcers, liver complications, or other abdominal symptoms have arisen, are recorded in medical literature. Eelworms ought, therefore, to be treated as something more than a "passing curiosity."

Current Comment

MEDICAL VETERANS OF THE WORLD WAR

Our profession responded unselfishly to the call of our country during the world war. The demand for medical men was tremendous, but it was met. Including the 35,000 of the regular services, and the more than 25,000 on the selective service boards, over 60,000 physicians enlisted to support the ideals that the United States has endeavored to maintain. Although our entrance into the conflict was followed by a speedy victory, although our sickness and mortality rates were matters of pride and signaled a great achievement by the medical profession, it is no secret that these happy results were accomplished, in many instances, by great personal sacrifice and by altruistic devotion. In other words, unsatisfactory conditions in many instances were tolerated "for the good of the service"—to win the war—and the physician could only promise himself that should future occasion arise, certain things must be corrected. At the Annual Session of the American Medical Association, immediately following the termination of the war, a group of physicians who had been in the military service, having in mind their experiences, effected the organization known as the Medical Veterans of the World War, and invited into its membership not only those connected with the government services but also those who had served on the selective service boards. Dr. Vaughan,⁵ whose letter was published last week, and Surgeon-General Ireland,⁶ who discusses the subject in this issue of *THE JOURNAL*, believe that this organization is entitled to support. It should make possible a united effort by which the greatest good may be accomplished. Many things can be done that otherwise would remain undone. It offers a medium for the presentation of constructive criticism.

Finally, through this organization particularly may be preserved, by occasional gatherings, the sympathetic comradeship of men whose ideals today are as high as they were during the war.

BOTULISM FROM CANNED RIPE OLIVES

In recent editorials¹ *THE JOURNAL* has summarized our knowledge of botulism, especially with relation to extensive investigations made under the auspices of the National Canners Association and in the laboratories of the Leland Stanford University. Because of the violence of the symptoms and the rapidly fatal issue of poisoning with the toxins of *Bacillus botulinus*, the subject has interest beyond the extent of its relative importance in mortality statistics. The recently reported deaths following the eating of ripe olives in Detroit and in Canton, Ohio, were especially significant, because first reports seemed to indicate that the use of the ordinary precautions would not protect the user against such contingencies. There is now available more detailed report of these cases. We are informed² of some significant factors that have a practical bearing: First, various members of the party at the banquet in Canton, Ohio, in describing the olives used such expressions as, "Smelled like limberger," "bit the tongue," "soft," "not fit to eat," "stuck to the tongue," etc. Second, it was found that some of the olives had been washed previous to serving and that one person who ate two of these olives recovered. These factors would seem to lend strength to the contention of Weinzirl that the observance of ordinary precautions in eating, such as cleanliness, and the rejection of all food of which there is a suspicion of spoiling, will, in many cases at least, protect the user.

PROHIBITION AND THE DEATH RATE

The large number of deaths recently caused by the drinking of wood alcohol should not lead the public to overlook the important drop in the death rate from certain causes that has followed the legal prohibition of alcoholic beverages. Recent statistics³ show that for July, August and September, 1919, the number of deaths in Boston from alcoholism amounted to only 7, as compared with 31, 46, 38 and 34 for the corresponding period of the four preceding years. Similarly, accidents diminished from 152 in 1915, 176 in 1916, 197 in 1917 and 151 in 1918 to 112 for the corresponding three months of 1919. Suicides also diminished to a very marked degree. On the other hand, homicides showed no material decrease, a fact that has been noticed in other cities. It seems probable, however, that certain unusual factors are at work to increase the number of murders. As is usual after a great war, familiarity with means of violence and readiness to resort to such means are circumstances that must be reckoned with during the slow return to law and order. The diminution in the deaths from

4. Stiles, C. W., in Osler and McCrac: *Modern Medicine* 2: 290, 1914.

5. Vaughan, V. C.: *Medical Veterans of the World War*, Correspondence, *J. A. M. A.* 74: 48 (Jan. 3) 1920.

6. Ireland, M. W.: *Medical Veterans of the World War*, Correspondence, this issue, p. 122.

1. Botulism: I, II, editorials, *J. A. M. A.* 73: 1844, 1887 (Dec. 1, 20) 1919.

2. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism, this issue, p. 77. Botulism from Eating Canned Ripe Olives, *Miscellany*, this issue, p. 127.

3. *Month. Bull., Health Dept. City of Boston*, September, 1919.

alcoholism, accident and suicide that has occurred in Boston has been observed in many other large American cities, and the saving of life from these causes probably far exceeds the increased number of deaths from wood alcohol poisoning.

THE PRODUCTION OF PRESSURE SYMPTOMS BY NORMAL RIBS

The rôle of cervical ribs in the production of pressure symptoms has been understood for some time, though it is only since the introduction of the roentgen ray as an aid to diagnosis that the frequency of such lesions has been appreciated. Stopford and Telford have recently pointed out that not only cervical ribs but also perfectly normal first ribs may give rise to a similar syndrome. There are peculiarities about the production of symptoms in connection with rib pressure that may with propriety be recalled at this time. It is to be noted that women are more likely to develop such symptoms than men, although they are no more prone to the development of cervical ribs. It is further to be noted that although the rib abnormality is frequently present from birth, the symptoms may not appear until puberty or even later. In some instances trauma plays a definite part in producing the symptoms, particularly injuries that involve the trapezius muscle and interfere with its function as a support to the shoulder girdle. In other cases the symptoms appear spontaneously and without obvious reason, though in these patients also it may be that a lack of tone in the trapezius muscle is responsible. The pressure, no matter whether it is exerted by a cervical rib or by a normal first rib, is almost always on the lower trunk of the brachial plexus. The symptoms are more or less variable, depending on whether the motor, sensory or sympathetic fibers are mainly involved. Patients are likely to complain of neuralgic pain along the ulnar side of the forearm. They may develop partial paralysis of the intrinsic muscles of the hand and of the flexors and extensors of the wrist. Atrophy may occur, and often trophic and vasomotor phenomena are present. Pallor or cyanosis of the fingers, hypothermia, and even trophic ulcers in the distribution of the ulnar nerve have been noted. Objective sensory disturbances in which the protopathic sensibility is more pronouncedly affected than the epicritic sense may result, and in rare cases decidedly elective sensory paralyses are present. Attention is called at this time to those in whom the symptoms are due to a normal first rib, because these cases are not particularly uncommon. Stopford and Telford saw ten such cases in less than two years. In the diagnosis the roentgen ray is of no value, and in the past such cases have doubtless been wrongly diagnosed and wrongly treated because roentgenograms failed to show the cervical rib, and because the clinician did not recognize that a normal first rib could cause pressure and lead to the same syndrome.

Association News.

THE NEW ORLEANS SESSION

Headquarters for the Registration Bureau and the Exhibits

The Josephine Hutchinson Memorial Building, the home of the Tulane University School of Medicine, will house the Registration Bureau, the Information Bureau, the Association branch postoffice, and the Scientific and Commercial exhibits. It will also provide meeting places for three of the sections. Thus, the coming annual session will center at Tulane. The Hutchinson Memorial Building is near the business center of the city on Canal Street, between Villere and Robertson. This convenient location, the attractions of the exhibits, and the assured hospitality of the Louisiana profession extended through the Tulane Medical School assure a hearty welcome to those who attend the annual session at New Orleans, April 26 to 30, 1920.

Hotel Headquarters

The following hotels have been designated as the general and the various section headquarters for the New Orleans Session:

PRACTICE OF MEDICINE: St. Charles.
SURGERY, GENERAL AND ABDOMINAL: Grunewald.
OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Grunewald.
OPHTHALMOLOGY: Monteleone.



The Josephine Hutchinson Memorial Building, Headquarters for the New Orleans Session.

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY: Monteleone.
DISEASES OF CHILDREN: St. Charles.
PHARMACOLOGY AND THERAPEUTICS: Planters.
PATHOLOGY AND PHYSIOLOGY: Planters.
STOMATOLOGY: Lafayette.
NERVOUS AND MENTAL DISEASES: Lafayette.
DERMATOLOGY: De Soto.
PREVENTIVE MEDICINE AND PUBLIC HEALTH: De Soto.
UROLOGY: St. Charles.
ORTHOPEDIC SURGERY: Grunewald.
GASTRO-ENTEROLOGY AND PROCTOLOGY: Lafayette.
GENERAL HEADQUARTERS: Grunewald.

To New Orleans by Boat

Inquiries received from various parts of the country indicate that a number of physicians would like to make the trip to New Orleans by boat. These prompt the suggestion that physicians conveniently near to the Atlantic Sea Board and Gulf ports, as well as those at different points along the Mississippi and Ohio rivers, might arrange boat parties which should provide a pleasant and restful journey. It has been suggested further that if boats were chartered to go to New Orleans from different points and were docked there, these "house boat parties" would provide cool and delightful quarters for those who prefer to stay on the boats during the session.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Hospital Items.—The trustees of Spark's Memorial Hospital, Fort Smith, have purchased a building in which they propose to install a laboratory costing \$5,000.—A new sanatorium has been built and equipped at Arkadelphia, by Drs. Charles Wallis and J. Sheppard Moore.

New Officers.—The First Councilor District Medical Society at its meeting in Jonesboro, December 10, elected Dr. Hiram L. Throgmorton, Pocahontas, president; Dr. Charles M. Litterloh, Jonesboro, vice president, and Dr. Thad Cothorn, Jonesboro, secretary-treasurer.—Jefferson County Medical Society at its annual meeting, December 2, elected Dr. Mark A. Shelton, Wabbaseka, president; Dr. James F. Crump, Pine Bluff, vice president, and Dr. Joseph F. Gill, Pine Bluff, secretary-treasurer.—Drew County Medical Society at its annual meeting, December 2, elected Dr. Mardelle Y. Pope, president; Dr. Edward R. Cotham, vice president, and Dr. A. S. J. Collins, secretary-treasurer, all of Monticello.

ILLINOIS

Low Death Rate.—The death rate of Chicago for 1919 was 12.76 per thousand, the lowest in the history of the city.

Hospital Item.—Announcement is made that a United States Public Health Hospital is to be established at Great Lakes, the barracks of naval units No. 19 and No. 20 being employed for this purpose, after remodeling.

Fined for Insufficient Heat.—A number of landlords who have failed to provide sufficient heat for their tenants have been fined from \$50 to \$200 each. On hearing the evidence in one case, the court assessed the maximum penalty and ordered the defendant committed until the fine had been paid. So far as is known, this is the first fine imposed for an offense of this kind in the history of the Chicago Department of Health. The health commissioner caused the arrest of these persons on complaints of the tenants and of physicians who had patients resident in the buildings concerned.

Chicago

Society of Medical History to Hear Drs. Wood and Garrison.—The Society of Medical History of Chicago will meet January 17, at 8 p. m. at the City Club, to hear addresses by Col. Casey A. Wood, on "Walter Bailey, the First Writer of an Ophthalmic Treatise in English," and by Lieut.-Col. Fielding H. Garrison, on "Medical Men and Music," and "Remarks on the Medical History of the War." Those desiring to attend should notify the secretary, Dr. Stanton A. Friedberg.

INDIANA

Personal.—Dr. John A. Scudder, Edwardsport, is ill with septicemia in the Good Samaritan Hospital, Vincennes.

Banquet to Health Department Employees.—Dr. John N. Hurty, secretary of the state board of health, and Dr. William F. King, assistant secretary, gave their annual Christmas dinner to employees of the department, December 24.

Open Air School.—A new open air school has been opened by the Indiana State Sanatorium, with a capacity for about forty children. It is planned to introduce vocational work in the school, both for its therapeutic value and utility in later life. The general course of the state will be followed, interspersed with simple breath and muscular exercises and regulated rest periods.

Will Appeal Smith Case.—The state board of medical registration and examination has employed W. A. Cullop, Vincennes, as its attorney to carry to the supreme court its case against Dr. George F. Smith, Bicknell, whose license to practice medicine was revoked in February last year. A circuit court judge in Knox County decided against the board and ordered the license restored.

Verdicts For and Against Physicians.—In the case of Robert Frederick Volland against Dr. David J. Marshall,

Columbus, in which \$10,000 damages was claimed on account of severe burns alleged to have been the result of hot water overflowing on the complainant, the jury, December 19, returned a verdict in favor of Dr. Marshall.—In the case of Raymond Uland, Sullivan, against Drs. Edward T. Edwards and Vance A. Funk, both of Vincennes, in which malpractice was alleged, and damages of \$15,000 were asked, a jury, December 18, decided in favor of the plaintiff, awarding him \$2,000.

IOWA

New Officers.—Dubuque County Medical Society, at its annual meeting, December 9, elected the following officers: Dr. Charles Palen, president; Drs. Alanson M. Pond, Dubuque, and Richard C. Sherman, Farley, vice presidents; Dr. James E. Calhoun, Dubuque, secretary, and Dr. Godfrey C. Fritschel, Dubuque, treasurer.

Warning.—A report has been received that a tall, smooth-shaven man of fine appearance, passing under the name of J. T. McMillan, with graying hair, parted near the center, and brushed toward the sides in a wave, and weighing from 180 to 190 pounds, has been making contracts for the Lee Supply Company of Detroit, which is said to be out of business. This man is wanted by the police and information regarding him should be sent to the chief of police, Fort Madison.

KENTUCKY

Full-Time Health Department Voted Down.—The Harrison County fiscal court, at a special session, December 13, voted down the proposition for a full-time health department for the county by a vote of four to two. The movement was endorsed by the Harrison County Medical Society, Pomona Grange, Harrison County local Red Cross chapter, women's clubs and other organizations.

Health Work.—Dr. Platt W. Covington of the International Health Board has been loaned to Kentucky to assume the directorship of county health work. The state board of health is now in position to give \$5,000 annually to the first five counties making like appropriations.—The fiscal court of Daviess County appropriated \$5,000, December 11, toward a clinic to be established by the Rockefeller Foundation.

Personal.—The board of control of penal and charitable institutions has reappointed Dr. Frank L. Peddicord, Lakeland, superintendent of Lakeland Hospital for a term of four years, from May, 1919.—Dr. Clifford E. Harkey has succeeded Dr. Elbert W. Jackson as physician of Paducah.—Dr. Harry H. Lewis, Louisville, who has been on trial for murder of his wife, is said to have been declared of unsound mind by the jury.

New Officers.—At the annual meeting of the Clark County Medical Society at Winchester, December 31, Dr. Howard Lyon was elected president; Dr. Edward P. Guerrant, vice president, and Dr. George F. Doyle, secretary and treasurer, all of Winchester.—Daviess County Medical Association, at its annual meeting held in Owensboro, December 16, elected Dr. John C. Hoover, Owensboro, president; Dr. Cicero M. Rice, Sutherland, vice president, and reelected Dr. John J. Rodman, Owensboro, secretary-treasurer.

LOUISIANA

Another Plague Victim.—John Rich, a negro patient in the Charity Hospital, New Orleans, was found to have bubonic plague, and was removed to the Isolation Hospital, December 29.

Maternity Clinic to Be Opened.—A maternity clinic was opened at the Kingsley House, New Orleans, December 23, under the direction of Dr. Phillips J. Carter and Miss Grete Judice, nurse of the child welfare staff. The clinic is one of five which will be operated under the auspices of the Kingsley House and the Child Welfare Association.

Parish Society Election.—At the annual meeting of the Orleans Parish Society, December 13, the following officers were elected: president, Dr. Hector E. Bernadas; vice presidents, Drs. Hamilton P. Jones, Jerome E. Landry and Joseph M. Hountha; secretary, Dr. Edward P. A. Ficklen, and treasurer, Dr. Foster M. Johns, all of New Orleans.

MARYLAND

Appointment to Health Department.—Dr. William T. Howard, Jr., former assistant commissioner of health, has returned to the Baltimore City Health Department as a con-

sultant and expert in statistics. Dr. Howard will continue his duties as teacher in the Johns Hopkins School of Hygiene.

Mortgage Paid Off.—The committee to which was entrusted the securing of funds to pay off the mortgage on the building of the Medical and Chirurgical Faculty of Maryland Library, Baltimore, and of which Dr. W. Edward Magruder, Baltimore, was secretary, completed its work on the day the death of Sir William Osler, who made the first contribution of \$1,000 to the fund, was reported in Baltimore.

To Direct School Health Work.—With the idea of making the medical inspections of the schools of Baltimore more effective, Health Commissioner C. Hampson Jones has placed the work under the direct supervision of Dr. H. Warren Buckler, who now heads one of the divisions of the health department. For this work he will have the assistance of the twenty-eight health wardens. The new division will include the sixteen school nurses and the seven physicians who heretofore have reported directly to the commissioner of health. With the health wardens at his call, Dr. Buckler will have a large force of physicians available for examining schoolchildren, thus keeping the schools free from infectious and contagious diseases.

Services in Honor of Dr. Osler.—A notable gathering of members of the medical profession and other friends of the late Sir William Osler attended services in his honor at 3:15 o'clock on January 1, in Old St. Paul's Church, Baltimore. The time was set on receipt by Dr. Henry Barton Jacobs of a cablegram from Lady Osler, stating that the funeral services in England for the famous physician would be held at that hour. The ceremony at St. Paul's was most impressive. The trustees, faculty and student body of the Johns Hopkins University were represented, as well as the nurses of the training school and officials of Johns Hopkins Hospital. The Medical and Chirurgical Faculty of Maryland and the Baltimore City Medical Society were represented by leading members of the medical profession.

Tribute to Dr. Hurd.—The *Bulletin of the Johns Hopkins Hospital* for December contains a record of the work and writings of Dr. Henry Mills Hurd, Baltimore, who was the first superintendent of the hospital. Portraits of Dr. Hurd are shown from the age of 6 to the present time. Dr. Thomas S. Cullen, Baltimore, is the author of the article on Dr. Hurd and has arranged the record of his hospital reports year by year, so that an admirable history of the hospital is presented in small space and biographical data is placed in the record of each year. Dr. Cullen draws special attention to the tremendous amount that Dr. Hurd has accomplished and of how largely he has been responsible for the phenomenal success of the hospital. He also speaks of the splendid tribute to Dr. Hurd in the "Henry M. Hurd Library" of the hospital, plans for which are under way and the funds for which were the gift of the late George K. McGaw.

MASSACHUSETTS

Influenza Research.—Dean David L. Edsall of Harvard Medical school announces a gift of \$50,000, the greater portion of which will be used by Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, and his assistants to carry on exhaustive studies and research, to discover some means to prevent future outbreaks of influenza epidemics.

Personal.—Dr. Richard P. Strong, Boston, has been appointed chief medical director of the League of Red Cross Societies of the Nations of the World, with headquarters at Geneva.—Dr. Charles E. Prior, Malden, has been appointed a member of the state board of registration in medicine, succeeding Dr. Charles H. Cook, Natick, deceased.—Dr. Lowell F. Wentworth, Boston, has been appointed assistant commissioner in the department of mental diseases of the state department of health.—Dr. Hamlin P. Bennett, Lynn, was attacked by automobile thieves at a garage recently, and beaten into insensibility.

MICHIGAN

Personal.—Dr. Alvin L. Bailey, Chesaning, was struck by an automobile at Saginaw, recently, and suffered severe injuries.—Dr. Edwin M. Chauncey, Albion, has been appointed assistant in the internal medicine department of the University of Michigan.

Bulletin Michigan Department of Health.—The December issue of this bulletin is devoted entirely to the subject of cancer. It is discussed in such a way that the layman can understand what is said. This bulletin was prepared with

the cooperation of the American Society for the Control of Cancer.

Hospital Items.—Work is already under way on the new University Hospital, Ann Arbor.—The Will Curtis residence, Reed City, has been purchased and will be occupied as a hospital in place of the one recently destroyed by fire.—The Lange Hospital, Lansing, has been temporarily leased to the Sisters of Mercy of Jackson and will be operated by them until they can locate a proper site and erect a new building. It will be opened for service to the public, January 15. It is the purpose of the Sisters of Mercy to locate here, and through the operation of the Lange Hospital they hope to determine the needs of the city before building the new hospital.

MINNESOTA

Osler Memorial Meeting.—A meeting of the staff of the Mayo Clinic, Rochester, was called, December 31, in honor of the late Sir William Osler.

Personal.—Dr. Harry A. Britton, acting superintendent of city hospitals, Minneapolis, and Dr. Harry M. Guilford, city health commissioner of Minneapolis, have resigned.

Red River Valley Physicians Meet.—At the annual meeting of the Red River Valley Medical Society held in Crookston, the last week in December, Dr. O. Edward Bratrud, Warren, was elected president; Dr. Ralph L. Kirsch, Crookston, vice president, and Dr. Hallward M. Blegen, Warren, secretary-treasurer.

NEBRASKA

Personal.—Dr. Philip H. Bartholomew, Blue Hill, has succeeded Major Leader as head of the venereal disease work in Nebraska.

Society Election.—The Omaha and Douglas County Medical Society held its annual meeting and banquet, December 22, and elected the following officers: president, Dr. Paul H. Ellis; vice president, Dr. Arthur D. Dunn, and secretary-treasurer, Dr. Roy A. Dodge, all of Omaha.

Alumni Elect Officers.—At the ninth annual alumni meeting of the University of Nebraska, College of Medicine, held in Omaha, November 20, the following officers were elected: president, Dr. Charles R. Kennedy, Omaha; vice presidents, Drs. Jacob E. Meisenbach, Staplehurst, and John C. Davis, Jr., Omaha, and secretary-treasurer, Dr. William N. Anderson, Omaha.

NEW YORK

Erie County Society Elects New Officers.—At the ninety-eighth annual meeting of the Erie County Medical Society, December 16, the following officers were elected: president, Dr. Earl P. Lothrop; vice presidents, Drs. Arthur G. Bennett and DeWitt H. Sherman; secretary, Dr. Franklin C. Gram (reelected for the twenty-seventh consecutive term), and treasurer, Dr. Albert T. Lytle, all of Buffalo.

Hospital Items.—Bethesda Hospital, Hornell, has been raising funds for a new building.—It is reported that the buildings of the U. S. General Hospital No. 8, Otisville, are to be destroyed, as the New York Health Department does not allow the removal of buildings that have been occupied by tuberculosis patients for use in other places, and since the buildings for this hospital were erected on the grounds owned by the New York City Sanitarium, the rule is said to be effective in this case.

State Death Rate Higher.—The latest vital statistics report of the New York State Health Department shows that the general death rate for the state increased slightly in November over that of the preceding month, though it was still 17 per cent. below the average death rate for that month during the past five years. The birth rate for November was 20.4 per thousand population, which is much below the average for the years 1913-1917. The infant mortality rate for November was 66, which is 19 points below the average for that month. The number of deaths from diphtheria increased during the month of November, being 187 as compared with a five years' average of 142 for the same month.

Preschool and Other Clinics Established.—The Visiting Nurses' Association of Watertown, which has been conducting a child welfare clinic, has recently opened a preschool clinic, which is under the direction of Dr. Horace C. Montgomery, Watertown, and Miss Carey.—The board of health of the city of Elmira has authorized the establishment of a general clinic to include child welfare work and measures against tuberculosis and venereal disease.—At New

Rochelle, a committee has been appointed to interest the people of the community in a health center.—At Gloversville, a committee has been named by the board of health for the purpose of securing suitable quarters for a health center.

New York City

Smallpox on Ship.—On the arrival of the steamer *Duca Degli Abruzzi* from Genoa and Naples, January 3, two cases of smallpox were found on board. The patients were removed to Swinburne Island, and the 1,300 steerage passengers will be held on Hoffmann Island three weeks for observation.

Low Death Rate.—Health Commissioner Royal S. Copeland announced, January 3, that the death rate for greater New York was lower than any year since the department has been organized. For 1919, the mortality rate was 12.30 per thousand; 1918, 16.71 per thousand, and for the five preceding five-year periods, 13.94 per thousand.

Mary Putnam Jacobi Fellowship.—The Women's Medical Association of New York City offers this Fellowship of \$800, available for postgraduate study. It is open to any woman physician for work in any of the medical sciences. Applications for the year 1920-1921 must be in the hands of the committee on award by April 1, 1920. For information address Dr. Rose Cohen, secretary, 151 West Seventy-Eighth Street, New York City.

Organizations Warn Against Wood Alcohol.—A record of fifty-one deaths and at least one hundred cases of blindness due to wood alcohol during the first twenty days of December, has aroused to action the National Committee for the Prevention of Blindness, the New York Academy of Medicine, the department of health and Chief Medical Examiner Charles Norris. These agencies, after a conference, issued a warning to the public of the danger of drinking anything in the saloons that passed for whisky. Dr. Ward A. Holden has been designated by the committee on public health and hygiene of the New York Academy of Medicine to make an exhaustive study of wood alcohol in relation to blindness.

Personal.—Dr. Charles F. Hunt has been elected surgeon of the Defendan Association.—Theodore C. Lyster, Col., M. C., U. S. Army, who has been with the yellow fever commission in Ecuador, Colombia, and Southern Mexico, since March, 1918, returned to New York on the *Esperanza*, December 21.—Dr. Jacques Loeb of the Rockefeller Institute for Medical Research has been elected an honorary member of the Royal Institution of Great Britain and Ireland.—Wickliffe Rose, chief director of the International Health Board of the Rockefeller Foundation, and Dr. Richard M. Pearce, Philadelphia, director of the division of medical education of the board, sailed for Europe, December 11, to secure information about public health administration and methods of medical education in England and on the Continent.

OKLAHOMA

Personal.—Dr. George W. Goss, Pawhuska, has been appointed superintendent of health for Osage County.

New Officers.—Muskogee County Medical Society, at its annual meeting, elected the following officers: president, Dr. Pleasant P. Nesbitt; vice president, Dr. Joseph H. Sanford, and secretary, Dr. Joseph G. Noble, all of Muskogee.—Woodward County Medical Society elected the following officers: president, Dr. Ralph A. Workman, Woodward; vice president, Dr. Paul G. Eilers, Quinlan, and secretary, Dr. Charles W. Tedrowe, Woodward.—Kay County Medical Society met at Blackwell, December 11, and elected Dr. James C. Hawkins, Blackwell, president; Dr. Ralph P. Mavity, Bramer, vice president, and Dr. Isaac D. Walker, secretary-treasurer.—At the annual meeting of the Tulsa County Medical Society, Dr. Gregory A. Wall was elected president; Dr. Fred S. Clinton, vice president, and Dr. Albert W. Pigford, secretary-treasurer, all of Tulsa.

PENNSYLVANIA

Mellon Lectures.—The fifth Mellon lecture of the Society for Biological Research of the University of Pittsburgh was delivered by Major-Gen. William C. Gorgas, M. C., U. S. Army (retired), January 8, on "Yellow Fever," illustrating the application of modern sanitation and preventive medicine in the control of epidemic diseases.

Physicians Held Under Prohibition Law.—Four physicians of Pittsburgh and one druggist were arrested, December 27,

and are held under \$1,500 bonds each on a charge of violation of the war-time prohibition law. The physicians were charged with prescribing whisky to a special agent of the department of justice, and the druggist was charged with having sold a quart of whisky "for beverage purposes."

Public Health Activities.—To promote the public health and social welfare of the people of Lehigh County, a public health and welfare society has recently been organized in Allentown, of which Dr. Charles D. Schaeffer is president and Dr. J. Treichler Butz is vice president.—The new county health committee, under the guidance of Dr. Howard C. Frontz, Huntingdon, county medical director, have outlined a health program for the county which will be conducted on the broadest lines and include a tuberculosis committee to be affiliated with the Pennsylvania Society for the Prevention of Tuberculosis.

Personal.—Dr. Walter W. Seibert, Easton, has been appointed a trustee of the State Hospital, Rittersville.—Dr. Chester G. Crist, Gettysburg, has been elected coroner of Adams County.—Dr. Thomas M. Baird, Tunkhannock, recently discharged from service, has been commissioned lieutenant-colonel, M. R. C., U. S. Army.—Dr. Raleigh R. Huggins, Pittsburgh, has been appointed dean of the faculty of the School of Medicine of the University of Pittsburgh, succeeding Dr. Thomas S. Arbuthnot, resigned.—Dr. Henry C. McKinley, Meyersdale, has been elected secretary of the Somerset County Medical Society for the thirty-first consecutive time, having served for thirty years, or since the organization of the society.—Dr. William J. Crookston, Pittsburgh, has been commissioned lieutenant-colonel, Medical Corps, N. G., Pa., and assigned to duty with the first division.—Dr. Dewitt B. Nettleton, Pittsburgh, has been commissioned major, M. C., N. G., Pa., and assigned to duty with the First Field Artillery.—Dr. Constantine P. Faller, Carlisle, has been commissioned major, M. C., N. G., Pa., and assigned to duty with the Eighth Infantry.

The Wood Alcohol Question.—The commissioner of health of Pennsylvania has issued the following advertisement:

"TO MANUFACTURERS, DISTRIBUTORS AND DEALERS"

Owing to the unusual conditions arising in neighboring states from the sale and distribution of mixtures containing wood alcohol which has resulted in a large number of deaths, the Pennsylvania State Department of Health in conjunction with the Pennsylvania Food Commissioner and the Pennsylvania Board of Pharmacy and the Attorney General's Department hereby serves notice upon manufacturers, distributors and dealers that an embargo will be placed upon all non-official preparations containing alcohol unless the manufacturer, dealer or distributor of such preparations satisfy by affidavit the State Department of Health that the preparations do not contain wood alcohol. The affidavits must be filed with the State Department of Health on or before January 8th, 1920.

EDWARD MARTIN, Commissioner of Health.

By the act of July 17, 1919, the putting of wood alcohol in medicines, toilet preparations, etc., is punishable by a fine of \$500, and Thomas S. Blair, Harrisburg, chief of the bureau of drug control, has nine inspectors going over the state to examine into the enforcement of the law.

Philadelphia

Testimonial Dinner to Dr. Krusen.—A testimonial dinner to Dr. Wilmer Krusen, former director of public health and charities, was given by the physicians of Philadelphia at the Bellevue-Stratford, December 30. Dr. Hobart A. Hare was the toastmaster.

Pathologic Laboratory Dedicated.—At the dedication of the new pathologic laboratory of the Philadelphia General Hospital, the principal address was delivered by Dr. William H. Welch of Johns Hopkins University, who spoke of the important part played by morbid anatomy in the advancement of medicine. Addresses were also made by Dr. Arthur D. Bevan, Chicago, and Louis B. Wilson, Rochester, Minn.

Assistant Health Director Appointed.—Col. C. Lincoln Furbush, the newly elected director of public health and charities, has appointed as his assistant director, Dr. Norman H. Taylor of Chestnut Hill. Dr. Taylor after his graduation from Harvard Medical School was chief resident physician at the Pennsylvania Hospital before the war; he became first lieutenant in the Medical Corps of the Army and attended vacation courses at the Sorbonne, Paris.

Navy Hospital Abandoned.—After continuous use since the Civil War days, the United States Naval Hospital, at Twenty-Fourth and Gray's Ferry Road, has been ordered abandoned by the United States Navy Department. The

250 patients in the institution at the present time, will gradually be removed to the new naval hospital at the Philadelphia Navy Yard which has accommodations for 1,000 men. Besides the old hospital of Civil War days, three fine modern structures, which were erected in 1918, will be left vacant. It is thought that they may be made into an extension of the United States Naval Home on the grounds of which they are located, but no orders have been received to that effect.

Personal.—Dr. Ellen C. Potter, having been appointed a special lecturer in the health department of the Bryn Mawr College, has opened a course of lectures on social hygiene. —Dr. James R. Martin has been commissioned major, M. C., N. G., Pa., and assigned to duty with the First Infantry. —Dr. Harry A. Schatz has been commissioned first lieutenant in the Pennsylvania Reserve Militia. —Dr. Lawrence F. Flick has been elected president of the newly organized American Catholic Historical Society. —Dr. Horace B. Anderson has been appointed chief of the genito-urinary clinic at Phipps Institute, by the state commissioner of health. —Dr. Louis Schwartz, who for the past four and one-half years has been in charge of the medical department of the immigration service at this port, has been transferred to Ellis Island. Dr. Dana E. Robinson, who has been connected with the War Risk Insurance branch at Cincinnati, has been appointed to take Dr. Schwartz' place.

TENNESSEE

Personal.—Dr. George C. Thomas has been appointed health officer for the city of Greeneville. —Dr. Walter S. Nash has been appointed chief of the medical staff of the Knoxville General Hospital.

Society Meetings.—At the annual meeting of the Sullivan-Carter-Johnson County Medical Society, December 3, the following officers were elected: president, Dr. Wiley W. Vaught, Shouns; vice presidents, Drs. George E. Campbell, Elizabethton, Thomas F. Staley, Bristol, and James R. Butler, Mountain City, and secretary-treasurer, Dr. William K. Vance, Bristol. —At the annual meeting of the Memphis and Shelby County Medical Society, held at Memphis Country Club, December 18, Dr. J. Lucius McGehee was elected president; Dr. Julian B. Blue, vice president, and Dr. Joel J. Hobson, secretary-treasurer, all of Memphis. —Chattanooga Medical Association, at its annual meeting, December 5, elected Dr. William H. Cheney, president; Dr. Willard H. Seele, vice president, and reelected Dr. Hiller P. Larimore, secretary and treasurer.

CANADA

Released After Long Imprisonment.—Hon. Dr. Henri Severin Beland, St. Joseph de Beauce, Que., member of the Dominion House of Commons, returned to Canada, recently, after several years' imprisonment in a prison camp near Berlin.

Rockefeller's Donation to Medical Education.—Of the \$5,000,000 said to have been donated by Mr. John D. Rockefeller to the medical colleges of Canada, President Falconer and Dean Clark of the medical faculty of the University of Toronto say that they have had no official notification up to this time. In Ottawa, great interest has been manifested in the announcement, coming as it does on the renewed discussion of the removal of Queen's Medical College from Kingston to Ottawa. The Manitoba Medical College, the third largest in the dominion, expects to get at least \$1,000,000 of the donation, while the Western at London, Ont., will lay its claims before the Rockefeller Foundation so that it may receive its share.

GENERAL

Bequests and Donations.—The following bequests and donations have recently been announced:

Toronto General Hospital, a donation of \$250,000, by Sir Joseph Flavelle, chairman of the hospital board of trustees.

Rockefeller Institute for Medical Research, New York City, \$1,000,000 by the will of the late Jacob D. Schmidlapp.

American Section of the German Red Cross, a check for 2,500,000 marks donated by relief committees in the United States for the benefit of tuberculous and undernourished German children.

Senate Passes Bill for Treatment of Tuberculous.—On January 5, the senate unanimously passed the bill permitting civilian employees of the United States government who may be stricken with tuberculosis to enter hospitals already established by the Army and Navy and Public Health Service. Civilian employees of the government will, primarily, receive treatment in Public Health Service hospitals but, in emer-

gency, may go to Army and Navy hospitals. The bill now goes to the House of Representatives.

Appropriation for Research Work.—The Trustees of the American Medical Association have made an appropriation of money to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession, which otherwise could not be carried on to completion. Applications for grants should be sent to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, Chicago, before Feb. 1, 1920, when action will be taken on the applications at hand.

The Index Catalogue of the Surgeon-General's Library.—Volume 1, 3rd series, dated Aug. 1, 1918, covering the titles included under A-Army, has just appeared. The total number of volumes to date in the previous series is thirty-eight. The complete series, including the present volume, lists 349,313 author titles, including 178,000 volumes and 319,497 pamphlets. It also includes 309,499 book titles and 1,186,271 periodical articles—certainly an extensive accumulation of medical literature. The Surgeon-General's library itself includes 230,559 volumes, bound and unbound, and 352,523 pamphlets.

Red Cross Appointments.—The following appointments to the medical department of the League of Red Cross Societies are announced: Prof. George Chandler Whipple of Harvard University, chief of the division of sanitation; Col. Francis L. Langley, assistant chief; Dr. Thomas R. Brown, Johns Hopkins University, Baltimore, chief of the division of medical information and medical publication; Miss Alice Fitzgerald, chief of the division of nursing; Dr. George C. Shattuck of Harvard University Medical School, Boston, chief medical secretary, and Col. Henry A. Shaw, M. C., U. S. Army, in charge of the field work of the league in the prevention of communicable diseases in eastern Europe. Colonel Shaw will have as assistants, Lieut.-Col. George Fordham, M. C., U. S. Army, and Major S. H. Dunn, S. C., U. S. Army.

Red Cross and Order of St. John Unite.—An agreement has been signed by the Red Cross Society and Order of St. John by which the joint working of the joint corporations which led to good results during the world war will continue during peace. Under the agreement, a joint council has been appointed consisting of an equal number of members of each body and to this council is given the general control of the work of the two corporations. The matters which it is expected to bring under the immediate attention of the joint council are the care of the sick and wounded; such care as may still be necessary for prisoners of war; the care of those suffering from tuberculosis; child welfare; work parties to provide the necessary garments, etc., for hospital and health institutions; assistance required in all branches of nursing, health and welfare work, and home service ambulance work.

Physicians Desire Free Transportation.—The Cummins Bill providing for the return of the railroads to their owners, as finally passed by the Senate, does not contain the provision forbidding the use of free transportation to railroad surgeons. Such provision was contained in the Esch Bill as it passed the House, and prohibited free transportation to physicians and lawyers, "unless they devoted the principal part of their time to the railroad service." This provision of the Esch Bill was the occasion for wide-spread protest on the part of railroad surgeons and of local physicians for railroads who are called on in emergency to render medical aid in connection with the railroad service. The subject now will be determined by the Conference Committee appointed to adjust conflicting portions of the Cummins Bill and the Esch Bill between Senate and House. If the Conference Committee recognizes the hundreds of protests that have come to senators and members of the House, it is likely that this objectionable feature of the Esch Bill will be stricken out by the committee.

Regulation Proposed for Wood Alcohol.—State authorities, when fatalities occur, may prosecute for manslaughter and murder persons charged with selling wood alcohol for beverage purposes. However, additional legislation to safeguard the use of the poison will be recommended to Congress by the commissioner of internal revenue. The character of the proposed legislation has not yet been defined, but it is probable that it will be to place a tax on the manufacture and sale of wood alcohol, subjecting it to the restrictions which govern the manufacture and sale for nonbeverage purposes of ethyl alcohol, and requiring the holding of permits by those engaged in the traffic. There is no provision

in the internal revenue laws or in the National Prohibition Act regulating or affecting the manufacture, sale or distribution of wood alcohol, and the commissioner has no authority under present laws to regulate or restrict its use. The bureau of chemistry of the department of agriculture also has no effective control over the distribution of wood alcohol under the Pure Food and Drug Act, and new legislation is necessary if the federal government is to prohibit the use of wood alcohol as a beverage.

FOREIGN

The Nobel Prize in Medicine Not Awarded.—The Nobel prize in medicine has not been awarded since 1914.

Influenza in Spain.—Influenza is reported to have reappeared in Santander, Valencia, and other towns and to have caused many deaths.

Lepers Return Thanks.—A colony of lepers at Tarafangana, Madagascar, in a letter recently received, pays testimony to the relief extended by the American Red Cross.

Osler's Body Cremated.—The body of Sir William Osler, who died, December 29, was cremated, January 2. The urn containing the ashes will be taken to Oxford, and probably forwarded to his birthplace in Canada.

Lectures Before the Royal College of Surgeons.—The Thomas Vickery lecture was delivered by Sir John Tweedy, December 2, on "The Surgical Tradition," and the Bradshaw Lecture by Sir Charles Vallance, on "Surgery of the Heart."

Plague in Constantinople.—The *Wiener klinische Wochenschrift* quotes a press item from Saloniki to the effect that plague has appeared in Constantinople and the government of Greece has declared a four-day quarantine for travelers arriving from Constantinople.

Yellow Fever in Mexico.—Press reports state that an epidemic of yellow fever is reported in many cities and towns in Yucatan, Campeche, Chiapas, and Oaxaca, and that quarantine has been established at Tampico against Salina Cruz, Progreso, Frontera and other ports.

Personal.—Sir Donald MacAllister, superintendent of the British General Medical Council, has been invested by President Poincaré, with the Cross of the Commander of the Legion of Honor.—Surg.-Gen. Sir Alfred Keogh and Sir Almroth E. Wright have had the honorary degree of doctor of science conferred on them by the University of Leeds.

League of Dispensing Physicians in Switzerland.—The *Correspondenz-Blatt* states that the physicians who dispense their own drugs in the by-ways of Switzerland's mountain fastnesses have combined to form a league of dispensing physicians to maintain their rights, and combat abuses, such as the sale of drugs by incompetent persons, and to obtain the advantages of collective purchasing, etc. The officers of the league include Dr Trösch of Biglen and Dr. Schaad of Herzogenbuchsee.

Deaths in the Profession Abroad.—Dr. Troisième, professor agrégé of clinical medicine at the University of Paris.—Dr. J. Hoffmann, professor of neurology at the University of Heidelberg.—Dr. K. Moeli, professor of forensic medicine at the University of Berlin.—Dr. A. Onodi, professor of laryngology at the University of Budapest, author of numerous works on the anatomy, physiology and innervation of the throat, aged 62.—Dr F. Di Donato, a physician of Rome who took the leading part in organizing mountain and seashore colonies for weakly children.

Typhus Relief in Poland.—For purposes of administration, Poland has been divided into six districts with headquarters, respectively, at Warsaw, Lodz, Kielce, Lublin, Lonzia and Lwow. The active operations for the elimination of typhus and other infectious diseases are being handled by the central committee of the ministry of public health, which consists of Col. Harry L. Gilchrist, M. C., U. S. Army, and Drs. Viktor Hyszkiewicz, and Ludwik Rajchman of the ministry of public health of Poland. Departments of propaganda, transportation, statistics, hospitalization, quarantine, finance and schooling have been established and a Polish official has been placed in charge of each department. Each district is divided into counties and at the head of each county is a medical officer of health appointed by the minister of public health. Lieut.-Col. Lee R. Dunbar, M. C., U. S. Army, has been appointed to take charge at Lublin; Lieut.-Col. Edward C. Register, M. C., U. S. Army, at Lwow, and Major Willis P. Baker, M. C., U. S. Army, at Kielce. These officers are closely associated with the Polish district medical officers and will conduct activities in cooperation with them. The

personnel of the Polish Typhus Relief Expedition consists of twenty-two officers and 420 men with thirty-one trainloads of supplies, including 10,000 beds, equipment for 40,000 beds, 1,000 tons of soap, 50 tons of washing soda, 1,000,000 suits of underwear, all the mobile laundries and sterilizers of the American Expeditionary Forces, 320 ambulances, 320 touring cars, and 160 heavy trucks, a large quantity of drugs and other supplies purchased from the American Army in France, five complete hospital trains, and sixty-eight cars of American Red Cross supplies. Experts are setting up mobile steel laundries in eight of the large cities to provide cleansing facilities for the poor and needy. Hospital repair and construction units are at work in two of the sanitary bases of the worst infected districts. Four field columns, each of twenty enlisted specialists under commissioned officers of the Army are supervising the bathing and delousing at a rate of 800 each, daily. Hospitalization and quarantine operations are being conducted in many places in the south and east of Poland, and American property purchased by Poland is being conveyed from the warehouse in Warsaw to towns and communities designated at the rate of about ten truck loads a day. Word has been received from Col. Harry H. Snively, director of field operations, that at Lemberg, 50,000 people are waiting to be bathed and deloused. Five medical officers have been assigned to the quarantine station and military cordon, along the eastern border of Poland, and a strict quarantine is being placed along the border to prevent the large influx of refugees into Poland, before having been bathed and deloused.

The German Inhumanity at Lille.—THE JOURNAL mentioned at the time the protest signed by Calmette and four other members of scientific organizations who had remained at Lille during the long occupation by the Germans, and witnessed the "actes de barbarie" which they specified, saying in conclusion: "The high command in Germany willed the war, but the people in arms approved it, and resolutely waged war with the most ferociously cruel means, even the physicians with the army doing the most odious acts without a word of excuse, regret or pity." (THE JOURNAL, Dec. 28, 1918. Also in Paris Letter, March 8, 1919, p. 742). The *Deutsche medizinische Wochenschrift* of April 10, 1919, related that the matter was brought up in the Berlin Medical Society, and Calmette's protest and the resolutions voted thereon by the Académie de médecine at Paris were discussed. Dr. Fuld offered a resolution that the society should go on record as expressing its regret ("das tiefe Bedauern") at such happenings as were specified in the Calmette protest, but his suggestion was opposed by Orth and others, the speakers saying that there was no proof of the truth of the statements made by Calmette, and no voting should be done on a matter of which only one side had been presented. However a committee was appointed "nach einer ungezügelter 1 stündigen Geschäftsordnungsdebatte—" to report after obtaining an official copy of the resolutions that had been adopted by the Académie. The *Deutsche medizinische Wochenschrift* of Nov. 6, 1919, relates that this committee recently presented its report. It was in the form of a resolution which was adopted without a dissenting voice—"widerstandslos angenommen." The members of the committee were Fuld, Krauß, Krause, Morgenroth and Schwalbe, the latter the editor of the *Deutsche medizinische Wochenschrift*. The resolution reads:

"Die Berliner medizinische Gesellschaft ist nicht in der Lage, über die Erklärung der Liller Professoren und der Akademie der Medizin sowie über die deutsche Rechtfertigungsschrift, 'Lille unter deutscher Verwaltung und die Kritik des Gegners', zu entscheiden. Sie steht aber nicht an, offen zu erklären, dass sie alle inhumanen Handlungen auf das schärfste missbilligt, wo, wann, und von wem sie begangen sein mögen. Diese Stellungnahme entspricht dem von der deutschen Ärzteschaft stets hochgehaltenen Geist der Medizin, jenem wahrhaft internationalen Geist, dem wir huldigen, dessen Anerkennung wir aber auch bei allen anderen Ärzten, gleichviel welchem Volke sie angehören, voraussetzen."

"The Berlin Medical Society is not in a position to pass judgment on the Manifesto of the Lille professors and the Académie de médecine and on the published justification issued by the German authorities, entitled 'Lille under German Rule and the Criticism of the Foe.' But the society does not hesitate to declare openly that it condemns in the most unqualified manner all inhuman actions, wherever, whenever, and by whomsoever they may be committed. This attitude corresponds to the spirit of medicine always held high by the German medical profession, that really international spirit to which we are loyal and to which we assume all other physicians are loyal wherever they may be and to whatever nation they may belong."

Government Services

Personnel of the Medical Department

For the week ending January 2, the Medical Corps contained 2,193 officers; the Medical Reserve Corps contained 4,249, an increase of eleven over the previous week.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

ARKANSAS	TEXAS
Arkadelphia—Brown, C. C.	Houston—Flickwir, A. H.
INDIANA	UTAH
Indianapolis—Mitchell, E. H.	Salt Lake City—Marshall, H. L.
LOUISIANA	VIRGINIA
Spring Hill—Browning, B. L.	Covington—Gardner, F. P.
MISSOURI	WISCONSIN
Kansas City—Walker, J. C.	Racine—Colbert, C. N.

Cuban Order for Colonel Havard

President Menocal of Cuba has conferred the Cuban Order of Military Merit on Col. Valery Havard, M. C., U. S. Army, retired, in recognition of his work in sanitation in the Cuban Army.

Historical Division of Medical Department

A historical division, which will handle all matters pertaining to the medical and surgical history of the world war, has been created in the office of the Surgeon-General. Col. Charles Lynch, M. C., U. S. Army, has been designated as chief of the department and is assisted by Drs. Louis C. Duncan, M. C., U. S. Army, Raymond C. Turck, M. C., U. S. Army, and contract surgeons Casey A. Wood and Roy McAfee.

Hospital Ship Launched

The U. S. Hospital Ship *Relief* was launched at the Philadelphia Navy Yards, December 23, and was christened by Mrs. William C. Braisted, wife of the Surgeon-General of the Navy. The vessel is of 10,000 tons displacement, 433 feet long, has a speed of 60 knots, and a capacity for 500 patients with complete operating room and hospital equipment. An appropriation of \$3,250,000 was made by Congress for the construction of this ship.

Examination for Army Medical Corps

The Surgeon-General of the Army announces that preliminary examinations for appointments in the Medical Corps, U. S. Army, will be held March 15, 1920, at various points throughout the United States, in the Philippine Islands, Hawaiian Islands, Panama Canal Zone, Porto Rico, France, Germany and Siberia. The vacancies in the Medical Corps now amount to about 725 and since the armistice, resignations have been accepted at a rate of about twelve a month. The requirements are that the applicant shall be a citizen of the United States, between 22 and 32 years of age, a graduate of a medical school authorized to confer the degree of doctor of medicine, and that he shall have had at least one year postgraduate hospital internship, the latter requirement being waived in the case of those who have served as commissioned officers for at least one year during the world war.

Awards of Distinguished Service Medal

The Distinguished Service Medal has been awarded to the following officers of the Royal Army Medical Corps:

Major Gens.—Sir Robert Jones, eminent orthopedic surgeon and chief of Division of Orthopedic surgery, British army. Placed at disposal of medical service of A. E. F. his eminent talents and broad experience in standardizing methods of treatment for sick and wounded and took active personal interest in class instruction of American medical officers.

Sir Anthony Bowlby, while serving with the B. E. F. in France devoted his time and energy toward cooperating with and unreservedly placing at disposal of the A. E. F. his eminent talents, broad experience and knowledge of general conditions in preventing wastage among our forces from wounds and disease. His research work in wound bacteriology and evacuation resulted in saving many lives among our sick and wounded.

Cuthbert Wallace, while serving with the B. R. F. in France, devoted time and energy toward promoting standard methods for efficient treatment of American sick and wounded.

Sir Henry Thompson, director of the medical service, 1st British Field Army in France. Placed time and energy at disposal of A. E. F. The sanitary school maintained in his army for teaching front-line medical requirements was utilized for instruction of American medical officers sent to him by classes. The observation and experience gained by these student officers under his able supervision and guidance eventually resulted in saving lives of many American wounded.

Report of the Surgeon-General, U. S. Army, for 1919

This report appears in two massive volumes containing in all 2,167 pages and covering the experience of the medical department of the United States Army for the year 1918. It records the expansion of the army from a group of less than 100,000 men to one of 3,500,000; transportation of more than 2,000,000 soldiers, with all necessary equipment and supplies, to Europe and the safe return of the vast majority to this country. In his report to the Secretary of War the Surgeon-General says: "It was only by the concentrated and combined efforts of the country, as a whole, that the undertaking was successfully accomplished." "Practically the entire medical profession of the United States," he says, "became the medical department of the army and navy." In his letter he recapitulates the organization of the army and the construction of hospitals for the care of the sick. The effect of the influenza epidemic plays a leading part. In summarizing his letter of transmission, Surgeon-General Ireland says:

1. The total number of admissions during 1918 for diseases for officers and enlisted men, American and native troops, was 2,422,362; for ordinary injuries, 182,789; and for battle injuries, 227,855.

2. The total number of deaths from disease was 47,384; from wounds received in battle (cases treated in hospital), 13,735; killed in action, and lost at sea, 34,359; from ordinary traumatism, 3,500.

3. Including the deaths from 1917, there were 50,714 from disease and 52,423 as the result of injuries of various kinds, including wounded, killed in action, and lost at sea.

4. The total number of days lost from disease for the year was 40,692,302; from battle injuries 12,545,442; and from ordinary injuries 3,687,060. The average number of men absent each day of the year on account of sickness and injuries was 155,957. Seventy-one per cent. of the time lost was caused by disease, 6 per cent. by ordinary injuries, and 22 per cent. by battle injuries.

5. Since the soldiers of the Civil War for the United States Army were drawn only from the Eastern and Northern States, with a few from the Western States, if other conditions had been the same, the rates should have been lower for the first two years of the Civil War than the corresponding rates for the Army in 1917-1918, which was made up of troops from all sections of the country, including the colored.

6. For the first two years of the Civil War, as compared with 1917-1918, the admission and the death rates for disease was three and one-half times as high.

7. Comparing the rates for the Spanish-American War and the Philippine Insurrection, 1898-1899, with those for 1917-1918, the admission rate in 1898-1899 was a little over twice as high and the death rate about 20 per cent. higher.

8. The admission rate for the specific fevers and the diseases of the intestines (including diarrhea and dysentery) was twenty-nine times as high in 1861-1862 as in 1917-1918 and the death rate was 258 times as high.

9. For these diseases for 1898-1899 the admission rate was twenty-four times as high and the death rate 125 times as high as in 1917-1918.

10. For the acute infectious diseases (excluding influenza pneumonia, and the common respiratory type) the admission rate for 1861-1862 was practically the same as in 1917-1918. The death rate in 1861-1862 was two and one-half times as high as in 1917-1918, but 8 per cent. lower in 1898-1899 than in 1917-1918.

11. The respiratory type, including influenza, pneumonia and the common respiratory diseases, had higher admission and death rates for 1917-1918 than for either 1861-1862 or 1898-1899.

12. Influenza, probably associated with virulent pneumonia was epidemic during the latter part of 1917 in this country and in Europe. The epidemic wave declined during the cold, dry, winter weather, and increased again in the spring after which time it again declined, but continued throughout the summer to rise again to the high point in the autumn months.

13. Influenza, combined with pneumonia and respiratory diseases, caused 17.33 per cent. of the total admissions for

diseases, and 82 per cent. of the total deaths. This type of disease was the most important cause of loss of time.

14. All of the epidemic diseases other than influenza, pneumonia and the common respiratory diseases declined after the first part of 1918. The rates for most of these diseases were lower during the first part of 1918 than during the latter part of 1917.

15. Approximately 5.6 per cent. of the men who came into the military service from civil life had a venereal disease.

16. Approximately 7.4 per cent. of all the men in the army were detected with a venereal disease some time prior to their leaving the United States.

17. Of this number three fourths had contracted the infection prior to coming into the military service.

18. Two thirds of all that were detected with a venereal disease in the entire army, during 1917-1918, brought the infection in from civil life.

19. The occurrence rate in Europe and in the United States of new cases of venereal diseases in the army was approximately the same.

20. The negroes in the United States had an admission rate for venereal diseases of seven times as high as the whites.

21. Practically 70 per cent. of the negro soldiers either had a venereal disease when brought in from civil life or contracted an infection during 1918.

22. Of the average number of colored soldiers who served in the United States during the year 1918, 4.6 per cent. had to be discharged for a venereal disease.

23. The rate for venereal diseases for the colored in countries other than the United States was slightly higher than the rate for the whites.

24. The nativity rates for venereal diseases for the negro soldiers from the South, as compared with the white soldiers from the South, show that the negro had approximately four times as much venereal disease as the whites from the same section.

25. The nativity rates for the white soldiers from the various sections of the country show that the white soldiers from the South had higher rates for venereal diseases than the white soldiers from other sections of the country.

26. The nativity rates show that the white soldiers from the South have higher rates for measles, mumps, cerebrospinal meningitis, bronchopneumonia, lobar pneumonia and influenza, and that the soldiers from the West and Northwest have higher rates for scarlet fever, diphtheria and German measles.

27. The soldiers from the Eastern States had lower nativity rates for mumps and measles, but the soldiers of the West and Northwest had lower rates for influenza, bronchopneumonia and lobar pneumonia and meningitis. This low standing of the latter states may possibly be due to the recent immigration to them.

28. The negroes have lower admission rates than the whites of the country at large for measles, German measles, scarlet fever, diphtheria and influenza, and much lower rates for these diseases than the whites from the South.

29. The negroes have higher rates for meningitis and tuberculosis than the whites from the entire United States, but approximately the same rates for them as the whites from the South.

30. The incidence rate for all forms of pneumonia, both primary and secondary, was nearly three times as high for the colored as for the whites of the entire country. The death rate was more than twice as high, but the case mortality was 20 per cent. lower.

31. As compared with the whites of the South, the negro had a nativity rate for the combined pneumonias of more than twice as high.

Following his letter of transmission, the Surgeon-General presents the statistics covering the health of the army; a tabulation of the strength of the army; a complete discussion of all of the large camps in the United States, thirty-seven in number; a vast department on infectious diseases occupying pages 618-1015, discussing the infectious diseases, as a whole, and as they affected various parts of the service; a separate discussion of the work of each of the special divisions of the Surgeon-General's Office, and, finally, the work of the expeditionary forces abroad. A significant feature of the report, as a whole, is the lack of personal mention of any medical officer in relation to the service done. This appears to have been the custom of similar reports in previous years. The extent of the compilation and its value as a reference work are, of course, permanent. The Surgeon-General's Office is to be congratulated on having issued such an important document in such good order and with such facility.

Foreign Correspondence

PARIS

Dec. 4, 1919.

Important Modifications of Disability Pensions

In a former letter (*THE JOURNAL*, May 17, 1919, p. 1479), I reported certain increases in military pensions. Since then a number of worth-while reforms in the military pension system have been introduced. For example, as regards the furnishing of proof that the wound or the disease in question was actually contracted in the service, the new law establishes the "presumption of origin" in favor of applicants for pension. This applies not only to the term of actual service but, if it is a question of disease, also to the six months following the demobilization. It suffices, in order to take advantage of the presumption of origin, that the applicant shall have made, within the time limit of six months, written application to the regional director of the army medical department. The burden of proof as to whether the wound or the disease in question was contracted in the service or not rests on the state.

On the other hand, the number of pensions to be allowed having been settled, there seemed to be a need of doing away with some of the formalities complicating payment. For instance, according to the laws and regulations as they formerly existed, the army medical department acted in the matter of pensions in a purely advisory capacity. Henceforth, it will be the duty of the army medical department to institute demands for pensions and to superintend all matters of a medicolegal nature until the decision of the pension board is reached. The personnel of the pension boards has of late been modified in such a manner as to give the weight of authority to the physicians, who formerly acted only in an advisory capacity (*THE JOURNAL*, June 28, 1919, p. 1929).

The instructions in regard to the examination of pension claims have also been simplified. The chief surgeons who act as chairmen of the pension boards have received instructions not to insist too strongly on finding the causes of the infirmities, unless there are elements in the case that might cause one to infer some cause extraneous to military service. The presentation of the hospital card of admission suffices to allow the presumption of origin to operate, when it is a question of disease, or to establish such origin if it is a wound that is being considered. The examination of pension claims is conducted now by two physicians instead of five as formerly. These two physicians devote themselves exclusively to the expert survey of pension claims. An interesting modification is the establishment of local sessions of the pension boards throughout the country. Applicants, especially those who are untransportable, may take advantage of these sessions and be examined at home. This also makes it possible for their family physician to render them aid, as is authorized by law. The applicant may, moreover, be excused from presenting himself in person, in which case the pension board may decide the case on the basis of written evidence. The number of pensions granted by the pension boards is constantly increasing. From 8,700 in January, 1919, the number rose to 40,000 in September, 1919, and now the number has passed the 150,000 mark.

Death of Physician in Accident

Dr. Jaugeas, assistant roentgenologist in the Saint-Antoine Hospital, has just met death under distressing circumstances. He had been called to the American Hospital at Neuilly to do some roentgenologic work. While he was occupied in adjusting the Coolidge tube in order to regulate the quality of the roentgen rays, a terrible deflagration occurred and Dr. Jaugeas was electrocuted on the spot. Jaugeas had been for seventeen years Dr. Béclère's assistant in the roentgenologic laboratory of the Saint-Antoine Hospital. In 1913 he published a valuable compendium on radiodiagnosis.

Industrial Diseases and the Workmen's Compensation Law

The senate has just passed a bill that had been previously approved by the chamber of deputies which provides that certain industrial diseases shall be brought within the scope of the workmen's compensation law. The law in the form approved by the senate recognizes only two diseases as having the character of industrial diseases, namely, lead and mercurial poisoning (saturnism and hydrargyrisms). Provision is made, however, for the amplification of the law and the recognition of other diseases as industrial diseases. In

view of this ultimate extension of the law and also for the purpose of preventing industrial diseases, the law makes it compulsory for any physician who recognizes the existence of a disease presenting the characteristics of an industrial disease to report such to the minister of labor. For reporting such diseases, stub books are furnished physicians gratis, and reports are frankable.

The new law imposes a penalty of from 100 to 500 francs or imprisonment for from three days to six months on any one who by threats, gifts, promises of reward, or "ristourne" (underhanded rebates) on medical fees or pharmaceutical supplies made to injured workmen or to syndicates or associations, or to the heads of industrial enterprises, to insurance companies or to any other person, shall induce or attempt to induce the victims of industrial accidents or of industrial diseases to enter any clinic or any physician's office or any pharmaceutical laboratory and shall have thus attempted to deprive a workman of the liberty of choosing his physician or his pharmacist. This legislative action was taken on account of the shameful practices of a certain class of tricksters whose ranks have seemed to be growing the past few years.

A Medical Controversy

At the last general meeting of the Syndicat des médecins du département de la Seine, several members of this corporate body took the floor to attack the conduct, during the war, of certain men who are military surgeons by profession. Others went still further and preferred general charges against the army medical department, maintaining that during the war it had often shown itself inadequate to the task that rested on it. The president of the syndicat, Dr. Leredde, made the following suggestion: "The best thing to do will be to make an inquiry into the activities of the army medical department during the war, and for the Corps médical non militaire to consider the best way of reorganizing this service in agreement with the Union des syndicats médicaux." To this proposal the military surgeons by profession have replied, not without reason, that in that case the civilian physicians would be both plaintiff and judge.

The Milk Shortage in Paris and Vicinity

At no time since the beginning of the war have Paris and the department of the Seine been so inadequately supplied with milk as at present. Before the war (in 1913) 830,000 liters of milk were shipped in daily, and 115,000 liters were produced locally, which made the total daily consumption 945,000 liters. During the war and since, shipments from without, as well as local production, have continued to diminish, and, at the present time, Paris and its environs have become reduced to 473,000 liters, which is only 50 per cent. of the prewar supply. Besides, the population of Paris and its suburbs has increased considerably during the last few years, so that if the present supply of milk were divided equally among the inhabitants the per capita apportionment would be scarcely one-tenth liter.

M. Martel, chief of the veterinary and public health service of Paris and the department of the Seine, has recently called the attention of the Academy of Medicine to this state of affairs, pointing out at the same time the causes. This unfortunate situation is due, he states, to the systematic destruction of milch cows in the regions invaded by the enemy; to the misuse of milk in order to obtain certain derivative products by reason of the high prices secured for these (which explains why in the devastated regions of France milk is selling at 70 centimes [13 cents] per liter wholesale, while butter is sold for 18 francs per kilogram [\$1.58 per pound]); to last summer's drouth, which caused an advance in the prices of various kinds of cow feed; to aphthous fever, which has been prevalent in numerous dairy sections of the country, and finally to the greed of certain producers who take advantage of the exigencies of the situation to boost the prices.

How is this milk shortage to be remedied? In the first place, as soon as spring opens, milch cows at reasonable prices should be placed at the disposal of the farmers of the devastated regions, while, at the same time, the carrying out of the provisions of the peace treaty with Germany should be hastened (especially as regards the surrender of the stipulated number of milch cows, is doubtless meant.—Ed.). Furthermore, the order prohibiting the use of fresh milk and cream in cafés, tea rooms, etc., as reported in a previous letter (THE JOURNAL, Nov. 15, 1919, p. 1539) should be strictly enforced. It would perhaps be advisable, in order to enforce the requirements of this order, to prohibit in such

establishments the sale of milk in any form whatsoever. It would also be well to prohibit, or at least to control, the manufacture of cream cheeses, the extraordinarily high prices of which permit the manufactures operating in Normandy to offer to milk producers prices such as the milk companies supplying the cities cannot hope to secure. Likewise, it would seem in place to prohibit on the market the listing of the so-called "extra" grade of veal, the production of which requires an excessive consumption of milk. An appeal must also be made to the conscience of the heads of families in order that the use of preferential milk tickets may be confined to those for whom milk, by reason of age or sickness, is an actual necessity.

Professor Pinard, also, has protested against the custom that prevails in certain sections of feeding young calves large quantities of milk, giving a single animal as much milk as five or six patients or fifteen babies would require.

For the study of the milk question the Academy of Medicine has appointed a commission composed of Professors Pinard and Ribemont-Dessaignes, Dr. De Fleury and M. Martel. At the instance of this commission, the Academy of Medicine has passed a resolution embodying four lines of action which it recommends be taken to cope with the situation: 1. The sale at cattle markets, abattoirs or meat shops of milk-fatted calves, so-called "veau de lait," should be prohibited. 2. The manufacture and sale of cream cheeses should be suppressed. 3. The order of Oct. 10, 1919, with respect to the use of fresh cream and milk, should be strictly enforced. 4. The prefecture of the department of the Seine should be requested to study out a system by which patients could secure without fail fresh milk at any time, and more particularly the prefecture should be asked to consider the feasibility of fresh milk being kept on hand by pharmacists and sold to those who produce medical prescriptions for it.

A Maternity Hospital for Unmarried Mothers

M. Herriot, the mayor of Lyons, has induced the general council of the department of the Rhone to appropriate the sum of 200,000 francs for an exceedingly humane project, namely, the establishment of a secluded maternity hospital which will be open without distinction to all unmarried prospective mothers. Thus far it has been equipped with forty-five beds.

LONDON

Dec. 17, 1919.

A Higher Qualification in Ophthalmology

The Council of British Ophthalmologists has issued a report on examinations in ophthalmology. At present there are examinations of two classes: (1) that in which ophthalmology forms part of a higher examination in medicine and surgery, as for the M.D. or M.S. of the University of London, and (2) that in which qualified physicians are examined independently of any examination in general medicine and surgery, as, the diploma in ophthalmology of the University of Oxford. The first examination in ophthalmology as a special subject was established by the Royal College of Surgeons of Edinburgh in 1883. In the examination for the fellowship, ophthalmology is compulsory. At the University of London, ophthalmology has recently been recognized as a special branch of the M.S. degree, the candidate having had to spend at least two years in the study and practice of ophthalmology at an approved school for one year at least subsequent to obtaining the M.B., B.S., and to hold during this time for at least six months an appointment in the ophthalmic department of a recognized general or ophthalmic hospital. A circular letter was sent to the principal hospitals of the United Kingdom asking what professional qualifications were required for candidates for the post of ophthalmic surgeon. Most of them required higher qualifications in surgery, but these often did not imply a special knowledge of ophthalmology. Only five required this. In the present higher examinations there is seldom any adequate test of a candidate's knowledge of ophthalmology. The report concludes with the recommendation that the universities and colleges should provide a special examination in ophthalmology for those who propose to devote themselves to it. Ophthalmology should be one of the optional subjects which a candidate can elect to be examined in for the degree of Master of Surgery of a university or for the fellowship of a college of surgeons. Before presenting himself, the candidate should have studied ophthalmology for at least two years and held recognized ophthalmic appointments for one of these years. The special examination in ophthalmology should be written, oral and practical, and should comprise

anatomy, pathology, optics, systematic and clinical ophthalmology, and operative surgery.

Graduate Medical Teaching in London

The problem of graduate medical teaching in London continues to exercise the leaders of the profession. In a joint letter to the *Times*, Adami, Clifford Allbutt, Dawson, Arbuthnot Lane, Makins, Osler, and Rolleston point out that America and England are the only countries mutually interested in each other's history—so interested that the students of each are likely to seek graduate instruction in the other country—whereas every civilized country is interested in the science of health and is anxious to gain fresh knowledge wherever it can be found. Before the war, Germany and Austria, by their skilled and subtle propaganda, developed by enlightened government subsidy, had hypnotized the world into believing that medical graduates could complete their knowledge only in those countries. Americans, Frenchmen and even our own ambitious physicians took it as a matter of course that they must "finish" by sitting at the feet of the Teuton, who fed them with a *réchauffé* of what he had gleaned from England, France and America; for with few and rare exceptions no striking advance in medicine and surgery can be claimed by Teutonic workers. The war closed the German schools to the Allies, and very quickly it was discovered that we had better material at home if it could only be made available. Of this there has been convincing evidence in the year now ending. Soon after the armistice, the Fellowship of Medicine was founded to promote friendly relations between the members of the profession in the allied nations, and a graduate medical course was arranged in London to meet the wishes of a large number of medical officers of the dominions and the United States. The course was so successful that it is still maintained. But something more permanent is needed. The Post-Graduate Medical Association has been amalgamated with the Fellowship of Medicine. The immediate duty of the teaching hospitals is to teach undergraduates. Any satisfactory scheme for advanced training for graduates must provide not only for visitors from abroad but also for the home graduates who wish to extend their knowledge or to undertake research. It will therefore be necessary to have in London one or more graduate teaching hospitals, including laboratories. It is hoped that this proposal will receive the support of the board of education and the University Grants Committee. The object of the writers is to inform the public of what is needed and to enlist its sympathy. The project is of imperial significance, but cannot be accomplished by the medical profession and the staffs of the teaching schools without substantial help. Time will not permit of the building and equipment of a new hospital for the purpose. Before it could be finished, the students to be provided for would have wandered elsewhere in search of what they need. Before we could be ready, thousands would have found their way to Teutonic centers, which will make frantic efforts to regain what they have lost. In a single year American students alone spent more than \$200,000 in Vienna. The writers therefore urge that the government should enable one or two large general hospitals in London to equip themselves exclusively for graduate work and that these should by cooperation with other medical schools provide themselves with such a staff as to be second to none, if not indeed superior to any in the world.

Insurance Scheme for Panel Physicians

The medical committees under the national health insurance act are devising an insurance scheme for providing physicians with certain benefits. It is urgently needed, as cases of distress are often reported. If a reservation of 12 cents per insured person were made, this would give, on an insured population of 14 millions, an annual income of \$1,750,000. It is proposed to form a society and to ask the government to pay into it a certain sum, either 12 or 24 cents a year, in respect to each insured person. It would be managed by a committee of physicians and actuaries. The benefits proposed are: (1) \$500 to cover funeral and similar expenses; (2) a sum of money to be paid when a member reaches the age of, say, 65, or previously if death occurs; (3) a pension payable from a fixed age for the remainder of life; (4) sums to meet the education of children, temporary financial difficulties, the purchase of a practice, a house, etc.; (5) money to be paid to a member on leaving the organization through ceasing to be a panel physician before reaching the fixed age; (6) a lump sum or a pension payable to a member compelled to retire owing to ill health before he becomes entitled to the ordinary scale of pension.

MEXICO CITY

Dec. 21, 1919.

The Academy of Medicine

At the meeting held on the third instant by the Academy of Medicine, the guest of honor was Dr. Theodore C. Lyster, colonel (retired) of the Medical Corps of the United States Army and a member of the yellow fever commission of the Rockefeller Foundation. At the same meeting there was exhibited one of the preparations of *Leptospira icteroides*, and Dr. Cervera described in detail Noguchi's scientific work, discussing especially that part relating to the etiology of yellow fever. In his opinion this question has been solved, as the only thing remaining to be done is to have other workers confirm Noguchi's statements which comply fully with Koch's postulates relative to the discovery of pathogenic organisms, and in addition other requirements have been fulfilled which were unknown in Koch's epoch. After other persons discussed the work done in Mexico to eradicate yellow fever, Dr. Lyster spoke in Spanish to describe the work he has performed in different places in Central and South America and the results obtained in his campaign against this disease. In concluding he expressed his thanks to the Academy for the many attentions he had received, which showed that among the scientists of this country there is no ill feeling towards the United States. In the meeting of the 17th, on motion by Dr. Monjarás, Dr. Hideyo Noguchi was elected unanimously, honorary member of the Academy in recognition of the meritorious services rendered by him to science and humanity.

Yellow Fever

This disease is still present in the state of Yucatan and it seems even to be spreading as the board of public health has reported one case in the port of Campeche and placed that city in quarantine. On the other hand, it has been confirmed that the cases that occurred in the southern part of the state of Sonora were of malaria and not yellow fever.

Noguchi in Mexico

Dr. Noguchi has just landed at the port of Progreso from which he will proceed to Merida in order to carry on confirmatory studies of his discovery of *L. icteroides* and to try on a larger scale the curative properties of the specific serum prepared by him. It is expected that his efforts may contribute to eradicate yellow fever from Yucatan and amplify our bacteriologic and therapeutic knowledge of this disease.

Personal

On December 11 Dr. Gregorio Mendizábal celebrated the fiftieth anniversary of his entering the practice of medicine, receiving on this occasion many tributes. The Association "Escobedo" held a meeting in his honor and finally the physicians of the city of Orizaba, where he was born, have invited him to spend a few days there as their guest.—Dr. A. Lozano Garza, lieutenant-colonel of the medical corps, has been designated by the government to proceed to the United States to study with other persons the operation of the institutes devoted to the training of abnormal children.

Marriages

LEWIS WELLS JOHNSON, Asst. Surg., Lieut. (j. g.), U. S. Navy, Chelsea, Mass., to Miss Mildred E. Stevens, at Manchester, N. H., December 22.

BELLENDEN SEYMOUR HUTCHESON, V. C., Capt., C. A. M. C., Cairo, Ill., to Miss Frances Young of Kentville, Nova Scotia, December 1.

JOSEPH CLARK STEPHENSON, Norman, Okla., to Miss Alice Marie Gerlach of Woodward, Okla., December 27.

WILLIAM EDWARD MORGAN, Longmont, Colo., to Miss Venice Zajicek of West Point, Neb., November 6.

DAVID RALPH BOWEN, Philadelphia, to Miss Edith Mary Warrington of Georgetown, Del., December 29.

THURMAN ROSS BEAVER, Akron, Ohio, to Miss Lillian Catherine Arnold of Rockford, Ill., December 8.

WILLIAM EUGENE KENDALL, Oak Park, Ill., to Miss Jessie May Thorpe of El Paso, Ill., December 26.

ANDREW JACKSON CLAY, Hoxie, Ark., to Miss Enid Laveta of Hugo, Okla., December 25.

HOWARD KAYLOR, Bluffton, Ind., to Miss Ella Cary of Pennville, Ind., November 11.

Deaths

Horatio C. Wood, Philadelphia; University of Pennsylvania, Philadelphia, 1862; aged 78; successively professor of botany, therapeutics, clinical professor of diseases of the nervous system, and emeritus professor of therapeutics in his alma mater; editor of *New Remedies* from 1870 to 1873; of the *Philadelphia Medical Times*, from 1873 to 1880; of the *Therapeutic Gazette*, from 1884 to 1890; and of the *United States Dispensatory* from 1893 to 1907; president of the Pharmacopoeial Convention of the United States from 1890 to 1910; and of the College of Physicians of Philadelphia, in 1902-1903; author of standard works on materia medica and therapeutics, and nervous diseases and their diagnosis; who was given the honorary degree of LL.D. by Lafayette College in 1883, by Yale University in 1889 and by the University of Pennsylvania in 1904; died, January 3.

Mitshell Otis De Vaney ☉ Indianapolis; Medical College of Indiana, Indianapolis, 1901; aged 40; lieutenant, M. C., U. S. Army, with services on the Mexican boarder and at Camp Taylor, Louisville, Ky., and honorably discharged, Jan. 9, 1919; associate medical director of the Indianapolis Life Insurance Company; formerly secretary of the Marion County health board; was drowned, December 30, when the automobile which he was driving ran over a 30-foot embankment, near Fall Creek, pinning Dr. De Vaney underneath the machine.

Thomas Jefferson B. Rhoads, Boyertown, Pa.; Jefferson Medical College, 1861; aged 82; a member of the Medical Society of the State of Pennsylvania; assistant surgeon of the 169th Pennsylvania Volunteer Infantry during the Civil War; president of the National Bank of Boyertown, and later of the Farmer's National Bank of Boyertown; president of the Boyertown Mutual Fire Insurance Company; died December 24, from heart disease.

Dwight Seymour Spellman, New York City; College of Physicians and Surgeons, Baltimore, 1889; aged 53; a member of the American Medico-Psychological Association; assistant senior physician and since 1889 a member of the staff of the Manhattan State Hospital, Wards Island; while skating at Tom's River, N. J., December 18, broke through the ice, and before assistance arrived, died from shock.

Jesse Fonda Millspaugh, Los Angeles; University of Pennsylvania, Philadelphia, 1883; aged 64; president of the Minnesota State Normal School, Winona, from 1899 to 1904, and of the California State Normal School, Los Angeles from 1904 to 1913, and president emeritus since that time; a member of the California State Board of Education from 1904 to 1912; died December 13, from pneumonia.

George Elliot Chamberlain, South Newbury, Vt.; Dartmouth Medical School, Hanover, N. H., 1896; aged 50; acting assistant surgeon, United States Army, from September, 1898, to December, 1902, with service in Cuba and the Philippine Islands during and after the war with Spain; captain M. R. C., U. S. Army, and discharged, March 27, 1918; died in a hospital in Cambridge, Mass., December 14.

Frank W. Wyman, Stroud, Okla.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 71; a member of the Oklahoma State Medical Association; a surgeon in the United States Indian Service for many years, and government physician at the Sac and Fox Agency for more than twenty years; died at the home of his daughter in Detroit, December 19.

Robert Mason Fuller, Schenectady, N. Y.; Albany (N. Y.) Medical College, 1865; aged 75; a member of the Medical Society of the State of New York; said to have been the originator of the idea of administering medicine in tablet form; surgeon of U. S. Volunteers during the Civil War; died December 28.

Warren Cushman Hewitt, Xenia, Ohio; Homeopathic Hospital College, Cleveland, 1888; aged 54; a member of the Ohio State Medical Association; for sixteen years resident physician to the Ohio Soldiers' and Sailors' Home, Xenia; died December 18, from heart disease.

George A. B. Hays ☉ Happy Jack, La.; Tulane University, New Orleans, 1874; aged 72; for many years superintendent and chief physician of the East Louisiana Hospital for the Insane, Jackson, and the Louisiana Hospital for the Insane, Pineville; died December 20.

John Houstoun M. Clinch ☉ Danville, Ill.; University of Oregon, Portland, 1896; aged 56; a member of the medical staff of St. Elizabeth's Hospital; while driving in his automobile over a grade crossing in Danville, December 24, was struck by a train and instantly killed.

Daniel Murray Cheston, West River, Md.; University of Pennsylvania, Philadelphia, 1864; aged 76; who fractured both arms and his nose, from a fall, while visiting in Chestnut Hill, Philadelphia; died from his injuries in the Chestnut Hill Hospital, December 22.

Edwin Augustus Down, Hartford, Conn.; College of Physicians and Surgeons in the City of New York, 1887; aged 64; a member of the Connecticut State Medical Society; for ten years president of the state board of charities; died December 22, from heart disease.

Charles Albert Folsom, Epping, N. H.; Dartmouth Medical College, Hanover, N. H., 1902; aged 45; a member of the New Hampshire Medical Society and New Hampshire Surgical Club; until a year ago a practitioner of Manchester, N. H.; died December 16.

Robert Dodds ☉ Escondido, Calif.; formerly of Chicago; Northwestern University Medical School, Chicago, 1890; aged 63; a specialist in gynecology; died in the Sanitarium Escondido, December 18, from sclerosis of the cortex with spastic paralysis.

Joseph Alexander Doyle ☉ Greenville, Pa.; Western Reserve University, Cleveland, 1893; aged 57; lieutenant, U. S. N. R. F., and relieved from active duty, July 11, 1919; died September 5, from valvular heart disease.

Joseph Johnston Fleming, Wickenburg, Ariz.; Cleveland College of Physicians and Surgeons, 1898; aged 47; chief surgeon of the Rio Grande Mines Company; died at Pierce, Ariz., October 22, from myocarditis.

Frank Atwater Stove ☉ Bowling Green, Ohio; Ohio Medical University, Columbus, 1904; aged 46; lieutenant, M. R. C., U. S. Army, and honorably discharged, Oct. 25, 1919; died December 18, from carcinoma.

Charles R. Rosendale, Bowling Green, Ohio; Eclectic Medical Institute, Cincinnati, Ohio, 1856; aged 87; died at the home of his daughter in Bowling Green, December 15, from senile debility.

William B. Van Note ☉ Lima, Ohio; Medical College of Ohio, Cincinnati, 1895; aged 52; a specialist on diseases of the eye; died at Miami, Fla., December 20, from pneumonia.

William B. Ellis, Concord, Mo.; Homeopathic Medical School of Missouri, St. Louis, 1888; aged 73; a Confederate veteran; also a dentist; died December 20, from heart disease.

William Edward Hodges, Bynum, Texas (registration, Texas Fifth Judicial Board of Medical Examiners, 1901); aged 59; died December 10, while making a professional call.

Thomas A. Crawford, Rock Hill, S. C.; Hospital College of Medicine, Louisville, Ky., 1877; aged 66; a member of the South Carolina Medical Association; died November 11.

Herbert Orray Benner ☉ Framingham, Mass.; Dartmouth Medical School, Hanover, N. H., 1896; aged 55; died in the New England Baptist Hospital, Boston, recently.

Frederick Halves, Brooklyn; Bellevue Hospital Medical College, 1870; aged 79; died at the home of his daughter in Brooklyn, December 21, from heart disease.

O. M. Norman, Roseville, Ohio; Cincinnati College of Medicine and Surgery, 1873; aged 88; a member of the Ohio State Medical Association; died December 18.

Norman L. Lee, Junction City, Ore.; Willamette University, Salem, Ore., 1871; aged 82; a veteran of the Civil War; died October 24.

Wilhelmina F. O'Connor, Denver; Denver College of Physicians and Surgeons, 1898; aged 71; died December 8, from heart disease.

Josiah W. P. Jarvis ☉ Fairview, W. Va.; Baltimore University School of Medicine, 1895; aged 66; died December 12.

Dumont Durant Howell, Stillwater, Okla.; University of Nashville, Tenn., 1903; aged 45; also a banker; died December 6.

Carl Henry Golbeck, Chicago; University of Illinois, Chicago, 1913; aged 29; died December 21, from acute endocarditis.

Robert Suttentfield Lipes, Hudson, N. Y.; Albany, N. Y., Medical College, 1907; aged 39; died December 9, from myocarditis.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDING

King's Kidney Remedy.—George L. King, Kingfisher, Okla., shipped in December, 1916, a quantity of nostrum called "King's Kidney Remedy." The Bureau of Chemistry analyzed this preparation and reported finding uva-ursi, sarsaparilla, cascara, gentian, senna, poke root, buchu, wild cherry bark, dandelion, yellow poplar, stillingia, hydrangea, and possibly, in addition prickly ash, black cohosh, golden seal and coriander. The stuff was sold under the false and fraudulent claim that it was an effective remedy for lumbago, rheumatism, sciatica, neuralgia, diabetes, dropsy and any irregularity of stomach, liver, kidneys or urinary organs, "when in truth and in fact it was not." In September, 1918, the defendant pleaded guilty and was fined \$25 and costs.—[*Notice of Judgment No. 6516; issued Dec. 29, 1919.*]

Miscellaneous Tablets.—In September and November, 1917, the United States Drug Manufacturing Co., Philadelphia, shipped a number of different tablets which the federal authorities declared were adulterated and misbranded. Acetphenetidin and Salol Tablets, when analyzed, were found to have an average shortage of acetphenetidin of over 20 per cent. and an average shortage of salol of over 18 per cent. Tablets containing Acetylsalicylic acid, Acetanilid and Caffein Citrate were found to have an average shortage of acetylsalicylic acid of 9 per cent., an average shortage of acetanilid of 9.5 per cent. and an average excess of caffein citrate of over 40 per cent. Tablets of Morphin Sulphate were found to have an average shortage of the amount claimed of over 62 per cent. Tablets of Acetanilid and Salol were found to have an average shortage of the former drug of about 11 per cent. and of the latter of over 21 per cent. In November, 1918, the United States Drug Manufacturing Co. entered a plea of guilty and was fined \$25.—[*Notice of Judgment No. 6548; issued Dec. 29, 1919.*]

Casey's Rheumatic Cure.—In October, 1917, the John H. Casey Medicine Co. of Hillyard, Wash., shipped a quantity of "Casey's Rheumatic Cure—The Great Montana Remedy" which was misbranded. The Bureau of Chemistry analyzed this preparation and found it to consist essentially of a water-alcohol solution of potassium iodid, sugar and drug extractives carrying saponin (sarsaparilla indicated), emodin, volatile oil and resins. It was falsely and fraudulently represented as a cure for rheumatism, diseases of the blood and kidneys, Bright's disease and a remedy for stomach trouble, heart trouble, and impure blood. In addition to these fraudulent claims the amount of alcohol present was falsely given and it was falsely declared to be a "Purely Vegetable Compound, Contains No Mineral," when as a matter of fact it contained potassium iodid. In February, 1919, the John H. Casey Medicine Company pleaded guilty and was fined \$25.—[*Notice of Judgment No. 6549; issued Dec. 29, 1919.*]

Miscellaneous Capsules.—In February, May and June, 1917, Joseph McManus, who did business under the name of Philadelphia Capsule Co., Philadelphia, shipped a number of articles which were declared to be adulterated or misbranded or both. Some capsules labeled "Grip Pans" were declared by the company to contain "acetanilid derivative 125 grs. to the ounce . . . phenysal 1½ grs., salipyrine, 1 gr." The federal chemists found that these capsules contained no acetanilid derivative, phenysal or salipyrine. They did contain acetanilid (28.15 per cent.) and the label failed to bear a statement of the quantity or proportion of this drug as the

law requires; they also contained ammonium salicylate, 37.38 per cent. and sodium bicarbonate, 25.52 per cent. Capsules labeled "Aspirin 5 grains," contained only 3.585 grains each, or a shortage of 28 per cent. "Mixed Treatment Capsules" declared to contain 5 minims of syrup ferrous iodid and 2 minims of solution arsenous and mercuric iodids, actually contained not more than 3.72 minims syrup ferrous iodid and 0.52 minim solution arsenous and mercuric iodids. "Sedative Capsules," according to the label, each contained ammonium bromid, 2½ grains, sodium bromid, 2½ grains and potassium bromid 2½ grains; actually the capsules contained less of each of the bromids than the label declared; also the boxes of capsules instead of containing 200 as labeled, contained only 172. "Codeiphen Capsules" according to the label, contained 3 grains of acetphenetidin each, when, as a matter of fact, they contained no acetphenetidin. The capsules did, on the other hand, contain codein, the quantities or proportions of which were not declared as the law requires. Capsules known as "Migraine, Pref. No. 2," were misbranded in that the bottle declared the presence of 200 capsules when only 186 were found and for the further reason that the capsules contained acetanilid but the label failed to give the quantity or proportion of this drug. Capsules labeled "Salol and Acetphenetidin" were misbranded in that the quantity or proportion of acetphenetidin was not declared as required. In December, 1918, Joseph McManus entered a plea of *nolo contendere* and was fined \$150.—[*Notice of Judgment No. 6550; issued Dec. 29, 1919.*]

Correspondence

"CREDULITY AND CURES"

To the Editor:—The admirable article of Dr. Frederick Peterson (*THE JOURNAL*, Dec. 6, 1919, p. 1737) is so clearly and entertainingly written and, on the whole, so sane and strong, that a certain error in it might, if not corrected, tend to do much harm by misleading practicing physicians. I refer to the implied condemnation of the prescription of glasses for the remedy of certain reflex nervous disturbances by the relief of eye strain. In his reasoning, the gifted author strangely seems to have fallen into the fallacy termed by logicians "non sequitur."

One might, for example, argue in this fashion:

Freudian psychanalysis is ill founded and repulsive.
Freudian psychanalysis is advocated by certain neurologists.
Ergo, all neurologists are untrustworthy.

But it is quite evident that the conclusion does not follow from the premises. The correct conclusion is: Those neurologists who advocate freudian psychanalysis are mistaken, and not to be followed in that respect.

Concerning eye strain and its relief, Dr. Peterson's syllogism is practically as follows:

Certain ophthalmologists formerly practiced a wrong method (operation) for the relief of muscular imbalance of the eyes.

Another ophthalmologist pointed out a different and correct method (prism exercises) of remedying muscular imbalance, and also called attention to the importance of correct refraction in the relief of reflex disorders provoked by eye strain, and especially of disorder dependent on small degrees of astigmatism.

Ergo, the second ophthalmologist was wrong.

The reality of eye strain as a provocative condition, in certain persons, of many sorts of reflex disturbances, surely cannot be doubted at this period of medical observation. We have all seen migraine, various forms of tic, persistent headache, recurrent vertigo, and gastro-enteric, cardiovascular and nervous disturbances of many kinds relieved for long periods, and sometimes permanently, by the use of lenses prescribed after careful measurement and adjustment to the needs of the particular case. This is an everyday commonplace of medical experience, and needs no elaboration. Neurasthenia—the "fatigue neurosis" of Dercum—is a reality; but many cases are miscalled neurasthenia and the patient vainly submitted to rest cures, in which, later, a

correct diagnosis of eyestrain is followed by relief through correctly measured and properly adjusted lenses. Does this prove that there is no such thing as neurasthenia or no value in rest cures? Not at all. But it does indicate that neither the ophthalmologist nor the neurologist who makes a correct diagnosis can be blamed for his confrères who do not make correct diagnoses.

The same thing may be said concerning hysteria, with this addition: that in certain persons predisposed to hysterical manifestations, unsuspected and uncorrected visual error—commonly hyperopic astigmatism, but not confined to that—will provoke such disturbances; while its relief will tend toward quieting them.

When the history of American medicine comes to be written by an impartial and broad-minded observer, I am quite sure that the names of Weir Mitchell, William Thomson and George M. Gould will be jointly honored for their contributions to this field of diagnosis and therapeutics—Mitchell and Thomson for the discovery and demonstration of the possibilities of eye strain as a provocative of various forms of reflex disorder, and Gould for his enlargement of the field and for the courage with which, in the face of difficulties and discouragements innumerable, he has persisted in preaching the truth. That he has used violent language in his preachments may be admitted and regretted; but I am tempted in this connection to quote the comment of Henry Adams on Lowell's criticism of John Bright:

As the party rose from the table and passed into the drawing room, Adams said to Lowell that Bright was very fine. "Yes!" replied Lowell, "but too violent!"

Precisely this was the point that Adams doubted. Bright knew his Englishmen better than Lowell did—better than England did. He knew what amount of violence in language was necessary to drive an idea into a Lancashire or Yorkshire head. He knew that no violence was enough to affect a Somersetshire or Wiltshire peasant. Bright kept his own head clear and cool. He was not excited; he never betrayed excitement.

Perhaps the future historian may conclude that Gould knew better than the rest of us "just what amount of violence in language was necessary to drive an idea into the [medical] head."

S. SOLIS COHEN, M.D., Philadelphia.

MEDICAL VETERANS OF THE WORLD WAR

To the Editor:—The beginning of this war found the medical profession of the country wholly unprepared for the tremendous military responsibilities which were to be thrown on it. No organization had been perfected by which the profession could be called into service, and no instructions had been given to the profession to acquaint them with the duties of a medical officer in the field with troops.

The Medical Department of the Army had been accumulating for many years field medical supplies, and through the great foresight of Col. Jefferson R. Kean, Medical Corps, the American Red Cross, with which he was serving, had organized a large number of base hospital units from among the staffs of our large and important civil hospitals.

The Medical Reserve Corps had not been developed, and the officers who were in this corps and who were fit for military service had not been instructed in their duties as medical officers. This laid a tremendous task on the Medical Department to meet the emergency when war was declared in April, 1917.

The response the profession made to the emergency was superb. We are all proud of the manner in which the country as a whole met its obligations. And we are all proud of the manner in which special organizations met their obligations. But I am sure it is a fair statement that no part of our country met its call in the superlative manner the medical profession met theirs.

At the beginning of the war there were about 450 officers of the Medical Corps and something like 2,000 officers of the Reserve Corps. Many of the latter were not physically fit for military service, and some were essential to the welfare of their communities. But through the tremendous efforts of all concerned, medical officers were obtained in sufficient numbers to meet the demands as they arose.

The medical men who came into the corps brought with them the finest spirit that ever existed in any organization. It was the spirit of service, which enabled them to meet their new duties in a most admirable way. When the armistice was signed, there were more than 30,000 physicians in active service. This does not include the hundreds of physicians who were assisting the Provost Marshal in executing the draft and in doing other essential work necessary to carry on the great war. These officers have been demobilized just as rapidly as the interests of the service would permit, so that today there are only 1,200 temporary officers remaining.

Americans, as a people, have the very highest ideals regarding the quality of medical and surgical treatment that is due our soldiers, and it is only fair to state that the greatly enlarged Medical Corps was able to meet their ideals in every respect. There were some complaints at the beginning when troops were rushed into camp before adequate provisions could be made to care for the sick; but careful investigations, which were made, revealed the fact that the medical man had met his emergency as well as it was humanly possible to do with the facilities at hand. In France the American soldier was cared for as no other soldier was ever cared for. I think this can be said with perfect fairness, but with the understanding that we started with the advantage of the information our allies had accumulated during their three years of war. The wounded man was treated by the most expert surgeons of this country, and the man who fell ill from disease was cared for by the best internists of the land. The sick and wounded who were brought back to the United States have been treated in the best equipped hospitals this country has ever seen. The number now remaining under treatment in our hospitals is so small that it is almost a negligible quantity.

The effort this country made in meeting the responsibilities of war was the greatest thing that has occurred in our history, and the part the medical profession played has only added another bright page to the traditions of which we are so proud. I am sure every medical officer should be proud of having had an opportunity to play even a very small part in the tremendous effort which has been carried on since April, 1917.

And now that the profession has returned to its duties in civil life, I think it would be a tremendous mistake if we should not band ourselves together in some organization which would perpetuate the traditions of this great war, which would keep us in closer touch in the future, and which would keep alive an organization which would meet any obligations which the profession might be called on in the future to discharge to our government. I know of no better way of carrying on these principles than for all of us to become active members of the Medical Veterans of the World War, an organization composed exclusively of those who served in the Medical Department of the federal government.

M. W. IRELAND, M.D., Washington, D. C.
Surgeon-General, U. S. Army.

Ocular Complications of Vaccination Against Typhoid.—

A case of febrile herpes of the cornea developing a few hours after antityphoid vaccination is reported by Dr. F. M. Fernández in his *Revista cubana de oftalmología*, page 592. The issue of the *Revista* containing it is the fourth number of this new quarterly, and has 229 pages and twenty-eight original articles. Dr. R. Pacheco Luna of Guatemala also reports, page 600, a somewhat similar case in which a man of 52 had a relapse of herpes of the cornea after vaccination against typhoid. The first attack had been three years before. Pacheco Luna reviews the literature on the subject, and states that his case proves that herpes of the cornea is not due directly to the typhoid vaccine: in some of the cases on record it was evidently merely a coincidence. He adds that it is better to refrain from the vaccination when there is a history of preceding disease of the uveal tract, especially in the syphilitic, tuberculous, rheumatic, etc. There does not seem to be any ocular lesion which depends solely and exclusively on the typhoid vaccine.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE METRIC SYSTEM

To the Editor:—1. What action has the American Medical Association taken regarding the adoption of the metric system both in this country and as a world wide standard of weights and measures? If possible, give me date and place of action taken.

2. What is the procedure for bringing this important subject before our association?

WILLIAM H. QUAY, M.D., Townsville, Pa.

ANSWER.—1. THE JOURNAL, May 18, 1895, p. 766, in the official reports of the proceedings of the forty-sixth annual session, held in Baltimore in 1895, reports:

The General Business Committee endorses the following recommendations from the Section on Materia Medica and Pharmacy:

Resolved, That in view of the adoption of the Metric System in the U. S. Pharmacopeia, this section recommends the more thorough instruction of the students at the medical schools in the use of metric weights and measures, and further recommends that physicians, when writing metric prescriptions, always make use of the signs Grm. and Cc. to distinguish between quantities by weight and volume.

2. New business may be presented in the House of Delegates by any delegate in attendance at a meeting. The ideal procedure for submitting a proposition is to present it first to a component county society that a memorial on the question may be addressed to the constituent state or territorial association. Then, if approved, its delegation will submit the subject to the House of Delegates of the American Medical Association.

BRAZILIAN WORK ON SNAKE VENOMS

To the Editor:—In THE JOURNAL, Aug. 23, 1919, p. 629, in the answer to a query from W. T. P., an injustice is done to Brazilian scientists. The question referred to snake venoms, and the inquirer requested bibliographic information on this subject. The answer mentioned twelve authors, and no mention is made of Brazilian works on this subject. I wish to state that the "ophidism" (as we call it here) is a matter absolutely solved by Brazilian scientists, among whom stands out the name of Dr. Vital Brazil Mineiro da Campanha, the discoverer of the antivenom serums. At present in Brazil, the only ones who die from snake bites are those who wish to do so.

D. DE MORAES LIMA, M.D., Ribeirao Preto, Brazil.

COMMENT.—Our list was a suggestive one and by no means complete. Among South American references might have been included the following from Brazil:

Brazil, Vital: Sobre un novo tratamento organoterapico do ophidismo do Dr. Ernst von Bassewitz; *Rev. med. de S. Paulo* 7:25, 1904; Ophidismo no Brazil, *Brazil-med.* 20:7, 1906; Serum anti-ophidico, *ibid.* 17:384, 1903; Da serumtherapia no envenenamento ophidico, *ibid.* 18:21, 31, 1904.

Barroso, S.: Mordeduras de cobra e seu tratamento, Rio de Janeiro, 1889.

Villela, E.: Antiscorpion serotherapy, *Brazil-med.*, May 25, 1918.

Pinto: Campaign Against Snake Poisoning in Brazil, *Brazil-med.*, July 8, 1916.

Effective Treatment of Tuberculosis.—The physician is a life saver who promptly prescribes what may be required to prevent the incipient case of tuberculosis from becoming a plain case.—*Bull. Maine State Dept. of Health*, October, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW YORK: New York City, Albany, Buffalo, Syracuse, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

EFFICIENT HOSPITALS

ASA S. BACON

Superintendent, Presbyterian Hospital

CHICAGO

Hospitals are often compared to hotels; but while they are, in a sense, hotels for the sick, there is a distinct difference between the two from the patient's standpoint. A man goes

to a hotel prepared to pay for his accommodation: he is usually on a business or vacation trip. Sickness comes to a man unexpectedly and catches him unprepared: he is sent to a hospital unprepared: he is not on a business or vacation trip. His salary is often discontinued. If a well man does not like his hotel accommodations, he can go elsewhere; but a sick man entering a hospital has to take what he can get. The man in moderate circumstances, unable to pay for an expensive room, must take a ward bed, which his sensitive condition causes him to rebel against, and the physician wastes a great deal of valuable

time in getting his patient properly located. A patient came to my office the other day to say good-by. He told me about the kind attention he had received from physicians and nurses, but he added, "When I return, put me in a closet rather than in the ward."

Wards are intended for the poor people, for charity patients or for those who can pay but a small amount. Labor conditions have so changed that the average working man does not want charity. The labor leaders frown on it and ask for a sufficient wage to enable the laborer to pay for his care, and they are going to get it. It is now evident that national prohibition is also going to be an important factor in reducing charity work.

When a man is sick, his earning capacity is cut off. He is a nonproducer. It is the duty of the hospital to get him well in the quickest time possible, so that he can get back to work and begin producing.

To provide efficient hospitals to serve the people in moderate circumstances, at charges within their means, giving

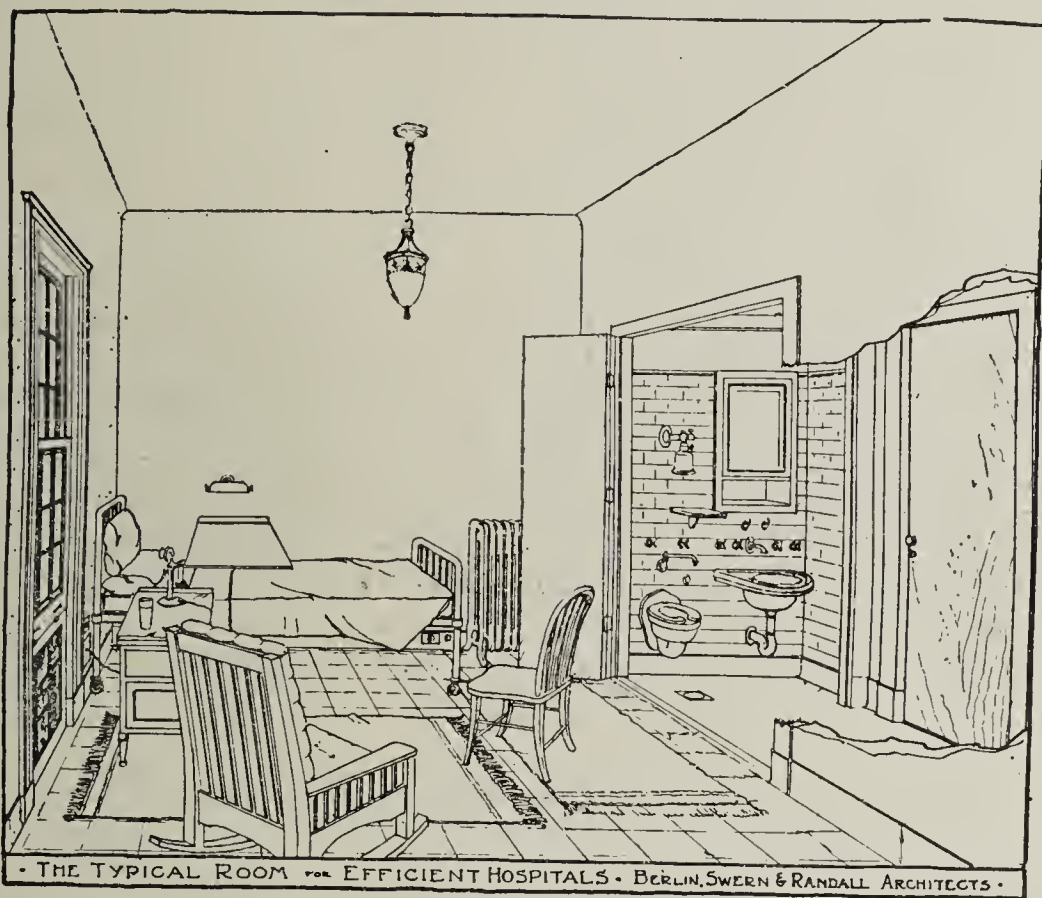


Fig. 1.—Typical room in perspective.

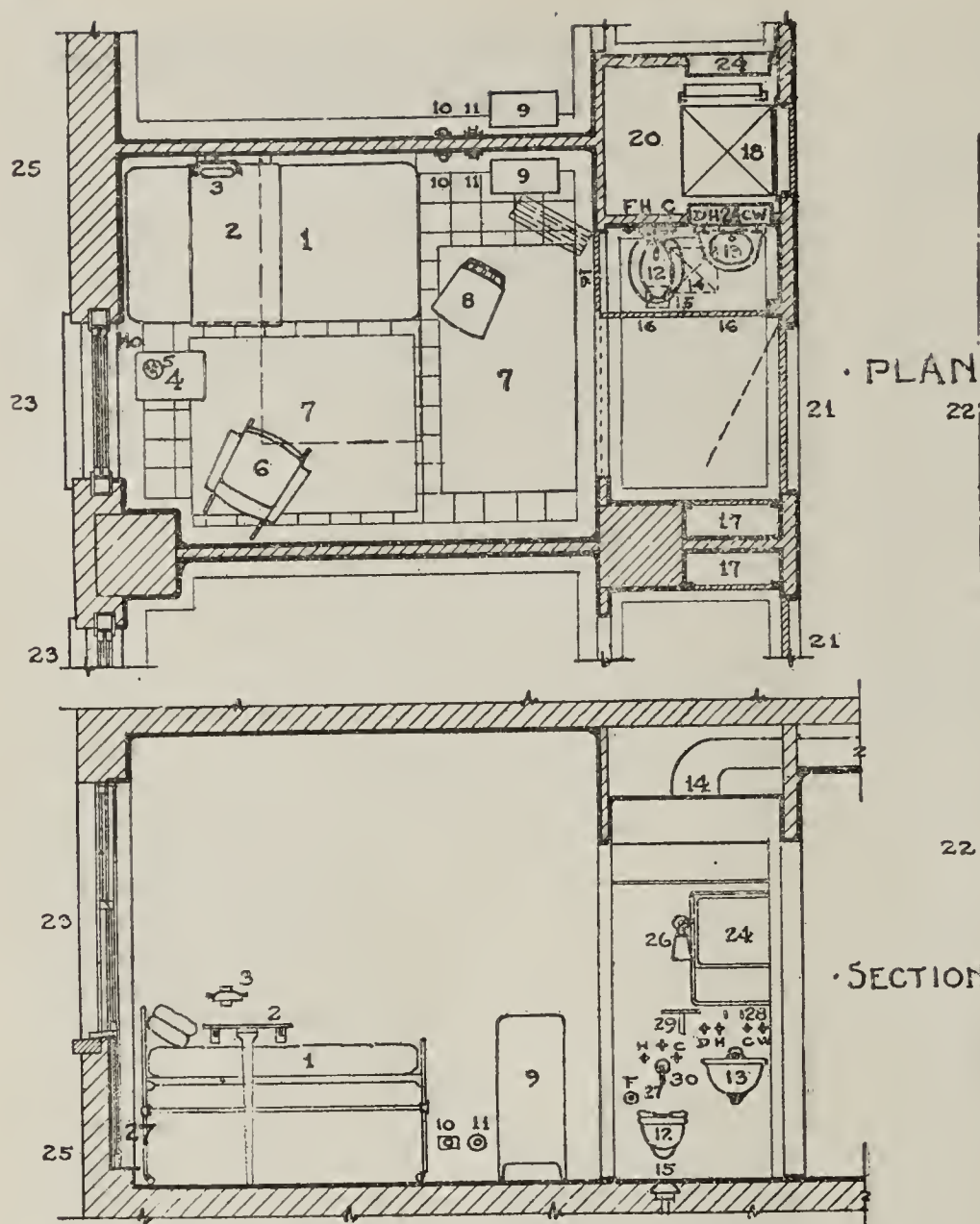


Fig. 2.—Plan and section of typical room: 1, standard bed and back rest; 2, adjustable table (removable); 3, reading lamp (removable); 4, nursing table; 5, telephone; 6, rocking chair; 7, small rugs; 8, straight-back chair; 9, radiator; 10, base plugs; 11, vacuum outlets; 12, water closet; 13, lavatory; 14, exhaust vent register; 15, floor drain; 16, three-leaf door; 17, lockers; 18, dumbwaiters; 19, door to dumbwaiter; 20, pipe space; 21, entrance to rooms; 22, center line of corridor; 23, windows; 24, steel cabinet for equipment; 25, exterior wall; 26, electric light and attachment; 27, sliding screen; 28, stope ringer hooks; 29, shelf for equipment work; 30, swivel spout for bedpan and washing and shower attachment; B, hot water; C, cold water; D, drinking water; W, waste; F, flushing valve. These and the accompanying plans were made by Berlin, Swern and Randall, architects and engineers, 19 South La Salle Street, Chicago.

solarium if desired. Better examinations can be made and better histories taken than in a ward. They may be made at odd hours, which if done in a ward might disturb others. Hospital visiting rules can also be regulated to fit the individual patient and need not be allowed to fret the patient for the sake of observing a rule. It also allows the occupancy of *all the beds all of the time*.

In working out this plan, certain fundamental principles of construction and organization have been found to be imperative. These are the abandonment of wards and the substitution of small private rooms; the elimination of special duty rooms and general lavatories, and the substitution of a toilet and lavatory in each patient's room; the abandonment of floor diet kitchens and serving rooms, and the substitution of one large central kitchen and serving station; the abandonment of floor linen rooms, and the substitution of one central linen supply room; the abandonment of long corridors necessitating the carrying for long distances of food, linen, drugs and supplies, and the substitution of dumb waiters direct from the central supply rooms to each floor section; and the installation of pneumatic tubes to carry written requisitions from each floor to the central supply station, and also to carry any supplies that can enter the tube.

Probably the most trying question to every superintendent is the conservation of supplies. There are more provisions used than the capacity warrants, and there is an enormous shrinkage in the linens and household goods. Where do they go? Even the best supervision cannot control this, and numerous rules and regulations are hard to enforce. A trip through any large, progressive factory will show clearly that the materials and tools are not spread out at random, and that when the day's work is done every article is in its place. This is an application of efficient methods. Why not apply them to the hospital? In the new plan, the amount of provisions and equipment required will be reduced by the elimination of cooking and the necessary paraphernalia throughout the build-

them all the conveniences of the most exclusive institutions, and rendering the much needed educational work to the community, is the ideal to be attained; but to accomplish this ideal requires new methods and much thought.

Present hospitals are rated at a certain bed capacity, but it seldom happens that the maximum capacity is reached when there are wards. This is due to the constant variation in the percentages of the various cases handled, namely, the proportion of calls for men's or women's beds does not remain the same, and certain diseases seem to come in epidemics. This makes imperative some scheme for flexibility in the use of beds. The private room for each patient, with its complete utility equipment, not only provides comfort, but absolutely solves this problem. The question of contagion is eliminated, each room is complete in itself, needing no service which is common to any other; nor does a patient, developing some contagious disease at a late date, have to be moved at possibly the most critical period of his illness because of danger to others. Again, the room temperature can be kept at the degree best suited to each patient, or the room can be turned into a

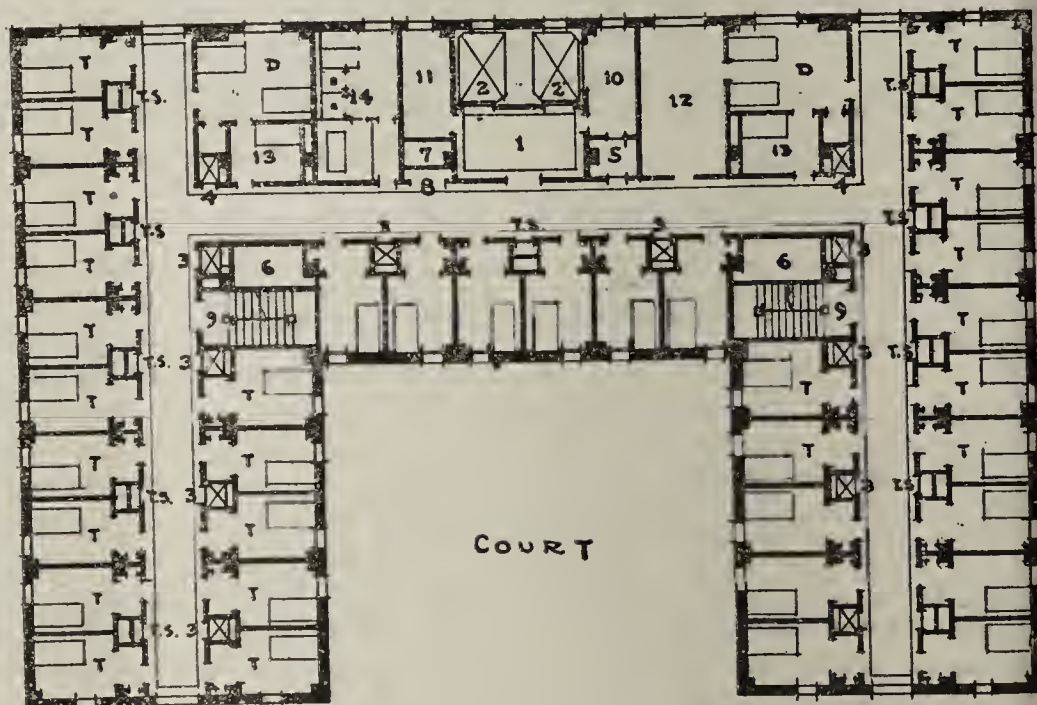
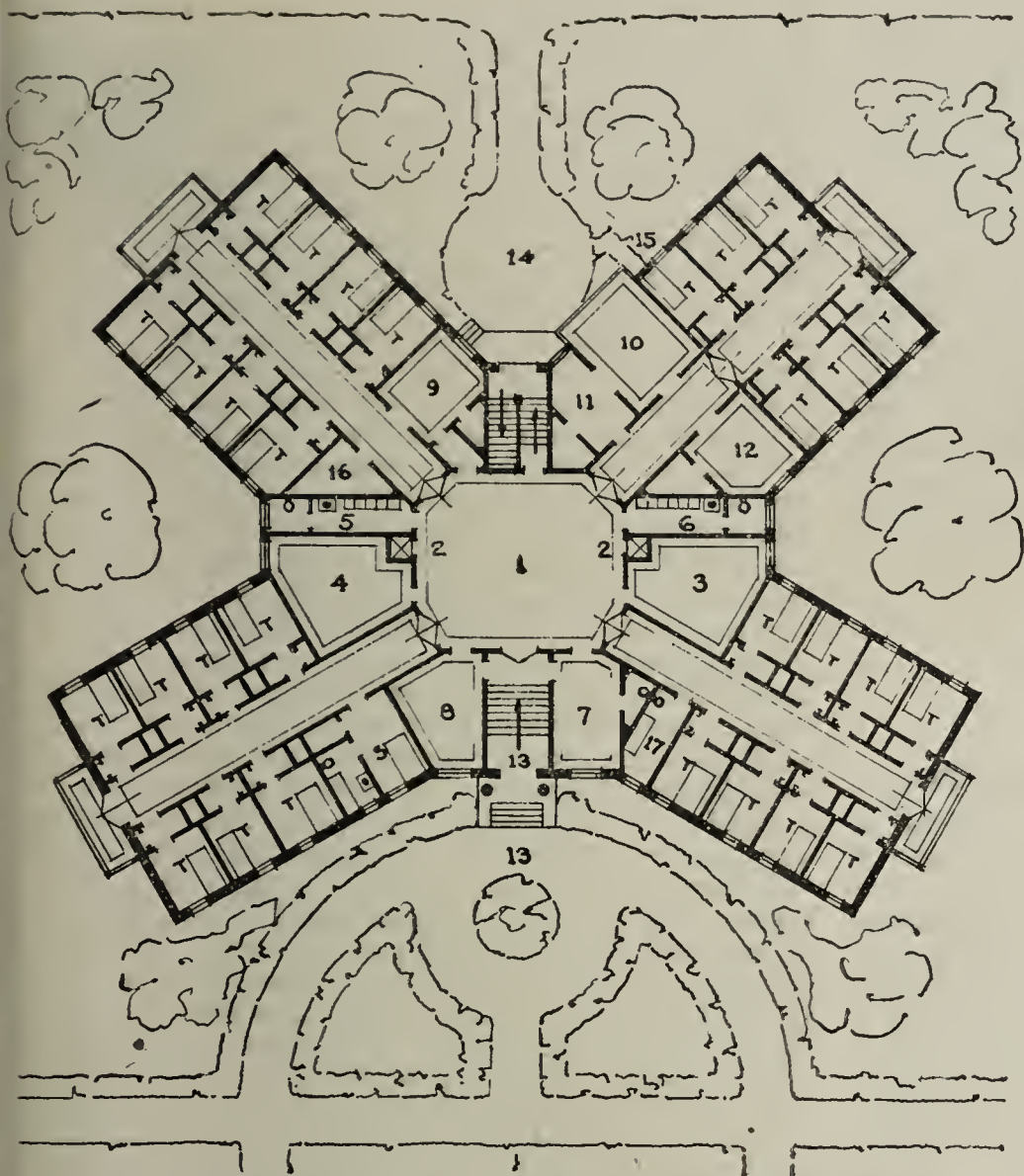


Fig. 3.—Typical floor plan of 160 bed hospital: 1, elevator lobby; 2, elevators; 3, service dumbwaiters; 4, specimen dumbwaiters; 5, linen and waste paper chute; 6 vent ducts; 7, pipe shaft; 8, medicine cabinet; 9, stairways; 10, service and janitor room; 11, toilet room; 12, dressing room; 13, bath and toilet rooms; 14, shower and tub room; T, typical room; D, double room; T, S, pneumatic tube station. According to this plan a five story building would have a capacity of 120 beds, a six story building 160, and a seven story building 200 beds.



care and puts it under the proper supervision, giving it the advantage of trained nursing. Epidemics and the spreading of disease in homes can at once be controlled. Physicians will be able to give more of their time to their profession and less to traveling around from house to house. They can compare notes and gain from each other's experiences, to the advantage of the community as a whole.

Thousands of small hospitals are going to be erected. Efficiency and economy in the *medical* as well as the *material* service of the hospital should be our standard.

ILLUSTRATIVE PLANS

Figure 1 is an interior diagram perspective of the small typical room and shows the equipment in its place.

Figure 2 illustrates the small typical room in direct plan and section elevation. The intention of this drawing is to show the compactness of the facilities and the arrangement for furniture. This is the minimum size for the room advisable. This can be expanded and made more commodious as the building funds will allow, without interfering with the practicability of the idea.

Figure 3 is a suggested floor plan for a building of from 120 to 200 beds. The ground floor of such a building would be devoted to service, first floor to administration, physicians' offices, receiving departments and dispensary, and the top floor, operating, roentgen-ray and laboratory department. The use of the U-shaped plan allows the strategic placing of dumbwaiters around the central kitchen on the service floor. These dumbwaiters and elevators are the arteries of communication between all of the departments in the building.

Figure 4 is a suggested layout for a small community hospital of about thirty bed capacity.

ing and the centralization of it in one general kitchen. The centralization of serving eliminates poor judgment on the part of floor nurses in setting up trays, and the use of unnecessary dishes, and provides a means of checking up more systematically those that are used. The cooking also is more economically done in bulk and is under the supervision of an expert dietitian. The elimination of linen and supply rooms all over the building, and the collecting together of all household supplies in one general storeroom, allow absolute supervision, as in a toolroom in a factory. In this way, carelessness and extravagance can be located. *Centralized control is the system which we should establish in efficient hospitals.*

If more people went to the hospital when they were sick, it would be possible to collect more data in regard to the various diseases. Hospital treatment in the past has been considered a luxury, and has been resorted to only when every other means of care failed. This should be reversed, and would be, if the charges for hospital services were within reach of the general public. The efficient city or community hospital, floor plans for which are submitted herewith, makes this possible. It will collect the cases of sickness in a community, tabulate them, and file their histories for future reference. It takes sickness out of the home and from the hands of inexperienced

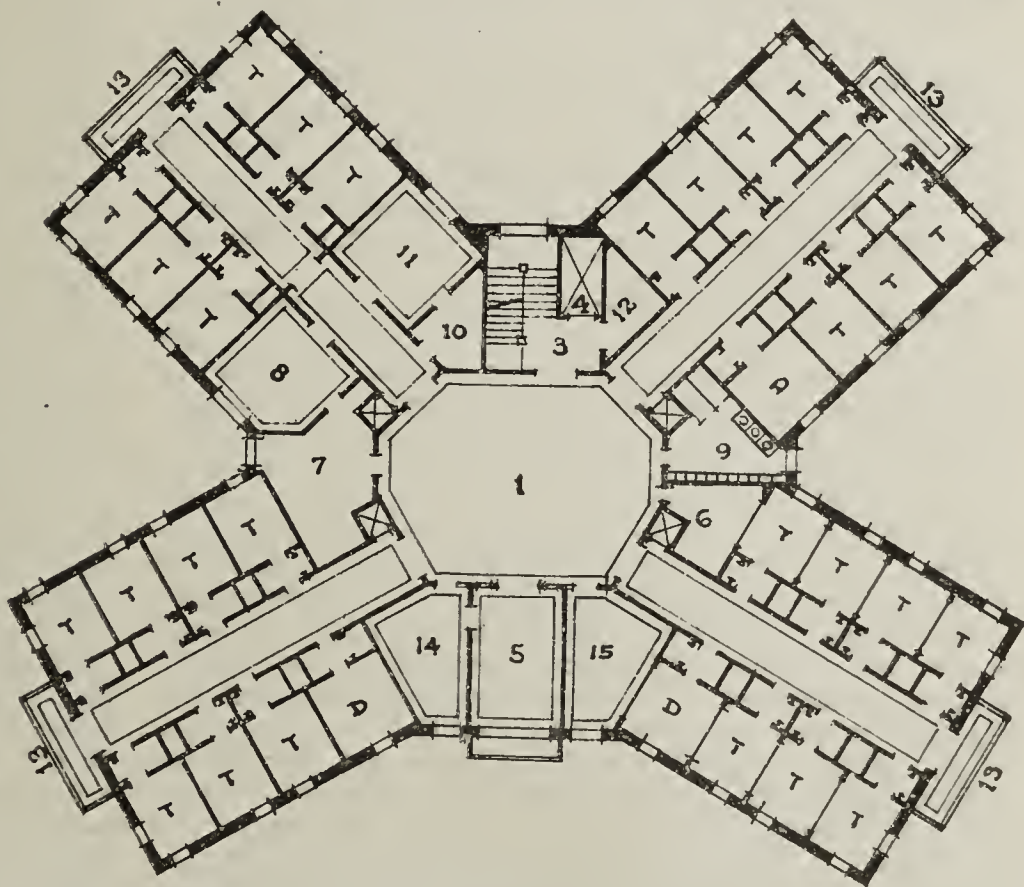


Fig. 5.—Second floor plan of eighty-five bed hospital: 1, general rotunda; 2, service dumbwaiters; 3, elevator and stair halls; 4, elevator; 5, sick babies' room; 6, milk laboratory; 7, work room; 8, nursery; 9, toilet room; 10, work room; 11, delivery room; 12, wheel chairs and carts; 13, solariums; T, typical room and utilities; D, double room and utilities; 14, bath room for babies; 15, dressing room for children.

using the individual room idea. All of the departments with which the patients come in contact are located on this floor, together with the general nursing. All of the service departments are collected together in the ground floor, where proper supervision can be given, with dumbwaiters as the arteries of communication between the two floors.

Figure 5 is a suggested layout similar to the one in Figure 4, for a community hospital of approximately eighty-five beds. Here again the departments with which the patients come in contact are collected together on the upper floors, and the ground floor is devoted entirely to service, with the dumbwaiters and elevators as arteries of communication. The operating suite, roentgen-ray department and laboratories of this particular scheme are located on the top floor, and administration on the first floor, together with a dispensary and physicians' offices if required.

Miscellany

PHYSICIANS' LIABILITY FOR INCOME TAX

The first of the year brings up again the annual question, "How much income tax must I pay for 1919?" In case of salaried officials, business men whose operating expenses are distinctly separate from their personal and family expenses, and those happy persons who derive a fixed and definite income from investments, this question is easily answered. The difficulty which has arisen in applying the income tax law to physicians is one that is inherent in the practice of medicine and for which the old habit of physicians of lumping their personal and professional expenses is responsible. It is, or was before the passage of the federal income tax law, difficult to determine what constitutes the actual income of physicians. More than any other class of professional men, they have, as a rule, confused gross and net income and have regarded the gross intake for the year as their professional income without regard to the cost of carrying on their business. Owing to the close relation between professional, personal and family habits, no clear dividing line has heretofore been drawn between personal and family expenses and the expenses of carrying on the practice. As a result, few physicians have kept sufficiently accurate records to enable them to separate these two classes of expenditures. In the first year or two of operation of the federal income tax law, many physicians paid a tax on a larger income than they were really liable for, owing to the fact that they did not understand what were legitimate exemptions under the law. Since the passage of the law, a number of rulings have been issued defining the meaning of the law, especially as it refers to physicians.

There are two general principles underlying the application of the federal income tax law: The first is that a man's income is the difference between his gross intake for the year and the total cost of carrying on his business. The second is that all money paid out for expenses directly connected with one's business and for articles the use of which is limited to the current year is deductible, but that money paid out for articles which will be used over a considerable period of time is not expense but investment, and as such is not deductible. For instance, the original cost of an automobile is an investment and not an expense; but the annual depreciation or loss of value of an automobile used by a physician for professional purposes is a legitimate and deductible expense. As the average automobile is estimated to have a life period of five years, a deduction of 20 per cent. each year on the original cost of the automobile is allowed. In the same way, office furniture and equipment is not an expense but an investment. Such equipment, however, deteriorates with use and age. A physician is, therefore, allowed to deduct the original cost of the equipment divided by the number of years for which it can be used.

Applying these principles to a physician's income, it is evident that his gross annual income is the total amount of

his actual collections for professional services plus any additional income from any other sources. From this he is allowed to deduct all actual expenses necessary for carrying on his business. This would include office rent and maintenance, such as heat, light, cleaning, attendance, etc., office telephone, salary of a stenographer or office assistant and the cost of any drugs, dressings or other materials that are used in the treatment or care of patients. But while drugs and dressings are deductible, surgical instruments and appliances are not, since they are for permanent use and are an investment. Depreciation of such instruments or equipment through breakage, wear and tear or use can be deducted by dividing the original cost of the instrument by the number of years of usefulness. Books are an investment, but medical libraries are subject to deterioration. Medical books do not wear out, but they do become old and obsolete. Some books such as textbooks on anatomy, are good for a lifetime; while books on the practice of medicine and especially on some of the more recent special subjects soon become out of date. The average life of a physician's library can fairly be estimated at twenty years, so that one twentieth of the cost of books during the year can be deducted. Medical journals being of temporary value, are an expense and not an investment, and consequently subscriptions to medical journals can be deducted. Membership in medical societies of a strictly professional nature is also an expense, and the dues can be deducted; but membership in organizations, whether medical or otherwise, of a social nature, such as physicians' clubs, is a personal expense and is not deductible. Regarding an automobile, as stated above, the original cost is an investment but one fifth of the cost may be deducted for depreciation. If the automobile is used solely for professional purposes, then the upkeep and expense of operation, including gasoline, oil, tire repairs, chauffeur's wages, garage expenses, etc., are deductible. If the automobile is used partly for professional and partly for personal use, then both the depreciation and the expenses should be prorated. Regarding home expenses, if a physician maintains an office in a rented house, then a portion of his house rent can be deducted; but if a physician owns his own home, he is not allowed to make any deduction for rent for his office, whether he uses his home as a place of business or not. He would, of course, be allowed to charge off a proportional amount of the expense of heat, light, telephone, etc. Railway fare and cost of berth in attending medical society meetings of a strictly professional character may be deducted, but not hotel bills, meals or incidental expenses, the assumption being that these expenses would be incurred whether the physician attended the meeting or remained at home. If the physician uses horses instead of an automobile, the cost of maintenance may be deducted provided the horses are used entirely for professional purposes; otherwise, the proportionate amount. Depreciation to the proper amount can also be charged off on horse buggies or sleighs used for professional purposes. Physicians maintaining a laboratory can, of course, deduct the salary or wages of a laboratory assistant, the cost of chemicals, drugs and other materials used, and the depreciation on the laboratory equipment. Physicians maintaining roentgen-ray apparatus or laboratories can deduct salaries paid to operators and depreciation on the cost of equipment. Roentgen tubes and plates which are constantly breaking and have to be replaced would come under the same head as drugs, bandages, etc., and may be deducted. In the case of oculists furnishing glasses to patients, there should be two distinct charges recorded, one for professional services as an oculist and the other for glasses supplied to the patient as merchandise. Contributions to philanthropic, benevolent, religious and humane organizations may be deducted up to 15 per cent. of the total income, but not dues to clubs or social organizations.

The federal income tax law has been productive of many benefits to physicians. The first is that it has compelled physicians to keep more accurate and minute financial records. The second is that it has made it possible for physicians to determine their real income from professional work. Prior to the passage of this law, many physicians were accustomed to regard their total annual cash receipts as their income.

whereas their actual income was often only a third or a fourth of what they supposed it to be. While it has been a shock to many a man to find that instead of making ten thousand dollars a year, he was really clearing only from five to seven thousand, the result in the end will be highly salutary both to the individual and to the profession.

FEDERAL AID IN THE PROTECTION OF INFANCY AND MATERNITY

Every year about 16,000 mothers die in childbirth and nearly a quarter of a million babies die under one year of age. Most of these deaths are preventable. Among sixteen important countries, thirteen show a more favorable maternal death rate than the United States and six a more favorable infant mortality rate. Maternal mortality and infant mortality from maternal causes are not decreasing in the United States. About one half of all infant deaths occur within six weeks of birth and these early deaths are due chiefly to the condition of the mother and the lack of proper care and instruction for the mother during pregnancy and confinement. Maternal deaths and infant deaths from maternal causes are not decreasing because mothers do not yet have the skilled care and advice that they need. The Children's Bureau has secured detailed information about the mothers of 2,978 babies born within a short preceding period in eight rural areas representing six states. In these confinements, only five women received prenatal care approaching the minimum standard of "adequate" care outlined by the conference on child welfare standards at Washington in May, 1919, and in 9 per cent. of the cases, the mothers reported having had no prenatal care whatever.

BOTULISM FROM EATING CANNED OLIVES

Armstrong, Story and Scott (*Pub. Health Rep.* 34:2877 Dec. 19] 1919) report on the epidemic of botulism in Canton, Ohio—mentioned in *THE JOURNAL*, Nov. 15, 1919, p. 1538—following a club banquet, Aug. 23, 1919, at which about 200 people were present. The cases were confined to the chef, waiters and diners of one table at which ripe olives, nuts and candy had been substituted for regular items of the menu. By a process of exclusion, graphically portrayed in tabulation, the attacks were attributed to the ripe olives. Seventeen persons ate or tasted of the olives; fourteen came definitely ill, seven cases ending fatally; three showed no definite symptoms. None were ill who did not partake of the olives. Those who ate the most olives died first, while among those who recovered, the severity of illness bore a close relation to the numbers eaten; three who developed no symptoms ate the least of all. Two diners, who took a relatively large amount and recovered, had partaken freely of alcohol during the evening. The olives were packed in a sealed glass jar, but the vacuum had been accidentally destroyed. They were placed in three table dishes; the contents of two dishes were washed under the tap and drained, the third dish was unwashed. This factor, in the opinion of the authors, may explain the death of one person who ate half an olive, while another recovered after eating two olives. The symptoms were very similar in all cases, varying mainly in severity: headache, diplopia, dimness of vision, and slight vertigo were the most common phenomena. The authors believe that certain diagnostic pitfalls are present in all cases. Botulism may be mistaken for poisoning by mushrooms, wood and ethyl alcohols, cerebral hemorrhage or syphilis, and hysteria; only the occurrence of attacks in others will make the matter clear.

A thorough chemical and biologic investigation of the can was made. Chemical examination for definite poisons yielded negative results. Subcutaneous injection of 0.5 c.c. of an emulsion of the suspected fruit in sterile saline solution produced symptoms; 1 c.c. proved lethal to guinea-pigs weighing from 250 to 300 gm.; while from 0.001 c.c. to 1 c.c. of the brine caused death in from eighteen hours to four days. Ingestion of small quantities of brine and of the olives proved fatal. The brine, after passing through a Berke-

field filter, although culturally sterile, proved highly poisonous on subcutaneous injection; heating at 80 C. for thirty minutes rendered the filtrate harmless.

Anaerobic culture at 37 C. in beef infusion glucose agar yielded a growth of a gas producing, agar fragmenting bacillus, gram positive, motile, coarse, sporogenic, and staining well but irregularly with ordinary dyes. Cultural characteristics and toxin formation led to its identification as a strain of *Bacillus botulinus*. The organism grew well in the brine of unspoiled olives of the same brand, and its spores resisted 100 C. for thirty minutes. Potent toxins developed, a sterile filtrate from a nine-day culture proving lethal in doses of 0.00005 c.c. intraperitoneally. Subcutaneous or intraperitoneal injection of various doses of toxin diluted to 1 c.c. with sterile saline, mixed with 0.5 c.c. of 95 per cent. alcohol, protected guinea-pigs against twenty times the lethal dose. Tests for agglutinins and antitoxins were negative.

Medicolegal

Value After Death of Good Will of Business of Roentgenologist—of Physician

(*In re Caldwell's Estate (N. Y.), 176 N. Y. Supp. 425*)

The Surrogate's Court of New York County holds that, where a physician, who had specialized in roentgenology or the taking of roentgenograms as an aid to physicians, bequeathed the good will of his business, together with the apparatus used in connection therewith, to his two assistants, one of whom was a physician who leased the office that had been occupied by the testator, but removed the latter's name from the door and substituted his own, the transfer tax appraiser erred in valuing the good will at \$38,874.12, and that his report should be remitted to him for the purpose of excluding the good will as an element of value. The court says that the question of whether the good will of the practice and business of a man who has attained eminence in his profession has, on his death, a value that is capable of ascertainment or computation, does not seem to have been decided in the reported cases. The extensive and lucrative business transacted by the decedent was the result of his reputation for great skill in taking roentgenograms, and as this skill and knowledge died with him it could not constitute an element of good will that would survive him. The death of a man who had attained such prominence and reputation as a roentgenologist must have received such publicity as would bring it to the attention of practically all the members of the medical profession who knew him by reputation or who would ordinarily have sent patients to him. Therefore, after his death those physicians would not send any more patients to the office theretofore conducted by him; and if the office passed into the possession of another physician or roentgenologist, it could scarcely be said that its former occupancy by the decedent made it more valuable to his successor. The skill and knowledge which the physician who had been an assistant to the decedent acquired during his association with the decedent, and which induced physicians to send their patients to him, were entirely personal to him, and were not transferred to him by the decedent as part of the good will of the business. The reputation which the decedent had acquired was personal to him, and it was not due to the place where he maintained his office or to any trade mark or trade name.

It has been held that a physician may sell the good will of his business and that the courts will recognize the right of the purchaser to such good will. But there seems to be a distinction between the business sold by a physician during his lifetime and the value of that business after death. If sold by the physician during his lifetime, he could introduce the purchaser to his patients and friends as a prudent and reliable physician, and such introduction would immediately give the purchaser a reputation and standing which otherwise might require years to establish. It seems to the court that such introduction and recommendation to patients con-

stitute the real consideration for the money paid to a retiring professional man by one who wishes to succeed him. But after a man who has acquired a reputation for great skill or knowledge is dead, persons who would go to his office for the purpose of consulting him and availing themselves of his superior skill would not go there merely because the office was still open and occupied by another person, who had no reputation for superior knowledge or skill.

It seems to the court that the criterion by which it may be determined whether the business of the decedent had a good will capable of being transferred by his will is: If an inconspicuous and unknown physician should take the office which had been occupied by the decedent at the time of his death, and put his own name on the door, would the clients of the decedent, or a considerable number of them, continue to send their patients to that office? In the court's opinion, it is extremely improbable that such a person would receive any patients from the physicians who patronized the decedent because of his exceptional skill and knowledge.

Liability of Operating Surgeons to Pay Assistants

(*Semple v. Ringo* (N. D.), 172 N. W. R. 817)

The Supreme Court of North Dakota, in reversing a judgment rendered on a verdict directed in favor of the defendant, and ordering a new trial, holds that in surgery the proper administration of an anesthetic is an essential part of the operation, for which a surgeon is commonly paid a good round fee, which includes the minor fee of an assistant. When he employs an assistant, the presumption is that he agrees to pay him, unless the contrary appears from express words or conditions.

In the opinion in the case, prepared by Justice Robinson, it is said that the complaint averred that on several occasions, at the special request of the defendant, the plaintiff administered anesthetics to patients of the defendant on whom the latter performed surgical operations; that the plaintiff's services were reasonably worth \$25, which the defendant promised to pay. The defendant admitted that at his request the plaintiff performed such services, and that these were reasonably worth \$25, but set up the defense that in requesting the services he acted merely as the agent of his patients, and did not assume any personal obligation, and that in such cases it is customary for a physician to administer anesthetics and to look for his pay to the patients, and not to the surgeon calling him. In this case the defendant had a hospital, and did quite an extensive operating business. On the several occasions, without disclosing the names of his patients or anything concerning them, he requested and accepted the services of the plaintiff in what are known as minor and major surgical operations. In such a case the principal surgeon commonly gets a good liberal fee for doing everything necessary for a successful operation. In modern surgery the proper administration of an anesthetic is a very essential part of the operation. It may also be necessary to obtain from a druggist antiseptic gauze or cotton and other small things. All such services and necessities are properly chargeable to the surgeon when he orders them without giving the name of his patient as the person to whom the charge should be made. In this case it appeared that, at the request of the defendant, the plaintiff went and administered anesthetics, not knowing anything of the patients, not even their names, and not looking to them for payment. It also appeared from abundant evidence that the custom is for a surgeon to pay the small fee of an assistant physician whom he clearly requests to administer an anesthetic. Clearly both the presumption of law and the weight of the testimony was in favor of the plaintiff. The case should have been submitted to the jury. Justice Birdzell concurs; Justices Bronson and Grace concur in the result; and Chief Justice Christianson dissents.

Chief Justice Christianson says, in his dissenting opinion, that the plaintiff testified that in the first case in which he helped the defendant they were in the Elks' Home and the defendant asked him if he would care to go out for a drive with him to see a case of gunshot wound of the knee; it was another physician's case, and that physician wanted to assist

the defendant in the operation, and they had the plaintiff give the anesthetic. In the next case the defendant telephoned to the plaintiff's office and asked him if he could go up and give an anesthetic. The third case was one wherein the defendant called the plaintiff to give an anesthetic for a patient on whom he was operating for appendicitis. The next case was one in which the defendant asked him if he would come over and see a case with him. It was undisputed that the defendant at no time expressly promised to pay the plaintiff for the services which he rendered, and the sole question was whether, on the facts stated, there was an implied promise on the part of the defendant to pay for such services. The plaintiff knew that the defendant had been engaged as attending physician by certain patients. The defendant summoned the plaintiff to assist in treating such patients. The plaintiff met them. They received the benefit of his services. They were all persons of mature age, and in possession of their faculties. It would seem that under these circumstances the law did not imply any promise on the part of the defendant to pay the plaintiff for the services which he performed. In order to be binding, a custom must be certain, uniform and general, which the plaintiff's evidence did not show of the alleged custom for surgeons to pay assistant physicians.

Release Not Bar to Action for Roentgen-Ray Burns

(*Wheat et al. v. Carter* (N. H.), 106 Atl. R. 602)

The Supreme Court of New Hampshire, in overruling exceptions to a judgment that dismissed the plaintiff's petition for an injunction to prevent the defendant from prosecuting an action which he had brought against them because they had burned him with a roentgen-ray machine after he had employed them to treat his hand which had been injured, holds that a release which he gave to his employers, in whose service he was injured, was not necessarily a bar to his right of action against the plaintiffs. The court says that it is settled in New Hampshire that the release of one joint tort-feasor or wrong-doer is a bar to a suit against the others; and that is also true as to the effect of a release when the releasor's loss is caused by the concurrent misconduct of the one released and others. The reason that a settlement with one of several tort-feasors or wrong-doers is ever a bar to a suit against the others is that the injured party has been fully compensated for the loss which he is seeking to recover in the second suit. Since this is so, the question in this case was whether the defendant had already been compensated for the loss he sustained as the result of the plaintiffs' use of the roentgen-ray machine, not, as the plaintiffs contended, whether his employers might have been liable for that loss. In other words, the test to determine whether the release was a bar to his suit against the plaintiffs was to inquire as to the extent of the claim he made at the time he settled with his employers. Was he claiming to recover all the loss he sustained as the result of the original injury to his hand, or only the loss which resulted immediately from that injury? However the fact may be in other states, in New Hampshire the issue raised by the inquiry was an issue of fact to be determined, like all such issues, by the weight of competent evidence. The question, therefore, which was raised by the plaintiff's exception to the sufficiency of the evidence, was whether it would warrant a finding that the defendant had not been compensated for the loss he was seeking to recover from the plaintiffs. It was permissible, when considering that issue, to consider the defendant's testimony, even though it might contradict the terms of the release. In short, notwithstanding his employers might have been liable for all the loss the defendant sustained, and the release included all claims he might have against them, it was permissible for him in this proceeding to show just what he was claiming when he settled with them, for these plaintiffs were not parties to the release. In other words, the release in and of itself was not a bar to the defendant's suit against the plaintiffs; but, if he had already been compensated by his employers for the loss he was seeking to recover in that suit, that fact was a bar to the suit.

Society Proceedings

WESTERN SURGICAL ASSOCIATION

Twenty-Ninth Annual Meeting, held in Kansas City, Mo., Dec. 5-6, 1919

The President, DR. ROLAND HILL, St. Louis, in the Chair

Artificial Impaction of Femur in Aged

DR. CHARLES D. LOCKWOOD, Pasadena, Calif.: Artificial impaction affords immediate bony contact and insures an adequate blood supply for union. With the patient under anesthesia, the limb is placed in extreme abduction and strong traction, with slight internal rotation. The great trochanter, protected by two layers of felt, is struck three or four swinging blows with a large wooden mallet. A light plaster-of-Paris cast is applied extending from below the knee to the waist line and including the sound limb to the knee. The anesthesia lasts only five or ten minutes, and there is no shock to the patient. The patient is placed on a fracture bed equipped with a special frame and elevating device, enabling the nurse to raise the patient with ease, to bathe, attend to the bowels, and to change the bedding. The cast may be removed as early as the eighth week; but if well borne, it should be left on for twelve weeks. By the end of the fourth month the patient is up and about on crutches, and is bearing some weight on the broken leg. I have treated three patients more than 70 years of age by this method, and all are walking and perfectly well.

Tuberculosis of Joints; Rollier's Heliotherapy

DR. GUSTAV SCHWYZER, Minneapolis: It is my practice to operate in every case of tuberculous joint whenever it is feasible, with Esmarch's constrictor applied. Only with this bloodless procedure is it possible to differentiate between healthy and diseased tissues. In operating, I generally follow the method of Kocher. It would be taking another great step ahead in the treatment of surgical tuberculosis if we could establish numerous institutions in America where Rollier's treatment could be used intelligently; but there will always be persons who cannot spend from one year to three years in such institutions, waiting for a definite cure. For these patients, surgery may be preferable.

A Mixture of Ethyl Chlorid, Chloroform and Ether for

General Anesthesia: An Experience in War Surgery

DR. E. P. QUAIN, Bismarck, N. D.: In France this mixture was considered the most suitable anesthetic for most minor injuries as well as for wounds of moderate severity. We employed it as the anesthetic of choice for most operations that could be finished within fifteen or twenty minutes. In many instances, therefore, the speed of the operating team was the criterion as to whether the choice would be the ethyl chlorid mixture or simply ether. We used ethyl chlorid, 1 c.c.; chloroform, 1 c.c., and ether, 24 c.c. This mixture is poured on a piece of flannel, which is spread out smoothly over a similar piece of flannel laid on the patient's face. A mask is placed over the face so that the margin of the mask is held firmly around the face, under the chin, in front of the ears and over the top of the head. The mask should be as air-tight as possible. There can be no reason why this mixture should not be used in emergency surgery in civil practice when conditions and necessities correspond more or less to those of the wounded soldiers.

Operative Technic in Spina Bifida

This paper, by Dr. Joseph Rilus Eastman, Indianapolis, will be published in full in THE JOURNAL.

Rhinophyma

DR. M. G. SEELIG, St. Louis: The treatment of the disease is exclusively operative. The most satisfactory operative procedure consists in shaving off the redundant tissue until the nose is brought back to what is believed to have been its original form. In this shaving process, two things should be borne in mind: 1. One should not shave too deeply. 2. A rim of epithelium should be preserved around the nares. If the shaving is carried too deeply, all sebaceous gland rests

are removed, and there are left no niduses of epithelium from which, as brood centers, epithelization may spread. This delays healing, and even if the nose be grafted, the resultant skin has a harsh, white, dry appearance so striking as always to command attention and cause comment. Furthermore, deep shaving may injure the nasal cartilages and set up a stubborn perichondritis. If a thin ring of intact skin is not left around the nares, serious disfigurement may result from the contractions incident to cicatrization. Hemorrhage, which is usually very free, is checked with comparative ease by simple gauze pressure, and the patient is sent to bed with a large gauze pad well smeared with petrolatum over the nose. Next day this pad is removed, and the denuded area strapped with imbricated strips of sterile zinc oxid adhesive plaster. This dressing is changed daily. Skin grafting is not necessary.

Diaphragmatic Hernia

DR. T. F. RIGGS, Pierre, S. D.: According to the authorities, the great majority of diaphragmatic hernias occur to the left of the midline. My case was one of true traumatic hernia on the right of the median line.

Jaundice and Its Surgical Significance

DR. CHARLES H. MAYO, Rochester, Minn.: In approximately 50 per cent. of cases, the jaundice is caused by obstruction of the common duct by gallstones; in 20 per cent. it is caused by absorption of bile in the liver, or infective or catarrhal jaundice without duct obstruction. From 5 to 8 per cent. of cases of jaundice are caused by serious infection of the gallbladder, possibly gangrene with or without stones. Jaundice from cancer represents 15 per cent. of the cases seen; one half of these cases are caused by cancer of the liver, and the other half, by cancer of the pancreas or the gallbladder and ducts. Jaundice is a late symptom of gallstones in the majority of cases, the result of neglect to recognize the condition or to advise operation in the preventive period. The mortality following cholecystectomy for cholecystitis, with or without stones, is low: only 1.8 per cent. in 2,460 operations performed during a period of three years. There were 337 cases in which both cholecystectomy and choledochotomy were done, with a mortality of 3.2 per cent. In a very serious group of thirty-six cases of obstruction and malignancy, cholecystostomy and choledochotomy were done, with a mortality of 16.6 per cent. Choledochotomy alone was done in a somewhat similar group of forty-seven cases, with a mortality of 15 per cent. If all the choledochotomies are grouped together, however, the mortality in 420 cases is 5.7 per cent., too high a mortality for simple cases of stone and obstruction, and too low for the late and complicated cases, including the cancer cases. Stones were found in the common duct in 274 of the 420 cases.

Congenital Anomaly of Duodenum and Its Surgical Significance

DR. LEONARD FREEMAN, Denver: I have operated in six cases of duodenal obstruction. In none was the diagnosis made previous to the operation. Partial occlusion of the duodenum at the duodenojejunal angle, simulating pyloric obstruction, occasionally occurs from the persistence of a condition normally existing in fetal life. The duodenum, instead of appearing in the abdominal cavity from beneath the transverse megacolon to the left of the spine, emerges to the right, its transverse and ascending portions possessing a peritoneal covering and mesentery of their own, similar to the rest of the small intestine, instead of being fixed in fibrous tissue, as is normally the case. At the duodenojejunal angle, however, the bowel is hung up to the root of the colonic mesentery by a firm adhesion, the kink thus produced being intensified by the downward pull of the free duodenal loop. This kink is deeply situated, and in freeing it care must be taken not to injure the bowel, the inferior mesenteric veins or the left colic artery. A considerable denudation of the intestine may be necessary, which should be covered either by reuniting the peritoneum or by means of a free omental graft.

Surgical Treatment of Empyema

DR. W. W. GRANT, Denver: In the fall of 1917 and the spring of 1918, I operated in twenty-eight cases of empyema,

with a mortality of six cases. In the winter of 1918 and early in 1919, I operated in three cases with no mortality. In all cases, twenty minutes before the operation, one ounce of whisky was administered, and a hypodermic injection of $\frac{1}{6}$ grain of morphin, $\frac{1}{200}$ grain of atropin and $\frac{1}{2}$ grain of spartein. From 1 to $1\frac{1}{2}$ inches of rib were resected. On the right side, the eighth rib, and on the left side, the ninth or tenth rib, usually in the posterior axillary line, were selected, the aim being to secure the most dependent drainage. A rubber drainage tube, sometimes double, was immediately introduced, and the tissues were sutured snugly around it, the tube was fixed primarily with a suture and a safety pin, and the long outer tube was dropped into a bottle of water beneath the bed as in certain cases of gallbladder drainage. The quantity of pus evacuated varied from 2 to 4 quarts. The discharge diminished rapidly, and on the second or third day the patients were taken to the dressing room twice daily and the cavity irrigated with a 5 per cent. sodium bicarbonate solution, boric acid being added, followed immediately by a solution of iodine. The shortest period in which any patient returned to duty after operation was seventeen days, while the convalescent period in most instances was from two to three months.

Malignant and Benign Tumors of Breast

DR. BYRON B. DAVIS, Omaha: My study of 210 private cases is encouraging rather than discouraging. Operations for cancer save lives. The very early operation, so early that the microscope is necessary to make the diagnosis, is bound to produce better results than the operation done after the disease is easily diagnosed. The radical operation should be directed in such a way as to remove as thoroughly as possible the highways along which the disease is disseminated. The campaign of education of the public with reference to the signs of early cancer and its curability, when operation is performed early, should be continued and kept up unceasingly. The fact should be appreciated that every woman operated on for cancer of the breast, who remains free of the disease, is more powerful propaganda in the community in which she lives than all the tracts that could be written.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

Dec. 15, 1919, 24, No. 6

- *Botulism; Resistance of Spores of *B. Botulinus* to Sterilizing Agencies Commonly Employed in Canning Fruits and Vegetables. E. C. Dickton, G. S. Burke and E. S. Ward, San Francisco.—p. 581.
- *Pneumococcus Carriers. J. Sailer, Philadelphia; M. W. Hall, U. S. Army; R. L. Wilson, Jeannette, Pa., and C. McCoy, U. S. Army.—p. 600.
- Antipyretics. I. The Benedict Respiration Chamber at the New Haven Hospital. H. G. Barbour, New Haven.—p. 610.
- Antipyretics. II. Acetylsalicylic Acid and Heat Regulation in Normal Individuals. H. G. Barbour and M. M. Devenis, New Haven.—p. 617.
- *Antipyretics. III. Acetylsalicylic Acid and Heat Regulation in Fever Cases. H. G. Barbour, New Haven.—p. 624.
- *Mental Disorders Following Influenza. A. Gordon, Philadelphia.—p. 633.
- *Electrocardiogram and Ventricular Preponderance. E. P. Carter and C. H. Greene, Baltimore.—p. 638.
- *Basal Metabolism in Exophthalmic Goiter. J. H. Means and J. C. Aub, Boston.—p. 645.
- More Common Gases; Their Effect on Respiratory Tract in Two Thousand Cases. R. S. Berghoff, Chicago.—p. 678.

Botulism.—The experiments reported on by Dickson and his associates were undertaken to determine the thermal death point of *B. botulinus* and its spores under various conditions. They found that the spores of *B. botulinus*, when mixed with animal or vegetable protein, are much more resistant to heat than has been believed. The acidification of the culture medium by the addition of 5 per cent. lemon juice does not prevent the growth of *B. botulinus* or the formation of its toxin, but the thermal death point of spores of *B. botulinus* is markedly lowered when they are heated in

an acid medium of similar concentration. The addition of cane sugar to beef broth in concentration up to 64 per cent. does not prevent the growth of *B. botulinus* or the formation of its toxin, although it does inhibit both to a certain extent. Certain fruits which have been canned in sugar form suitable mediums for the growth of *B. botulinus* and the development of its toxin. Peaches, apricots and pears were tested. Certain of the methods of canning are inefficient if the raw material happens to be contaminated with spores of *B. botulinus*. This is true of commercial canners' processes as well as of the home canning processes.

Pneumococcus Carriers.—The results of the disinfection experiments made by Sailer and others in their study of pneumococcus carriers may be summarized as follows: Dichloramin-T, dissolved in eucalyptol gave good results; used in solution in chlorcosane the results were far less satisfactory. Chlorin gas is not efficient and caused discomfort and is possibly dangerous even in such concentration as was used. Phenol showed good results. The solution in oil is more efficacious than that in glycerin. The use of instillations rather than sprays is perhaps preferable on account of reduced danger of ear infection. Iodin in oil gave good results. It caused no discomfort. Quinin sulphate proved of no value. An accidental observation suggests that it may be valuable in another way. The experiment was under way when the spring epidemic of influenza visited the camp. The carriers of other groups were attacked by the disease in the same proportion as the men of the rest of the camp. No cases of the disease developed in the group being sprayed with the quinin. The prompt subsidence of the epidemic prevented further observations. Chloramin-T is apparently of little value. Carriers were detected by means of smears from the nasopharynx spread on blood agar plates and transplantation of the green pneumococcus colonies in the blood broth medium of Avery. The application of this method to 700 men showed the presence of 16 per cent. of pneumococcus carriers. The authors believe that the contacts of cases of pneumonia should be subjected to culture in the same way as is now done for contacts of meningitis; that when such contacts are shown to be carriers of the same type of pneumococcus as that infecting the patient, vigorous antiseptic treatment should be instituted, combined with such measures of isolation as conditions permit. In the presence of epidemics of pneumonia or of diseases fatally complicated thereby, such as influenza or measles, it is practical to treat large numbers of men by these methods.

Antipyretic Value of Acetylsalicylic Acid.—Acetylsalicylic acid, in 1 gm. doses, which has no such action in normal persons, Barbour found exhibits a marked antipyretic effect in febrile, temporarily afebrile and convalescent subjects. The antipyretic effect is due essentially to the heat elimination, which is associated with marked perspiration and subjective warmth. Sensitivity of febrile, temporarily afebrile and convalescent subjects to antipyretics is not explained. These drugs do not "stimulate" a "depressed" heat regulating mechanism, nor is sensitivity due to a lack of readily combustible material (glucose); but the respiratory quotient of antipyretic sensitive individuals appears to be increased by doses of acetylsalicylic acid which do not affect the quotient of normal persons.

Mental Disorders Following Influenza.—Gordon's study is based on a series of sixty-two cases, all seen at the end of the febrile period during the phase of asthenia which ordinarily follows infectious diseases. The majority of the cases (forty-four) presented the well known confusional type of psychosis, more or less pronounced. The mental manifestations were particularly marked in persons whose previous medical histories either suggested various episodic phenomena of neuropathic character or contained accounts of actual psychotic disorders. This particular group differed greatly from the groups of cases without previous nervous or mental disorders. Each group is described in detail.

Value of Electrocardiogram.—It is emphasized by Carter and Greene that the electrocardiogram is the only satisfactory clinical method capable of estimating the relative pro-

ponderance of the two ventricles. Combined with the tele-roentgenogram as a guide to gross hypertrophy of the heart, it should furnish the clinician with an increased insight into the question of the mechanics of cardiac response in cases of hypertrophy.

Basal Metabolism in Goiter.—From the work done by Jeans and Aub it would appear that the safest program for the treatment of exophthalmic goiter, as a whole, is the routine irradiation of thyroid and thymus glands in all cases, with surgery held in reserve for patients who do not then do well. Surgery is contraindicated with patients whose metabolism is rising in spite of complete rest in bed, and also with patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had their thyroid and thymus glands treated by the roentgen ray. The risk of operation is greater, and the need for preoperative roentgen ray treatment is greater in cases with a very high metabolism and moderate tachycardia than in those with an extreme tachycardia and moderate metabolism elevation. In the management of exophthalmic goiter, periodic determination of the basal metabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus. In borderline cases the basal metabolism furnishes very valuable aid in differential diagnosis.

Archives of Neurology and Psychiatry, Chicago

Dec. 1919, 2, No. 6

Acute Ascending Paralysis Among Troops. L. Casamajor, New York.—p. 605.

Infective Neuronitis. F. Kennedy, New York.—p. 621.

Hereditary Occurrence of Hypothyroidism with Dystrophies of Nails and Hair. A. M. Barrett, Ann Arbor.—p. 628.

Case of Congenital Facial Paralysis. F. R. Fry and M. Kasak, St. Louis.—p. 638.

Problems in Diagnosis and Treatment of Injuries to Peripheral Nerves. C. A. Elsberg, New York, and A. H. Woods, Philadelphia.—p. 645.

Overlap of So-Called Protopathic Sensibility as Seen in Peripheral Nerve Lesions. L. J. Pollock, Chicago.—p. 667.

Acute Ascending Paralysis.—The material for this paper consisted of the spinal cords from two cases. Only one patient was seen by Casamajor before death. This man, a soldier, had had a fever for about twenty-four hours, five days before the onset of the paralysis. He suddenly became weak in the knees while working with a pick. He went to the dugout and lay down, and after a few hours was unable to move his legs. The next morning he could not move either legs or arms. He was not incontinent of feces or urine. His arms were completely paralyzed with the exception of the fingers of the right hand, which he could move voluntarily to a slight extent. His pulse was rapid and he had a temperature of 101 F. His breathing was labored and he had a beginning edema of the lungs. The paralysis was of an extreme flaccid type with complete abolition of all reflexes. No sensory loss could be determined anywhere. He died less than three days after the onset of the paralysis. The pathologic findings were practically identical in both cases. In both cases the histologic findings were approximately the same: 1. Hyperemia, hemorrhage edema, and gross swelling in the arachnoid; thickening of the pia. 2. Changes in blood vessel walls; no round cell infiltration. 3. Increase of the cellular neuroglia in the central gray, around the root fibers and in the posterior root ganglions. 4. Evidence of beginning degeneration of both a secondary and primary character in the anterior horn cells and some tract cells. Hyperemia of the central gray. 5. Marked degeneration of primary and secondary character of the nerve fibers where they lie in the arachnoid, always most marked in the motor fibers. In the second case there was also a beginning degeneration in the posterior nerve roots outside the dura and marked degeneration of the posterior root ganglion cells with neuronophagy.

Infective Neuronitis.—Kennedy cites four cases revealing minute clinical variants from the well known syndrome of neuritis, which, when considered along with the widespread changes in the posterior ganglions, spinal roots, intracranial cells and Betz cells of the cortex, would

seem to make it fitting to remove this disease from the neuritides proper, and to designate it by a title more descriptive of the clinical and pathologic picture produced. This condition was described fully by Bradford, Bashford and Wilson in the *Quarterly Journal of Medicine* 12:88, 104 (Oct., 1918, Jan., 1919) and abstracted in THE JOURNAL, March 22, 1919, p. 899.

Hereditary Hypothyroidism.—Among sixty-one members of a family belonging to six generations, investigated by Barrett both hair and nails were affected in fourteen instances. The nail defect seemed to be about the same in all, but there was much variation in the degrees of loss of head hair. In the greater number there was an extreme scantiness as to the amount of hair. In no instance was there a total loss of all hair of the head, the most extreme cases showing a fine lanugo-like covering of the scalp. Aside from this particular abnormality, there were other features that showed that in this family group there were conditions active in the production of a variety of disorders that are of much interest to neuropsychiatry. This is the high frequency of feeble-mindedness and neurologic disorders of a degenerate type among the family. The members of the third generation who had dystrophies of nails and hair, and all of their descendants, numbered twenty-nine persons. Of these, twenty-two were definitely abnormal. Twelve of the latter had the characteristic family dystrophy, and ten others, who lacked this, showed other constitutional and nervous disorders. These included one case of epilepsy, one of hysteria, one of severe tic, four instances of feeble-mindedness, one of nocturnal enuresis and four died at an early age from marasmus. Even those who had the nail and hair dystrophy had other abnormalities. One of these was an epileptic; one had cancer; four were feeble-minded, one had nocturnal enuresis. The well known association of abnormalities of hair and of nails in hypothyroidism, and two fairly well defined cases of juvenile myxedema which led to this study, and the reaction of one patient to thyroid feeding, Barrett says, seems to warrant the conclusion that the fundamental disorder in this family was of the thyroid gland.

Archives of Ophthalmology, New York

November, 1919, 48, No. 6

Nonoperable Tumor of Orbit and Brow Treated Successfully with Radium. G. H. Bell and S. Tousey, New York.—p. 531.

*Cases of Lethargic Encephalitis. H. Woods, Baltimore.—p. 536.

Ocular Complications Due to Typhoid Inoculations. F. P. Calhoun, Atlanta.—p. 553.

Subretinal Exudate Simulating Sarcoma of Choroid with Anatomic Examination. A. Knapp, New York.—p. 559.

Two Cases of Epithelioma of Eyeball and Lids. Operation. No Return After Eleven and Six Years. D. Roy, Atlanta.—p. 563.

Positive Focal Tuberculin Reaction in Spindle Cell Sarcoma Which Had Perforated Sclera. J. W. Charles, St. Louis.—p. 568.

Positive Posterior Fibrovascular Sheath of Lens. Report of Two Cases. F. Lane, Chicago.—p. 572.

Antidiphtheritic Serum in Severe Ocular Infections with Special Reference to Hypopyon Keratitis. B. W. Key, New York.—p. 581.

Eye Findings in Lethargic Encephalitis.—Of seven cases reported by Woods two gave history of antecedent influenza, one, a doubtful history, and four, no history of this disease. In only one case was there optic neuritis, and this was of low grade. In three cases there was serious impairment of accommodation, and the pupils were dilated, sluggish and at times inactive. In another case, the patient's age prevented accommodation tests, but the pupils presented similar conditions. These four patients presented other defects; involvement of other branches of the third nerve; abducens and facial paralysis. These cases confirm the observation that the return to normal of the intrinsic muscles is slower than that of the extrinsic muscles. Of special interest were the nystagmoid movements, which occurred in five of these seven cases. In two cases they were the only signs pointing to involvement of the eye muscles.

Boston Medical and Surgical Journal

Dec. 18, 1919, 181, No. 25

Public Health. A. Worcester, Waltham, Mass.—p. 703.

*Tumors of Anterior Surface of Sacrum. F. B. Lund, Boston.—p. 704.

Tumors of Sacrum.—Lund reports two cases, one of chordoma of the sacrum and one of sacrococcygeal dermoid.

California State Journal of Medicine, San Francisco

December, 1919, **17**, No. 12

- Encephalitis Lethargica in San Francisco. P. K. Brown, San Francisco.—p. 427.
 *Intestinal Flagellates: A Plea for Their Pathogenicity. J. V. Barrow, Los Angeles.—p. 429.
 Plea for Earlier Recognition of Subacute Infantile Scurvy. L. Porter, Los Angeles.—p. 431.
 *Case of Tetanus Successfully Treated by Antitoxin. H. P. Jacobson, Los Angeles.—p. 434.

Intestinal Flagellates: Plea for Their Pathogenicity.—Among the twenty-one cases cited by Barrow there were three cases of intestinal perforation. From one of these, *Trichomonas intestinalis* was recovered, both in the feces and in the peritoneal drainage. He points out that intestinal flagellosis is relatively common in California. Their pathogenicity is not wholly manifested by dysentery, but rather more often by other signs of an absorptive toxemia. No treatment thus far recommended is wholly successful. Calomel, followed by a saline laxative, gives the best temporary relief, but in about ten days' time, a careful search will reveal the parasites again. It is, therefore, necessary to repeat treatment many times. Thymol in large doses has considerable value. Emetin and ipecac exert a helpful influence in most cases. Oil of chenopodium and turpentine are very helpful; enemas of kerosene, ichthyol, or allied substances, have a marked beneficial effect, while those of methylene blue and sodium bicarbonate have about the same relative value as tap water.

Case of Tetanus Successfully Treated by Antitoxin.—During six days of treatment, Jacobson administered 117,000 units of antitoxin; 22,000 units were given intramuscularly; 70,000 units were given intravenously and 25,000 units were given intraspinally. Jacobson favors the administration of antitoxin jointly or alternately intraspinally, intravenously, intramuscularly and locally as being the most rational and promising method of treating tetanus.

Canadian Journal of Mental Hygiene, Toronto

October, 1919, **1**, No. 3

- The Mysterious Stranger (Henry More Smith). C. K. Clarke, Toronto.—p. 199.
 The Parents' Plea. H. MacMurchy, Toronto.—p. 211.
 Oriental Immigration. W. G. Smith, Toronto.—p. 213.
 Summer School for Auxiliary Class Teachers at Toronto. B. Kellaway, Toronto.—p. 223.
 One Phase of Foreign Invasion of Canada. J. Halpenny, Winnipeg.—p. 224.
 Invalid Occupation as a Guide to Vocational Fitness of Handicapped. N. L. Burnette, Toronto.—p. 227.
 Relation of Juvenile Court to Community. H. G. Macgill, Vancouver, B. C.—p. 232.
 Account of Work for Feeble-minded in Hamilton, Ontario. T. H. Willis, Toronto.—p. 237.

Colorado Medicine, Denver

December, 1919, **16**, No. 12

- State Program for Control of Venereal Disease. S. R. McKelvey, Denver.—p. 289.
 Organotherapy. H. W. Hazlett, Paonia.—p. 293.
 Cholesteatoma Involving Orbit. F. R. Spencer and C. L. LaRue, Boulder.—p. 302.

Delaware State Medical Journal, Wilmington

July-August-September, 1919, **10**, No. 3

- Dermoid Cyst in Child. S. C. Rumford, Wilmington.—p. 8.
 Cited for Distinguished Service. L. S. Conwell, Camden.—p. 10.
 Autointoxication. C. deJ. Harbordt, Dover.—p. 23.

Georgia Medical Association Journal, Atlanta

November, 1919, **11**, No. 7

- Twenty-Five Cesarean Sections. C. P. Proctor, Athens.—p. 117.
 Transchoroidal Therapy in Neurosyphilis. C. E. Dowman, Atlanta.—p. 119.
 Early Diagnosis and Treatment of Cancer. M. B. Hutchins, Atlanta.—p. 121.
 Appendicitis. L. C. Fischer, Atlanta.—p. 123.
 Gastric Complications of Vascular Hypertension. G. Giddings, Atlanta.—p. 128.
 Case of Intestinal Paresis Following Abdominal Section. A. M. Dimmock, Atlanta.—p. 132.

Illinois Medical Journal, Oak Park

December, 1919, **36**, No. 6

- Medical Organization. W. Johnson, Chicago.—p. 289.
 Of the World as Well as in It. R. J. Folonie, Chicago.—p. 292.
 Ileus; Ruptured Ectopic Pregnancy; Appendicitis; Ulcer of the Stomach and Duodenum. D. R. Connell, Beloit, Wis.—p. 294.
 Abdominal Emergencies. D. J. Twohig, Fond du Lac, Wis.—p. 298.
 Relation of Dust to Spread of Tuberculosis. H. C. Sweany and C. C. MacLane, Chicago.—p. 302.
 *Optic Neuritis and Etiologic Relation of Diseased Tonsils; Report of Case. C. B. Welton, Peoria.—p. 305.
 New Problems in Empyema. E. G. Beck, Chicago.—p. 311.
 Skin Grafting. J. F. Pember and T. W. Nuzum, Janesville, Wis.—p. 314.
 Study of One Hundred Cases of Suspected Chronic Nasal Accessory Sinus Disease with a Report of Roentgen-Ray Findings. H. C. Ballenger, Chicago.—p. 316.

Optic Neuritis and Diseased Tonsils.—The case of optic neuritis cited by Welton is of interest: first, because of the obscure etiology; second, because of retention of normal central vision with an inflammation of the nerve head present, but with permanent damage sustained by the nerve, shown in the contraction of the color fields, and third, because of the apparent nonparticipation of the tonsils and the quick relief obtained with removal of this remote point of infection.

Indiana State Medical Ass'n Journal, Fort Wayne

Dec. 15, 1919, **12**, No. 12

- Treatment of Tetanus; Report of Six Cases. C. G. Beall, Fort Wayne.—p. 321.

Journal of Biologic Chemistry, Baltimore

December, 1919, **40**, No. 2

- *Effects of Malt and Malt Extracts on Scurvy and Alkaline Reserve of Blood. J. F. McClendon, W. C. C. Cole, O. Engstrand and J. E. Middlekauff, Minneapolis.—p. 243.
 *Toxicity of Phenylacetic Acid. C. P. Sherwin and K. S. Kennard, New York.—p. 259.
 *Chemical Identification of Thyroxin. E. C. Kendall and A. E. Osterberg, Rochester, Minn.—p. 265.
 *Carbonic Acid and Carbonates in Cows' Milk. L. L. Van Slyke and J. C. Baker, Geneva, N. Y.—p. 335.
 *Conditions Causing Variation in Reaction of Freshly Drawn Milk. L. L. Van Slyke and J. C. Baker, Geneva, N. Y.—p. 345.
 Method of Preliminary Detection of Abnormal Milk Based on Hydrogen Ion Concentration. J. C. Baker and L. L. Van Slyke, Geneva, N. Y.—p. 357.
 Extraction and Concentration of Water-Soluble Vitamin from Brewer's Yeast. T. B. Osborne and A. J. Wakeman, New Haven.—p. 383.
 Crystalline Salts of Uridinphosphoric Acid. P. A. Levene, New York.—p. 395.
 Identity of Water-Soluble Growth-Promoting Vitamin and the Antineuritic Vitamin. H. H. Mitchell, Urbana, Ill.—p. 399.
 Structure of Yeast Nucleic Acid. IV. Ammonia Hydrolysis. P. A. Levene, New York.—p. 415.
 *Activity of Lung Extract, as Compared to Extracts of Other Tissues in Inducing Coagulation of Blood. C. A. Mills, Cincinnati.—p. 421.
 Hydrolysis of Stizolobin, Globulin of Chinese Velvet Bean, Stizolobium Niveum. D. B. Jones and C. O. Johns, Washington, D. C.—p. 431.
 *Nutritive Value of Banana. II. K. Sugiura and S. R. Benedict, New York.—p. 449.
 Physiology of Phosphorus and Calcium Metabolism of Dairy Cows. E. B. Meigs, N. R. Blatherwick and C. A. Cary, Washington, D. C.—p. 469.
 Fat-Soluble Vitamin. II. Fat-Soluble Vitamin Content of Rats Together with Some Observations on Their Water-Soluble Vitamin Content. H. Steenbock and E. G. Gross, Madison, Wis.—p. 501.
 Chemotherapeutic Studies on Organic Compounds Containing Mercury and Arsenic. G. W. Raiziss, J. A. Kolmer and J. L. Gavron, Philadelphia.—p. 533.

Effects of Malt and Malt Extracts on Scurvy.—The study made by McClendon and others shows that acidosis has nothing to do with scurvy. Sprouted cereal grains, especially after the acrospire projects one-half inch beyond the grain, are rich in antiscorbutic substance. The antiscorbutic substance in sprouted grain is not destroyed by heating to 70° to gelatinize the starch. The antiscorbutic substance may be extracted from sprouted barley after crushing it between steel rolls that are so close together that the cells of the acrospire are crushed.

Toxicity of Phenylacetic Acid.—As a result of feeding excessive doses of phenylacetic acid to a dog, Sherwin and Kennard found that the secreting epithelium of the proximal convoluted tube of the kidney was markedly affected; the endothelium of the blood vessels was not affected; the epithelium of the arched collecting tubule showed evidence of a destructive action, while that of the straight collecting tubule appeared to escape. The secreting epithelium of

limbs of Henle's loop was most distinctly involved. The interstitial tissue of the kidney was found not to be injured, and the liver changes, the authors believe, are in all probability secondary.

Chemical Identification of Thyroxin.—In this, the second paper of a series, Kendall and Osterberg report in detail on the most important physical and chemical properties of thyroxin.

Carbonates in Cow's Milk.—In the case of twenty-five samples of milk drawn from separate quarters of the udder, Van Slyke and Baker found that the CO_2 varies from 7 per cent. by volume to 86 per cent.; the p_{H} value varies from 6.50 to 7.16, in a general way increasing with the CO_2 content; the degree of acidity, as measured by titration, tends to decrease with increase of CO_2 content. In comparison with the results of other workers, the results obtained by us are higher. The CO_2 content of normal milk appears to be about 10 per cent. by volume.

Variations in Reaction of Fresh Milk.—The object of this investigation was the study of the extent and causes of the variation of the hydrogen ion concentration in freshly drawn cow's milk.

Activity of Lung Extract.—The strong coagulative activity of lung and kidney tissues, and to a lesser degree of skin, Mills says, is suggestive of a possible protective mechanism against hemorrhage.

Nutritive Value of Banana.—According to Sugiura and Benedict, a diet consisting of bananas, 83.0 per cent., casein, 16.0 per cent., yeast, 0.5 per cent., and protein-free milk, 0.5 per cent., is an adequate diet for the growth, maintenance, reproduction and perfect milk production of the albino rats.

Journal of Cutaneous Diseases, Chicago

December, 1919, 37, No. 12

Parapsoriasis Lichenoides Linearis. Report of Case. H. J. F. Wallhauser, Newark, N. J.—p. 763.

Relationship of Kidney Function to Certain Skin Diseases Based on Phenolsulphonaphthalein Test. R. H. Davis and M. F. Engman, St. Louis.—p. 772.

Dermatology and Syphilology in a Medical Advisory Board. H. H. Hazen, Washington, D. C.—p. 779.

Arithmetical Computation of Roentgen Dosage. G. M. MacKee, New York.—p. 783.

*Treatment (?) of Psoriasis. W. A. Pusey, Chicago.—p. 791.

Treatment (?) of Psoriasis.—Pusey records a case which illustrates the futility of most of the empiric treatments for psoriasis to which the patient had submitted in the course of three years. The patient had been given emetin, arsphenamin, staphylococcus and streptococcus vaccine, Fowler's solution and autoserum. He had been on as strict a non-protein diet as he could devise for himself for seven months. He had his tonsils removed, seven teeth extracted and then had a few roentgen-ray exposures. In spite of these measures, the psoriasis showed no improvement; in fact, no material change of any sort.

Journal of Experimental Medicine, Baltimore

Dec. 1, 1919, 30, No. 6

*Strain of Connective Tissue Seven Years Old. A. H. Ebeling, New York.—p. 531.

Streptolysin Production in Carbohydrate Medium. F. A. Stevens and S. A. Koser, M. C., U. S. Army.—p. 539.

*Pfeiffer's Bacillus and Influenza: A Serologic Study. M. Wollstein, New York.—p. 555.

Single Cell Method of Influence of Homologous Antipneumococcic Serum on Growth Rate of Penumococcus. M. A. Barber, New York.—p. 569.

*Antiblastic Phenomena in Active Acquired Immunity and in Natural Immunity to Pneumococcus. M. A. Barber, New York.—p. 589.

Blood Viscosity: I. Conditions Affecting Viscosity of Blood After Withdrawal from Body. L. Langstroth.—p. 597.

Effect of Hypotonic and Hypertonic Solutions on Fibroblasts of Embryonic Chick Heart in Vitro. M. J. Hoguc.—p. 617.

Old Strain of Connective Tissue in Culture.—A fragment of heart extirpated from a chick embryo, Jan. 17, 1912, is still alive. It has been under cultivation in vitro for a period of over seven years and has undergone 1,390 passages. Ebeling describes the technic employed in perpetuating the strain during the last five years and in measuring the increase of the tissue, the factors which influence the rate of growth, and the present condition of the strain. The medium

used for perpetuating the strain is composed of equal volumes of chicken plasma and chick embryo extract.

Pfeiffer's Bacillus and Influenza.—The serums of patients convalescent from influenza yield reactions for agglutinins, precipitins, and complement binding bodies with antigens of Pfeiffer's bacillus. These reactions appear constantly at the end of the first week, increase in intensity during the second week, and remain demonstrable for a period of from two to four months. They were most complete in the serum of patients suffering from postinfluenzal pneumonia. It is also demonstrated by Wollstein that the strains of Pfeiffer's bacillus isolated during the epidemic were morphologically and biologically similar to the strains isolated from influenza cases in other years, and antigenically they differed from them only quantitatively. The patients' serologic reactions indicate the parasitic nature of the bacillus, but are not sufficiently stable and clean cut to signify that Pfeiffer's bacillus is the specific inciting agent of epidemic influenza. They do, however, indicate that the bacillus of Pfeiffer is at least a very common secondary invader in influenza, and that its presence influences the course of the pathologic process.

Antiblastic Phenomena in Immunity to Pneumococcus.—Barber gives the results of a series of experiments made with a special technic for the purpose of testing whether or not so-called antiblastic phenomena or bactericidal phenomena play any part in immunity to pneumococcus

Journal of Immunology, Baltimore

September, 1919, 4, No. 5

Thermolabile and Thermostabile Antilysins (Anticomplementary Substances) of Human Serum. T. Kyutoku, Philadelphia.—p. 239.

Removal of Hemagglutinin from Rabbit Antihuman Serum. J. E. Sands and L. B. West, Philadelphia.—p. 275.

*New Method of Testing Antityphoid Serum. Y. Fukuhara and M. Yoshioka, Osaka, Japan.—p. 285.

*New Method of Testing Antitoxic Dysentery Serum. Y. Fikuhara, Osaka, Japan.—p. 299.

Experimental Purpura. M. J. Gottlieb, New York.—p. 309.

*Antigenic Property of Pfeiffer Bacillus as Related to Its Value in Prophylaxis of Epidemic Influenza. C. W. Duval and W. H. Harris, New Orleans.—p. 317.

*Poisons of Influenza Bacillus. J. T. Parker, New York.—p. 331.

*Existence of a Multiplicity of Races of B. Influenzae as Determined by Agglutination and Agglutinin Absorption. E. Valentine and G. M. Cooper, New York.—p. 359.

Protein Intoxication. IV. Histologic Lesions Produced by Injections of Pepton. T. H. Boughton, Chicago.—p. 381.

Production of an Antihemotoxin for Hemotoxin of Bacterium Welchii (Bacillus Aerogenes Capsulatus). W. W. Ford and G. H. Williams, Baltimore.—p. 385.

Testing Antityphoid Serum.—The new method of testing typhoid antisera worked out by Fukuhara and Yoshioka is as follows: With the use of an arbitrary protective unit of antiserum (standard serum), the L_+ dose of a typhoid culture is determined; with this L_+ dose see p. 290 the serum to be tested is mixed in varying quantities; the largest amount of the serum which will just permit the death of a guinea-pig of 250 gm. weight within twenty-four hours after the mixture has been injected into the peritoneal cavity is taken as the protective unit. The value of an antityphoid serum is expressed by the number of such protective units contained in 1 c.c. of the serum. Any strain of typhoid bacteria can be used for the test. The virulence control is not important.

Testing Antitoxic Dysentery Serum.—In order to determine the antitoxic value of antidysentery serum it is necessary to select a standard serum which can be preserved in a dry state in the vacuum tubes of Ehrlich. The standard antitoxin unit adopted by Fukuhara was the amount that neutralized 100 minimal lethal doses of the toxin which at that time was available. For the testing of other antidysentery serum the so-called L. dose of dysentery toxin was adopted as the smallest amount which when mixed with the antitoxin unit and injected intravenously into a rabbit of 1,500 to 2,000 gm. weight caused the death of the animal within from four to five days. The L. dose of the toxin is employed, in the usual manner, to determine the relative antitoxic value of newly prepared antiserum.

Antigenic Property of Pfeiffer Bacillus.—During the height of the epidemic of influenza in New Orleans more

than 5,000 persons were vaccinated by Duval and Harris with a specially prepared protein suspension of the Pfeiffer bacillus. Of this number approximately 90 per cent. did not contract influenza, either during the period of the epidemic or its recrudescence which occurred two months afterward. The culture used in the preparation of the vaccine was grown on the surface of hemoglobin nutrient agar at a temperature of 37 C. for from thirty-six to forty-eight hours, when the growth was washed off and suspended in physiologic sodium chlorid solution and immediately devitalized by being saturated with chemically pure chloroform.

Poisons of the Influenza Bacillus.—While the evidence obtained by Parker is by no means conclusive, it seems probable that the poison of *B. influenzae* contains two poisons; the first, the more important one, a true soluble toxin, filtrable, thermolabile, against which antitoxins can be produced; the second, present also in the vaccine of *B. influenzae*, also filtrable, but differing from the first poison in its thermostability, and in the fact that it is not detoxicated by the antitoxin.

Multiplicity of Races of *B. Influenzae*.—The results recorded by Valentine and Cooper are held to indicate that under the term *B. influenzae* are included a group of organisms which, for practical purposes, is heterogeneous in character as determined by immunologic reactions. The existence of a multiplicity of races is advanced as evidence that *B. influenzae* is not the primary etiologic agent in epidemic influenza.

Journal of Infectious Diseases, Chicago

December, 1919, 25, No. 6

- *Pathogenicity of Bacillus Influenzae for Laboratory Animals. H. Albert and S. R. Kelman, Iowa City.—p. 433.
- *Adjustment of Reaction of Culture Mediums. E. A. Fennel and M. B. Fisher, Washington, D. C.—p. 444.
- Complement Fixation with Acid Fast Bacteria. I. Study of Various Organisms with Immune Rabbit Serums. J. V. Cooke, New York.—p. 452.
- *Complement Fixation with Acid Fast Bacteria. II. Leprosy. J. V. Cooke, New York.—p. 474.
- *Complement Fixation with Acid Fast Bacteria. III. Tuberculosis. J. V. Cooke, New York.—p. 491.
- *Amebic Dysentery in California. W. W. Cort and J. D. McDonald, Berkeley.—p. 501.
- Streptolysin. Y. Nakayama, Chicago.—p. 509.

Pathogenicity of Bacillus Influenzae.—The Pfeiffer influenza bacillus was found by Albert and Kelman to be distinctly pathogenic to mice, guinea-pigs and rabbits. Although the symptoms of intoxication as seen in lower animals following injections of the Pfeiffer bacillus are suggestive of the profound intoxication seen in connection with many cases of the epidemic disease influenza in the human being, the authors feel that their experiments do not furnish any proof that the Pfeiffer bacillus has any specific etiologic relationship to that disease. On the other hand, they suggest that a possible etiologic relationship cannot be ignored.

Reaction of Culture Mediums.—According to Fennel and Fisher the adjustment of bacteriologic culture mediums according to hydrogen-ion concentration, because of its accuracy and simplicity, should wholly supplant the phenolphthalein (total acidity) method.

Complement Fixation in Leprosy.—In a study of twenty cases of leprosy of the nodular, macular, nerve and mixed type, Cooke found that leper serums contain complement binding substances that react with antigens of acid fast bacilli and give an acid fast fixation similar to that obtained with serums of rabbits immunized with acid fast organisms. Some serums contain these antibodies in rather high concentration, notably those from cases of the nodular type of the disease; other serums show a relatively low antibody content. The serums of high titer may give a nonspecific fixation also with nonacid fast antigens and with lipoidal (Wassermann) antigen, but only in comparatively low dilutions. It is suggested that this attribute of such high titer leper serums may explain in a certain percentage of positive Wassermann reactions described in leprosy. The acid fast reaction given by leper serums with acid fast bacterial antigens prevents the use of the complement fixation reaction

in obtaining evidence of the etiologic importance of any acid fast organism isolated from leprosy.

Complement Fixation in Tuberculosis.—In tuberculosis, the serum contains complement binding substances that give fixation when members of the acid fast group of bacteria are used as antigen. These antibodies show a considerable difference in concentration in different serums, but this difference in titer does not correspond with the severity of the infection in the different cases. A relatively small percentage of patients with active tuberculosis have too small an amount of complement fixing antibody to be recognized in the test. These cases are analogous to those of syphilis that give a negative Wassermann reaction. Cooke found the test of some value in calling attention to unrecognized tuberculosis, but it does not always indicate a clinically active process. Leprosy and tuberculosis are the only human infections that give the reaction, and since it is specific for the acid fast group of bacteria, the term acid fast fixation seems appropriate.

Amebic Dysentery in California.—As a result of a circular letter sent out by the California State Board of Health a total of fifteen cases of amebic dysentery were reported from eight hospitals. No cases of dysentery caused by flagellate protozoans were reported.

Medical Record, New York

Oct. 25, 1919, 96, No. 17

- Present Status of Vaccination Against Influenza. F. E. Stewart, Philadelphia.—p. 681.
- *Treatment of Influenza and Complications. J. Diner, New York.—p. 685.
- *General Treatment of Influenza. N. P. Barnes, Washington, D. C.—p. 687.
- Control of Epidemic Influenza in Large Institution. H. C. Wood, Jr., Philadelphia.—p. 689.
- Lipovaccines. A. P. Hitchens, Indianapolis.—p. 692.
- *Therapeutics of Aspidosperma. R. W. Wilcox, New York.—p. 698.

Nov. 8, 1919, 96, No. 19

- Compulsory Health Insurance; Its Promises and Its Dangers. E. M. Stanton, Schenectady, N. Y.—p. 749.
- Possible Dietary Causes of Rheumatism. J. M. W. Kitchen, East Orange, N. J.—p. 752.
- Mental Diseases. H. Laveson, New York.—p. 754.
- Donor and Receptor in Regard to Blood Groups. A. L. Benedict, Buffalo.—p. 761.
- Symptoms Associated with Dentition. E. Moody, Joplin, Mo.—p. 762.
- Case of Scarlet Fever with Pneumonia as Complication. A. Lobell, New York.—p. 763.

Treatment of Influenza and Complications.—This paper was abstracted in THE JOURNAL, Aug. 9, 1919, p. 448.

Treatment of Influenza.—This paper was abstracted in THE JOURNAL, Aug. 16, 1919, p. 554.

Therapeutics of Aspidosperma.—Wilcox considers this drug a valuable remedy when the respiration is embarrassed, as in emphysema, chronic bronchitis or chronic pneumonia. Given in proper doses, it relieves not only the dyspnea but also the cyanosis and sense of suffocation. It appears to assist the oxygenation of the blood as well as to stimulate the respiratory center. Aspidospermine represents fairly well the activity of the drug with the further advantage that it may be used hypodermically in a dose of one-half grain (0.03 gm.).

Nebraska State Medical Journal, Norfolk

November, 1919, 4, No. 11

- Laennec. L. Crummer, Omaha.—p. 315.
- Immunization Against Diphtheria. J. H. Dillon, Lincoln.—p. 319.
- Dupuytren and His Contemporaries. A. F. Jonas, Omaha.—p. 320.
- History of Omaha-Douglas County Medical Society. A. B. Somers, Omaha.—p. 324.
- Series of Interesting Accident Cases. C. H. Waters, Omaha.—p. 325.
- Etiology and Pathology of Cancer. D. T. Quigley, Omaha.—p. 328.
- Postinfluenzal Pulmonary Complications Simulating Tuberculosis. W. N. Anderson, Omaha.—p. 332.
- Nitrous-Oxid Anesthesia for Obstetric Practice in Country. H. J. Wertman, Milford.—p. 335.
- *A Working Classification of Tumors. R. G. Breuer, Omaha.—p. 336.

Working Classification of Tumors.—Breuer's classification of tumors is based on their histologic, histogenetic and clinical characteristics: I. Tumors due to reproductive power of tissues: A. From the germ cell. B. From the somatic cell blastomata (unipotential). C. From the undifferentiate

somatic cell: Mixed tumors. II. Tumors due to errors of development: A. Failure progression of development: B. Failure of regression of development.

New York Medical Journal

Nov. 29, 1919, **110**, No. 22

- Application of Cardiovascular Studies of War to Civil Practice. J. H. Musser, Philadelphia.—p. 877.
Occupational Causes of Ill Health. L. I. Harris, New York.—p. 880.
Capillary and Venous Circulation in Relation to Disease. A. T. Livingston, Jamestown, N. Y.—p. 884.
Syphilitic Ocular Affections. A. Brav, Philadelphia.—p. 889.
Neurasthenia. A. Sauthoff, Mendota, Wis.—p. 891.
New Needles for Sewing in Deep Cavities. A. Kahn, New York.—p. 893.
Surgery at Base Hospital. A. G. Brenizer, Charlotte, N. C.—p. 894.
Case of Lethargic Encephalitis. H. Hershberg, New York.—p. 899.

Dec. 13, 1919, **110**, No. 24

- Modern Commentaries on Hippocrates. J. Wright, Pleasantville, N. Y.—p. 965.
Syphilis and Its Scrologic Significance. D. Kaplan, New York.—p. 969.
Influenza Prevention in Army Camps. W. S. Cornell, Philadelphia.—p. 973.
Benzyl Benzoate; Résumé of Work Done by Various Observers. J. M. Boice, Philadelphia.—p. 977.
Nature and Treatment of Acne Vulgaris. O. L. Levin, New York.—p. 982.
Health Protection and Sickness. H. Emerson, New York.—p. 985.
Treatment of Burns. A. W. Hengerer, Buffalo.—p. 988.

Treatment of Burns.—In every case of severe burn, Hengerer immediately gives full dose of morphin. Then he covers the damaged area with a clean towel or absorbent cotton, gets the patient to the hospital as soon as possible, administers an anesthetic and removes the damaged tissue by scrubbing the burned area with ordinary hand brushes until the surface appears to be covered with normal tissue. In scrubbing the burned area, the object is to remove all of the destroyed tissue. The scrubbing should be done as soon after the burn has occurred as possible but the length of time is not necessarily a contraindication. Hengerer has scrubbed burns three days after their occurrence with happy results. Brushes are changed frequently and asperis should be employed as much as possible. The wound may then be dressed with a thick covering of petrolatum on gauze on which a small amount of bismuth subiodid is sprinkled, or the wound may be covered with wax. Hengerer claims that patients with over one half of the body burned have been saved by this treatment, and that the resulting horrible deformities and disfiguration so often seen were greatly lessened. The dressings are bearable and often painless, the time of convalescence is greatly shortened. Hengerer terms this the surgical treatment of burns.

New York State Journal of Medicine

November, 1919, **19**, No. 11

- Plastic Surgical Restoration of War Injured Faces. G. V. I. Brown, Milwaukee.—p. 385.
Epidemiology of Influenza. P. B. Brooks, Albany.—p. 391.
Clinical Aspects of Influenza. W. R. Williams, New York.—p. 393.
Measure and Development of Nutrition in Childhood. G. M. Retan, Syracuse.—p. 397.

Northwest Medicine, Seattle, Wash.

November, 1919, **18**, No. 11

- Therapeutic Problems of Future. G. W. Middleton, Salt Lake City.—p. 225.
Value of Tuberculin Cutaneous Test. C. C. Browning, Los Angeles.—p. 230.
Ophthalmoscopic War Injuries. E. E. Maxey, Boise.—p. 232.
Histogenesis of Papillary Carcinoma of Bladder. J. R. Corkery, Spokane.—p. 234.

Pennsylvania Med. Journal, Chicago, and Athens, Pa.

December, 1919, **23**, No. 3

- The Milk Problem. C. H. Miner, Wilkes-Barre.—p. 115.
First Aid Industrial Accidents. M. J. Shields, Washington, D. C.—p. 117.
The Industrial Cripple. F. D. Patterson, Harrisburg.—p. 119.
Diagnosis of Cholecystitis and Gallstone. D. Ricsman, Philadelphia.—p. 120.
Value of Roentgenologic Study of Gastro-Intestinal Tract. H. K. Paucoast, Philadelphia.—p. 125.
Thorough Study vs. Exploratory Incision in Gastro-Intestinal Lesions. J. H. Gibbon, Philadelphia.—p. 127.

- *Surgical Treatment. A. C. Wood, Philadelphia.—p. 128.
*Medical Treatment of Diseases of Gastro-Intestinal Tract. J. A. Lichty, Pittsburgh.—p. 134.
*Attitude of General Practitioner. W. E. Robertson, Philadelphia.—p. 139.
*Value of High Rectal Enema. H. D. Jump, Philadelphia.—p. 142.
*Cancer of Esophagus. E. J. Patterson, Pittsburgh.—p. 147.
Community Organization. C. R. McKinniss, Pittsburgh.—p. 150.
Duty of State and Physician to Mental Patient. O. Copp, West Philadelphia.—p. 152.
*Foot Prophylaxis in Childhood. J. T. Rugh, Philadelphia.—p. 155.
Practical Points in Infant Feeding. F. C. Monks, Kittanning.—p. 158.
Anesthesia in Children. E. W. Beach, Philadelphia.—p. 161.
The Antinarcotic Law. T. S. Blair, Harrisburg.—p. 164.

Cholecystitis.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1548.

Roentgenologic Study of Gastro-Intestinal Tract.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1548.

Surgical Treatment.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1549.

Medical Treatment of Diseases of Gastro-Intestinal tract.—This paper was abstracted in THE JOURNAL, Nov. 8, 1919, p. 1468.

Attitude of General Practitioner.—This paper was abstracted in THE JOURNAL, Nov. 8, 1919, p. 1468.

Value of High Rectal Enema.—This paper was abstracted in THE JOURNAL, Nov 8, 1919, p. 1467.

Cancer of Esophagus.—Patterson advocates endoscopic examination in these cases, but warns that before any person is examined esophagoscopically it is of paramount importance to study the esophagus by means of fluoroscopy and roentgenoscopy in order to exclude aneurysm and to observe any hesitance in the normal function of the esophagus or obstruction in the passage of the barium meal through the esophagus. Three cases are reported.

Foot Prophylaxis in Childhood.—The prevention of foot disability in children, Rugh says, centers about two great classes of conditions, viz., the congenital and the acquired. Under all conditions, however, whether congenital or acquired; intrinsic (within the foot) or extrinsic (without the foot), fully 98 per cent. of disabilities in the foot in childhood (as, indeed, also in adults) are mechanical both in origin and in character. Every case examined must be looked at with this fact in mind, and whatever the type of the disability, its mechanics must be recognized and proper treatment advised. The various types of foot disorder and their treatment are discussed by Rugh.

Tennessee State Medical Association Journal, Nashville

November, 1919, **12**, No. 7

- Acriflavine in Treatment of Gonorrhea and Allied Conditions. P. Bromberg, Nashville.—p. 239.
Plea for More Perfect Anatomic Results in Fractures. S. R. Miller, Knoxville.—p. 245.
Multiple Neuritis; Its Treatment. D. Hayes, Tracy City.—p. 246.
Injuries of Cornea. W. W. Hill, Harriman.—p. 248.
*Congenital Diverticula of Intestines: Report of Case. W. T. Black, Memphis.—p. 253.
The More Common Psychoses. G. A. Hatcher, Nashville.—p. 258.

Congenital Diverticula.—In Black's case a tumor arose from the tip of a congenital diverticulum of the sigmoid. This tumor was connected only to the serosa side of the diverticulum. Potentially it was a malignant growth. A diverticulitis or perforation could be assigned as a predisposing or existing cause, although it could also be attributed to a fetal inclusion.

Texas State Journal of Medicine, Fort Worth

December, 1919, **15**, No. 8

- Diagnosis and Treatment of Goiter. A. C. Scott, Temple.—p. 275.
Surgery of Peripheral Nerves. W. L. Crosthwaite, Waco.—p. 279.
Mental and Nervous Diseases in Young People. G. F. Witt, Dallas.—p. 280.
Potential Dementia Praecox. T. Dorbandt, San Antonio.—p. 281.
Movable Retropositions of Uterus, Their Mechanism and Significance. M. C. O'Brien, San Antonio.—p. 284.
Acute Infectious Disease of Female Pelvic Cavity; Report of Cases. R. J. Alexander, Waco.—p. 287.
Mastoid Operation Under Local Anesthesia. T. A. Dickson, Houston.—p. 290.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Bulletin of Naval Medical Association of Japan, Tokyo

August, 1919, No. 25

Non-Gas Forming Bacillus Paratyphosus B. J. Ishiguro.—p. 1.

A Case of Extension Ulcers (Koehler) Following Strangulated Ileus of the Jejunum. T. Orimo.—p. 2.

Dublin Journal of Medical Science

November, 1919, Third Series, No. 575

Teaching of Pathology. T. T. O'Farrell.—p. 177.

The Ductless Glands. G. H. Davis.—p. 192.

Lancet, London

Dec. 6, 1919, 2, No. 5023

The Surgical Tradition. J. Tweedy.—p. 1009.

Plea for Better Teaching of Oto-Rhino-Laryngology. H. Tilley.—p. 1014.

Treatment of Malaria in England. S. P. James.—p. 1016.

Present Position of Roentgen Rays and Radium in Gynecology. D. Turner.—p. 1018.

*Diathermy. N. Patterson.—p. 1020.

Sporulation of Syphilis Organism as Seen on the Dark Ground. G. Lundie and F. H. Goss.—p. 1024.

*Frequency of Right Inguinal Hernia After Appendectomy by the "Gridiron" Incision. G. H. C. St. G. Griffiths.—p. 1026.

Environmental Factor in Causation of Beri-Beri. K. Simpson.—p. 1027.

Case of Carcinoma of Transverse Colon and Intussusception. I. Back and A. T. Edwards.—p. 1028.

*Unusual Form of Ventral Hernia. F. L. Apperly.—p. 1029.

A Pseudo-Paratyphoid Carrier. R. C. Watts.—p. 1029.

Diathermy in Mouth Cancer.—In the treatment of epithelioma of the mouth and pharynx, Patterson regards diathermy as the best method to adopt in all cases, not only in cases on the borderland of being inoperable by the knife. No excision of a carcinomatous growth in the tongue, mouth or pharynx, however small that growth may be, should be carried out with the knife if diathermy is available. Encouraged by the good results in cases where the disease was limited, Patterson has applied the method in advanced cases where nothing could really be expected from treatment of any kind. The results in selected cases have been extraordinarily good. Patterson believes that if patients could only be seen early enough a large number of cures would probably be effected. It has been too much the habit, he says, and it is still too much the habit of surgeons to regard this method as a palliative measure only, and as one to be reserved for "inoperable" cases.

Right Inguinal Hernia Following Appendectomy.—Griffiths has collected eleven cases of inguinal hernia following appendectomy. Of these, ten were on the right side and the eleventh appeared as a left inguinal hernia. The date of appearance of these hernias varied from a few months to three and one half years after appendectomy was performed. In one case the hernia followed twelve years after operation, but this case had also been complicated by an operation for ventral hernia in the old scar. This late occurrence may account for this end result or complication having passed unnoticed so long. In ten of the cases the gridiron incision was used, none of the incisions being near the outer border of the right rectus muscle. In the eleventh case, a Battle's scar was present, the hernia having appeared eighteen months after operation. The length of the scars varied from two and one half inches to a maximum of six inches. The situation, too, differed somewhat in position, from immediately above Poupart's ligament and the right iliac crest to near the midpoint between the right anterior superior spine and the umbilicus. The hernias were mostly small. The greater majority of the original operations for appendicitis had not required draining for pus, and the incision had been closed in the ordinary way. In explanation of this occurrence, Griffiths suggests that it may occur in two ways, either by avulsion or division of the fine muscular nerve twigs to the lower portions of the internal oblique and transversalis muscles during the opening of the peritoneal cavity, and leading to a partial or complete atrophy of the muscle fibers in the region of the internal abdominal ring; or, on the other hand, by compression of the same nerves

by the encircling catgut sutures in sewing up the incisions in the transversalis and internal oblique muscles, in repairing the abdomen after appendectomy.

Unusual Form of Ventral Hernia.—In Apperly's case the hernia protruded from the site of an artificial anus, made about six inches above the cecum. Part of the wall of the colon had been forced through the colostomy opening, and by stretching and turning inside out, formed the sac of a hernia, the content of which was a loop of gangrenous small intestine 10 inches long. The mucous membrane of the colon was so stretched and shining as to be indistinguishable from peritoneum. The gangrenous contents of the sac were readily removed when relieved from constriction and were resected. A lateral anastomosis was made, the colostomy being returned to its normal position.

Japan Medical World, Tokyo

Nov. 16, 1919, No. 309

Tuberculous Bacillary Antigen. T. Kodama and T. Hayashi.

Charge of Electrolytic Curve of Kakka Blood and Concentration of Hydrogen-Ion in Same. M. Sugawara.

Influence of Various Drugs Against Pulmonary Blood Circulation. K. Abe.

Nov. 23, 1919, No. 310

Physiologic and Pathologic Examination of Nerves and Muscles of Domestic Fowl Suffering from So-Called Polished Rice Disease. G. Kato and S. Shizume.

Nov. 30, 1919, No. 311

*Experimental Study of Spirochete of Weil's Disease. S. Wataguchi.

*Penetration of Drugs into Spinal Cavity and Their Disposal. H. Hashimoto.

Serum of Patient with Reference to Wassermann's Test. R. Kobayashi.

Cultivation of Spirochete of Weil's Disease.—Wataguchi succeeded in cultivating the spirochete of Weil's disease on a watery mixture of the blood. Guinea-pig inoculation with these cultures resulted in a reproduction of the disease, and an immunizing serum was obtained from rabbits. Specific immune bodies were found, and immunity was conferred by injection. All this work was done on animals. Further work is now in progress to apply these findings to human beings.

Penetration of Drugs Into Spinal Cavity and Their Disposal.—Iodin and hexamethylenamin were found in the urine by Hashimoto after injection of small amounts into the cerebrospinal fluid. However, it was more difficult to detect iodine in the cerebrospinal fluid, no matter whether given by mouth or intravenously, than was the case with hexamethylenamin. The penetration of these drugs seems to depend on the degree of the pathologic changes present. The greater the change, the less the degree of penetrability. Hashimoto claims that this finding is of value clinically.

Medical Journal of Australia, Sydney

Nov. 8, 1919, 2, No. 19

Intestinal Obstruction. R. A. Macleod.—p. 391.

Method of Ventricle Suspension of the Uterus. W. T. Chenhall.—p. 395.

Lesion of Optic Thalamus. A. E. Mills.—p. 397.

Nov. 15, 1919, 2, No. 20

Cardiac Murmurs. J. M. Gill, London.—p. 411.

*Apparent Transmission of Leprosy to a Macaque Monkey. B. Bradley, Sydney.—p. 414.

*Exophthalmic Goiter Combined with Myasthenia Gravis. G. E. Rennie, London.—p. 416.

A Case of Urethral Calculus. P. S. Clarke, Sydney.—p. 417.

Transmission of Leprosy to a Monkey.—Bradley reports on the inoculation of a monkey, *Macacus rhesus*, with leprosy material, and the subsequent development of nodular granulomatous lesions. The material was obtained from a nonulcerated lesion on the eyebrow of a leper. Numerous attempts were made on half of this piece of tissue for cultural purposes by Noguchi's and other methods, anaerobic and aerobic, but in all cases contamination occurred and the cultures were discarded. The remainder of the tissue was used for inoculating the monkey. Sixty days later the disease was seen to have developed. Smear preparations from three lesions showed leprosy bacilli in each one. A few days later the monkey was found dead. A thorough postmortem examination was made. Leprosy bacilli were found in the axillary and inguinal glands, and in the spleen.

Exophthalmic Goiter Combined with Myasthenia.—The outstanding feature in Rennie's case is the survival for a period of at least thirteen years of a patient suffering from a combination of the symptoms of two diseases, each of which is considered to have a grave prognosis; and not only a survival after these many years, but a practical recovery of a large amount of health and strength. A second point is the permanence of some defect of the external ocular muscles.

Practitioner, London

December, 1919, 103, No. 6

Mental Condition Preceding Suicide. W. A. Brend.—p. 401.

Anesthetics. J. Blomfield.—p. 412.

Recent Work in Diseases of Lung. A. J. Jex-Blake.—p. 419.

Tuberculosis Problem. O. Holden.—p. 428.

Recent Work on Diseases of Heart. C. W. Chapman.—p. 436.

Treatment of Sepsis in Nose and Ear by Ionization. A. R. Friel.—p. 449.

*Cesarean Section in Osteomalacia. E. F. Neve.—p. 453.

*Malignant Measles: Two Cases. H. V. O'Shea.—p. 460.

*Delayed Tetanus, with an Unusual Complication. H. K. V. Soltau.—p. 467.

Cesarean Section in Osteomalacia.—This article is based on seventy-three cases of cesarean section with seventeen deaths, a mortality of 23.3 per cent. Neve points out that these osteomalacia patients are poor subjects for operation; therefore even better results may be expected in other maternity cases. He advocates the judicious but extended use of this method of delivery. In any case, he considers craniotomy of a living child as little short of homicide.

Malignant Measles.—The first case cited by O'Shea was one of hemorrhagic measles. Although the nervous symptoms were well marked, approaching the "status typhosus," the most remarkable feature was the extensive hemorrhages, petechial and otherwise, which occurred throughout the body. Contrary to the usual issue, death, the patient recovered. The second case is an example of the toxic type of the infection, which was characterized by a badly developed rash, not well raised above the skin and of a bluish tint. The rash was of the dark malignant type, and hot mustard baths and diaphoresis failed to bring it out properly. Symptoms of meningitis showed themselves on the fourth day, and the condition of the patient became hopeless. Toward the end edema of the lungs set in with the failing circulation, preceded by hyperpyrexia and convulsions. Treatment was of no avail. The child died.

Tetanus with Unusual Complication.—A retained foreign body—subsequently removed—was probably the source of delayed tetanus in Soltau's case, but the interesting feature was not related to the tetanus. The man developed a small abscess, situated just behind the right trochanter. It was opened and drained a week later. Another incision over his right buttock opened up a collection of pus beneath the gluteus maximus. While swabbing out the abscess cavity, a dead worm, covered with blood clot, was removed on the gauze. The worm was 4 inches long, and, after investigation by the pathologist, was pronounced to be a male *Ascaris lumbricoides*. The stools were subsequently examined several times for ova, but only at the first examination, two days later, were any found, and these were ova of *Ascaris lumbricoides*.

Siamese Red Cross Medical Journal, Bangkok

August, 1919, 2, Pt. 2

Rebellious Consecutive Uterine Hemorrhage in Case of Hydatid Mole Cured by Serotherapy. L. Robert and P. S. Balaraksha.

Case of Epidemic Cerebrospinal Meningitis. L. Robert and M. C. Shavara.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

September, 1919, 8, No. 9

*Allowing Parturients to Get up Early. Bourcart (Geneva).—p. 465. Idem. Brouha (Liège).—p. 487.

Allowing Patients to Get Up Early.—Bourcart gives four pages of bibliography, set solid, to sustain the advantages of allowing normal parturients to get up early, as also the patients after operations. The abdominal balance must be restored, however, he says, before patients are allowed to get up. This can be promoted by massage, exercising the

abdominal muscles, to reestablish the normal course of the blood. Vibratory massage below the liver is particularly useful for this. A semiseated position or reclining on the side helps further to hasten conditions which permit getting up. The abdominal massage should be done by the physician; usually four or five minutes twice a day are enough at first in hospital practice. After operations for ileus the manual vibratory massage is very useful, possibly warding off peritonitis. Turning to the prone or knee-chest position is also useful.

Allowing Parturients to Get Up Early.—Brouha insists that the getting up should be individual and progressive. The accoucheur must be the one to decide the question in each case, with the intelligent collaboration of the parturient herself and the nurse. This restricts the method, he admits, to the privileged classes, especially as tradition is all against it, and the family usually combat it and ascribe every mishap to the physician's getting the patient up too early. Working women are more robust and bear without harm the inconvenience of overlong staying in bed.

Bulletin de l'Académie de Médecine, Paris

Nov. 18, 1919, 82, No. 36

General Prophylaxis of Tuberculosis. J. Lignières.—p. 301.

*Pulmonary Mycosis. A. Sartory.—p. 304.

*Intraspinal General Anesthesia. Paul Delmas.—p. 305.

*Mites in Barley. Loir and Legangneux.—p. 308.

*Open Tuberculosis in Dogs and Cats. Gabriel Petit.—p. 310.

*Gas Cysts of the Intestines and Peritoneum. M. Letulle.—p. 315.

Pulmonary Mycosis.—Sartory describes an aspergillus recently cultivated from the sputum of a pulmonary tuberculosis suspect.

Intraspinal General Analgesia.—Delmas states that 600 operations done under his intraspinal technic without a single untoward feature have convinced him of its superiority to other methods whenever general inhalation anesthesia is contraindicated. He dissolves the cocaine cold in the patient's own cerebrospinal fluid, and injects it at once through a needle 7 cm. long by $1\frac{1}{10}$ mm. interior diameter. The analgesia lasts for about an hour (1 cg. = one-fourth hour). He says that the motor and sensory nerves are not touched, and there are no immediate or remote by-effects. The only precaution necessary is that the patient must not sit up for twenty-four hours.

Barley Mite Eruption.—Sixty-three men unloading a cargo of barley, just arrived from the near East, developed in two or three hours a confluent eruption which was traced to an acarus of the pediculoides group. The eruption yielded to treatment for scabies. Six similar epidemics have been recorded at Havre since 1911. Preventive measures should include sulphur fumigation of the vessel hold, and douches, with change of clothing, for the dock workers.

Tuberculosis in Dogs and Cats.—Petit expatiates on the facility with which human tuberculosis is transmitted to dogs and cats, and the danger of infection from those with intestinal, pulmonary and skin discharging lesions. Any dog or cat should be regarded with suspicion when it is growing thin and coughs, or has a diarrhea or persisting ulceration on the face or neck. The pus from these latter lesions in particular swarms with tubercle bacilli.

Gas Cysts in the Intestines.—Letulle describes with seventeen photomicrographs the histopathogenesis in four cases of gas cysts in bowel and peritoneum.

Journal de Médecine de Bordeaux

Nov. 25, 1919, 90, No. 22

*The Electrophysiologic Dissociation of Sensation. A. Le Dantec.—p. 483. Conc'n.

Determination of the Total Acidity of the Gastric Juice. L. and H. Barthe.—p. 499.

Extraction of Projectiles in the Chest. H. L. Rocher.—p. 501.

*The Argyll Robertson Sign. Cabannes.—p. 502.

Electrophysiologic Dissociation of Cutaneous Sensation.—See abstract on page 64, Jan. 3, 1920.

The Argyll Robertson Pupil.—Cabannes declares that this sign may be encountered with any lesion of the centripetal

arm of the pupil reflex, not necessarily of syphilitic origin, or in tabes, or general paralysis.

Paris Médical

Nov. 29, 1919, 9, No. 48

*Opening Lecture of Course on History of Medicine and Surgery. Menetrier.—p. 417.

*Determination of Acidity of Gastric Juice, P. Baufle.—p. 428.

History of Medicine.—Menetrier devotes most of his inaugural lecture to Laennec and the centennial of his work, "L'Auscultation médiate," although auscultation is now usually direct and not "médiate" as he described. Menetrier adds, "As Laennec had been for eighteen years an ardent student of pathologic anatomy, the findings with his new method of exploration explained the lesions to such an extent that he may be called the creator of modern pathology."

Acidity of the Gastric Juice.—Baufle comments on the error resulting from the assumption that the stomach contents obtained after a test meal represent pure gastric secretion. In reality they represent the admixture of gastric juice and what is left of the test meal lingering in the stomach. This admixture varies within a wide range as one or the other of these elements fluctuates, and the proportion of each should be determined. This can be readily accomplished by incorporating with the test meal some substance which does not modify gastric secretion and which is not absorbed by the gastric mucosa. Subtracting the amount of this substance in the stomach contents one hour after taking the test meal, leaves the gastric secretion alone. The substance answering the above conditions may be sodium phosphate (Mathieu and J. C. Roux) or ferric sulphate (Meunier). He prefers the latter. For example, after an Ewald test meal of 340 c.c. extraction of the stomach contents gives 270 c.c. Estimation of the iron in this stomach contents shows that 90 c.c. is what is left of the test meal, and 180 c.c. is the amount of stomach secretion. Applying the Töpfer test this gives 0.584 free hydrochloric acid; 0.146 acid of fermentation; 0.438 combined acid, and total acidity of 1.168 per thousand cubic centimeters. If 180 c.c. of pure gastric juice is found in 270 c.c. of chyme, and 1 c.c. of gastric juice is equal to $\frac{270}{180}$ c.c. of chyme, then 1,000 c.c. is

equal to $\frac{270}{180} \times 1,000 = 1,500$ c.c. The formula is thus A
(acidity) $\times \frac{C \text{ (chyme)}}{S \text{ (gastric juice)}}$ This formula is accurate

enough for all practical purposes, while the technic is so simple, Baufle emphasizes, that it should become a routine procedure.

Presse Médicale, Paris

Nov. 26, 1919, 27, No. 71

*Acute Aseptic Purulent Arthritis. E. Apert and Cambassédès.—p. 713.

*Urobilinuria. Brulé.—p. 714.

Aseptic Purulent Arthritis.—Apert and Cambassédès have encountered two cases in which an acute arthritis of the knee in children seemed to be absolutely aseptic, although puncture brought pus. They cite a third case in which the elbow was the seat of the lesion. Recovery was soon complete and permanent in all. The pus coagulated *en masse*, the fibrin not being destroyed by bacterial action as with ordinary arthritis. The absence of fever—in marked contrast to the swelling of the joint—is also characteristic but is not invariable; in one of the cases there was temperature of 39 C., but a concomitant meningitis was probably responsible for this. Pain occurs only when the joint is very much distended. In one of the children there was no pain, and the arthritis was discovered only by accident during convalescence from scarlet fever. No treatment was attempted in these cases beyond the exploratory puncture, done twice in one case.

Urobilinuria.—Brulé reviews the conflicting views on the origin and clinical significance of urobilinuria. His opinion

is that it signifies retention of bile pigments, but the retention is not intense enough for bilirubin to appear in the urine. This retention may be due to lesions in the liver or biliary passages or to hemolytic processes. He never found urobilinuria in normal subjects. By examining the urine for bile salts, as well as for urobilin, we may throw light on the cause of the retention. With obstruction in the biliary passages, the icterus is never dissociated, while with hemolytic icterus there is always dissociation. With liver disease the retention may be complete or dissociated. There may be retention without jaundice, and urobilinuria may be the only sign to warn that the liver is touched. It should be excluded before accepting a pigmentary acholia. Examination for stercobilin is also important as its absence proves that no bile is passing into the feces even when the stools seem of normal color. A further test of this is to examine the blood dust or the fat in the blood after test ingestion of fat.

Nov. 29, 1919, 27, No. 72

*The Teaching of Obstetrics at Paris. A. Couvelaire.—p. 721.

*Rapid Clinical Tests for Albuminuria and Glycosuria. L. Bauzil.—p. 725.

*Gas Cysts in the Mesentery. Cristol and Porte.—p. 726.

Teaching of Obstetrics at Paris.—Couvelaire reviews the history of the teaching of obstetrics at Paris from the founder of modern obstetrical surgery, the barber-accoucheur, Ambroise Paré (1541) to Tarnier (1857) and the modern school. In conclusion he emphasizes that the science of obstetrics is the science of the generation of man, not merely the science of labor alone.

Tests for Albumin and Sugar in the Urine.—Bauzil describes how he has simplified the technic for these tests so that any practitioner can determine the proportion of albumin and sugar in the urine rapidly and readily with approximate precision.

Gas Cysts in the Abdomen.—Cristol and Porte report a case in which an emergency laparotomy was required for sudden intense abdominal pain and vomiting of bile; pulse 100; the abdomen distended with gas. The dilated stomach reached to the pubis, and puncture released gas and 4 liters of a blackish fluid. The mesentery was found studded with small gas cysts and it had strangulated the bowel close to the pylorus. Almost the entire mesentery was studded with thousands of these pearly cysts of different sizes. The abdomen was merely sutured, but the admission of air seems to have been responsible for the subsidence of the cysts, as there have been no further symptoms since. The woman's health has been apparently perfect during the year to date.

Progrès Médical, Paris

Oct. 18, 1919, 34, No. 42

*Recent Progress in Intestinal Pathology. J. Carles.—p. 413.

Tuberculin and Serotherapy in Pulmonary Tuberculosis. J. Bertier.—p. 416.

Recent Progress in Intestinal Pathology.—Under the heading "Lessons Learned from the War," Carles expatiates on the precision in the differential diagnosis of pathologic conditions in the intestines which is one of the acquisitions from the war. Cultures from the stools, serodiagnosis, rectosigmoidoscopy, analysis of the products of digestion in the stools, determination of the intestinal flora and parasites, and radioscopy—these supplement clinical examination and have become routine procedures. They reveal the nature of the enteritis and whether it is recent or the remote result of some extinct infection which has left merely what he calls a sympathosis or an enteroneuritis.

Nov. 22, 1919, 34, No. 47

*Epiploitis. A. Aimes.—p. 465.

*Retinitis in Diabetics. A. Cantonnet.—p. 468.

Morbid Timidity. R. Benon.—p. 469.

Omentitis.—Aimes reviews the literature on acute and chronic epiploitis, including several publications in THE JOURNAL and large numbers of theses.

Retinitis in Diabetics.—Cantonnet comments on the frequent coincidence of chronic nephritis and diabetes, and the

predominance of the symptoms of one or the other. In Onfray's twenty-four cases of retinitis in diabetics, the kidneys were apparently normal in 20 per cent. while in 50 per cent. there was evidence of incipient Bright's disease, and in 20 per cent. there was azotemia. An exact diagnosis is a guide to effectual treatment.

Nov. 29, 1919, 34, No. 48

- *The Blood Pressure in Psychoses. J. Euzière and J. Margat.—p. 477.
*The Sacro-Iliac Articulation. R. Pilatte and H. Vignes.—p. 479.
Sodium Bromid in Pathologic Conditions in the Digestive and Circulatory Apparatus. P. M. Besse and P. Goutzait.—p. 483.

The Blood Pressure in Psychoses.—Euzière and Margat refer to what they call anxious states in persons without organic lesions. The arterial pressure is often high, rising proportionally to the feeling of distress. Sympathicotony is evident in the more pronounced cases, and this readily explains the high arterial tension by vasoconstriction.

The Sacro-Iliac Articulation.—Pilatte and Vignes discuss the anatomy and physiology of this articulation, and the interpretation of symptoms in case of pathologic changes.

Revue Franç. de Gynécologie et d'Obstét., Paris

September, 1919, 14, No. 9

- *Ovarian Cysts in the Newly Born. P. Gaifami (Rome).—p. 345.

Ovarian Cysts in the Newly Born.—Gaifami's illustrations show the large ovarian cysts in the three infants. They had all died during or soon after birth.

Anales de la Facultad de Medicina, Montevideo

July-August, 1919, 4, No. 7-8

- *Hypertension. H. Vaquez.—p. 421.
*The Cerebrospinal Fluid in Differential Diagnosis. G. Aráoz Alfaro.—p. 469.
*Epinephrin in Treatment of Asthma. Octavio Maira.—p. 515.
*Early Diagnosis of Gastric and Duodenal Ulcer. H. García Lagos.—p. 532.
Influenzal Pneumonia. A. Ricaldoni.—p. 553.

Hypertension.—Vaquez defines hypertension as a blood pressure above 150 or 160 in men and 140 or 150 in women. Age in itself does not entail hypertension; he has one woman patient who is almost a centenarian but her blood pressure keeps below 140. The most effectual remedy for paroxysmal hypertension, he reiterates, is venesection; this permanently reduces the pressure if 700 or 800 gm. of blood are withdrawn. Lumbar puncture has sometimes given good results in treatment of the intense headache from hypertension, but he shares Osler's skepticism in respect to the action of drugs except in transient emergencies.

The Cerebrospinal Fluid in Differential Diagnosis.—Aráoz enumerates the characteristic findings in the fluid in different pathologic conditions and especially in meningeal states of doubtful origin. In one child the somewhat sudden onset of what seemed to be tuberculous meningitis and the early semiunconsciousness suggested a doubt, and under mercurial treatment recovery was soon complete. It was learned later that the father was syphilitic. Another child developed the symptoms of tuberculous meningitis but the lumbar puncture fluid showed high proportions of albumin and urea, and the child improved under treatment to such a degree that the diagnosis was rendered uncertain. The urine and eye findings were normal. Two weeks later the headache returned with convulsions, and the puncture fluid then showed 7.4 per thousand chlorids and 3.45 urea, and necropsy disclosed tuberculous pyelonephritis but no meningeal lesions. Otitis is often misleading, but the lumbar puncture fluid will exclude meningitis, and when the ears are drained the meningeal symptoms may subside.

Epinephrin in Asthma.—Maira reiterates that many years of experience have convinced him that epinephrin is the treatment *par excellence* for combating attacks of asthma. These patients stand large doses. One had suffered from asthma for fifteen years when subcutaneous injections of epinephrin were begun in 1914, with prompt relief for several hours. The dose was 15 drops, and it was repeated twice

and sometimes three or four times a day. This has been kept up for five years, with more than 300 injections, and no by-effects have been observed. Maira has seen nothing to indicate that epinephrin brings on arteriosclerosis when given by subcutaneous or intramuscular injection. The latter is preferable when rapid action is desired. He has obtained good results with it also in whooping cough.

Early Diagnosis of Gastric and Duodenal Ulcers.—García emphasizes that it is the succession of the symptoms, their occurrence through weeks, their connection with the meals, and the possible remissions—up to ten years in one of his cases—that give the clue before the classic triad of symptoms of ulcer develop. The symptoms differ in different patients but the attacks in the same patient are almost all alike.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

August, 1919, 32, No. 8

- *Treatment of Epidemic Poliomyelitis. F. Vidal Solares and J. F. Ayguavives.—p. 177.
*Acute Rheumatism in Children. Joaquín Puchades.—p. 188.

Treatment of Epidemic Poliomyelitis.—Vidal and Ayguavives wait for the acute phase to be over, and then give hypodermic injections of strychnin plus application of electricity. This seems to ward off the atrophy of the muscles. They test the child's susceptibility to the strychnin with 0.25 mg. first. If this does not induce trismus, they increase by the same amount until the child is getting 1 mg. in this way, which is kept up for five days. At the seventh day they give 0.5 mg. and increase in a week to 1.5 mg. This is kept up for ten days if no signs of intoxication are evident. At the twenty-third day the drug is suspended for two weeks but the electric sittings and massage are continued. It is then resumed. Two cases are described. One child of 3 is now walking well after 125 injections of the strychnin; the other child of not quite 2 shows great tendency to improvement after six months of the faradic current, then, after this, galvanic sittings, and the injections of strychnin.

Acute Rheumatism in Children.—Puchades comments on Langmead's examination of 2,556 schoolchildren at London for signs of rheumatism. The findings were positive in 5.20 per cent. of all the children, and 87 per cent. with positive findings had some heart lesion, although all of the children examined were supposedly healthy, and no precautions to guard the heart were being taken. Hence Puchades emphasizes that rheumatism is far more prevalent among children than is generally recognized, and that when a child has acute rheumatism, repose afterward should be enforced for a much longer period than the stay in the public hospital. The child should not be allowed to go home as soon as the acute phase is past as the heart may become irreparably damaged, if further repose is not enforced. The rheumatism may develop insidiously and not be recognized in time to ward off damage by appropriate treatment. Medical school inspectors should be on the alert to detect the disease in its incipency.

Gaceta Médica de Caracas

Sept. 30, 1919, 26, No. 18

- *Appendicitis. L. Razetti.—p. 187.
Hydatid Cysts in Venezuela. F. A. Risquez and others.—p. 190.
Importance of Elimination in Therapeutics. F. A. Rizquez.—p. 192.

Appendicitis.—Razetti remarks that acute appendicitis is extremely rare in Venezuela while chronic appendicitis is very common. He describes his mode of procedure in such cases.

Medicina Ibero, Madrid

Nov. 15, 1919, 9, No. 106

- *Albee's Operation in Pott's Disease. T. R. de Mata.—p. 117.
Prophylaxis of Tuberculosis on Ships. Medardo Rivera.—p. 123.

Albee's Operation for Vertebral Tuberculosis.—De Mata is convinced that the implant made according to Albee's technic heals in place just as a simple fracture of a long bone heals. His roentgenograms have confirmed this, as also his clinical experience. The Albee method seems better adapted for the poor. For those who can spare the time, he prefers heliotherapy and other medical measures, although

his experience with it in thirty-five cases has been absolutely favorable. The interval since has been over four months in thirty of the cases. One man required a new operation six months later as the implant had fractured at the vertex of the kyphosis. The broken off fragment had become necrotic, but all the rest formed a solid living whole with the spine, and a second small implant restored clinically normal conditions. The reappearance of pain testifies to fracture of the implant. Two of his patients had paraplegia from compression, and this has not been modified in any way by the implant. The article is illustrated.

Prensa Médica Argentina, Buenos Aires

Oct. 20, 1919, 6, No. 14

- *Action of Snake Venom on Coagulation of the Blood. B. A. Houssay and A. Sordelli.—p. 133.
Chorea. Camilo Muniagurria.—p. 133. To be cont'd.
Tuberculin Inunctions in Prophylaxis of Tuberculosis. S. de Madrid.—p. 139.
The Arrhythmias. P. M. Barlaro.—p. 140. Cont'n.

Action of Snake Venom on Coagulation of the Blood.—In the course of their years of research on snake venoms, Houssay and Sordelli found that all of the twenty-two venoms investigated destroyed the cytozym in the blood, that is, the substance which combines with the serozym and calcium to form thrombin. With the cytozym destroyed, no thrombin can form, and hence there can be no coagulation. This is the case with cobra and certain other venoms, but the lachesis and crotalus venoms (Argentine species) possess a special coagulating property which coagulates even citrated blood. Their research has demonstrated further an extremely active precipitation of fibrin under these latter circumstances, as if to protect the erythrocytes with a varnish of fibrin against the active coagulating agent circulating in the blood. This protecting mechanism of temporary defibrination is interesting from the standpoint of the phenomena of immunity, they add.

Revista Española de Medicina y Cirugía, Barcelona

October, 1919, 2, No. 16

- *Pregnancy in Double Uterus. Alvaro Esquerdo.—p. 533.
*Preventive Vaccination Against Influenza. A. Salvat.—p. 538.
Spontaneous Rupture of the Aorta. A. Aguilar Feliu.—p. 542.
*Drainage of the Bile Ducts. E. Ribas y Ribas.—p. 546.

Pregnancy in Double Uterus.—Alvaro Esquerdo's patient had pains in the lower abdomen after an apparently normal rapid delivery, and a tumor was palpated. It was assumed to be a large fibroma until puncture a month later released thick black blood, and the diagnosis was changed to sarcoma. The laparotomy revealed accumulation of blood in the right half of a double uterus and prompt recovery followed panhysterectomy. He has encountered a number of cases of double uterus with hematometra, once in a virgin. With anomalies of this kind there are usually other malformations, so that panhysterectomy is generally advisable on account of the special tendency to complications. However, he adds, if the hematometra in the double uterus can be correctly diagnosed and amply drained without operative intervention, this might be tried to begin with.

Preventive Vaccination Against Influenza.—Salvat published in 1918 his successful vaccination of 4,900 Spanish subjects none of whom developed fatal influenza thereafter, but five had severe complications in a group of fifty English subjects vaccinated at the same time. He theorizes to explain this difference in the two groups, and claims priority for this prophylactic vaccination to ward off grave complications.

Drainage of Bile Ducts.—Ribas analyzes his 118 gallstone operations, and commends his practice of draining whenever the symptoms seem to come from the gallbladder alone, unless there is merely one gallstone.

Revista Española de Obstet. y Ginecología, Madrid

July, 1919, 4, No. 43

- *Cancer of the Mamma. Victor Conill.—p. 289.
Trophio Function of the Connective Tissue of the Ovum. M. Sánchez y Sánchez.—p. 293.
Histology of Mucosa in Endometritis. A. Mora and C. Gil.—p. 296.

Cancer of the Mamma.—Conill describes and commends his method of systematic roentgen, radium and chemical treatment applied after excision of a cancer of the breast. The colloidal metals by intravenous injection multiply the action of the radiotherapy as the particles of metal become foci for secondary radiation.

August, 1919, 4, No. 44

- *Manikin to Demonstrate Mechanism of Delivery. J. A. Beruti (Buenos Aires).—p. 337.
*Microbiologic Action of Roentgen Rays. J. M. Vilaplana.—p. 346.
Roentgen Treatment of Uterine Myomas. P. González Duarte.—p. 352.

Obstetric Manikin.—Beruti gives ten illustrations of his obstetric machine which reproduces the mechanism of delivery.

Microbiologic Action of Roentgen Rays.—Vilaplana's histologic research was restricted to female genital organs, human and guinea-pig ovaries, and cancerous cervix tissue, before and after raying. The cancer cells pass rapidly through three phases, first the enlargement of the cells, then their degeneration, without karyokinesis. The degenerative cycle is exceptionally rapid and tenacious. Sarcoma cells are destroyed so rapidly that large amounts of toxins are poured out and may do great damage. In one case of uterine myoma the reaction to raying was so severe that the patient insisted on hysterectomy instead, and the microscope disclosed sarcoma nodules in the fibroma.

Revista de Gyn., d'Obstet. e de Pediat., Rio de Janeiro

August, 1919, 13, No. 8

- Obstetric Manikin. J. A. Beruti (Buenos Aires).—p. 231. See above.
*Pregnancy Pyelitis. J. Adeodato.—p. 245.

Pregnancy Pyelitis.—Adeodato reports four cases from his service at Bahia during the last eight years, but he is convinced that routine microscopic examination of the urine would reveal that pyelitis is far more common than generally supposed. Even when fever and pains attract attention they are liable to be attributed to other causes, and as the pyelitis is generally thrown off after delivery, it escapes detection. In two of his cases the disturbances had been ascribed to malaria, and the patient was about to be stuffed with quinin when the microscope revealed the true state of the matter. If the pyelitis is not recognized, it may become aggravated by treatment on a mistaken basis, and be forced into a chronic phase or at least into conditions favoring return at each pregnancy.

Revista Medico-Cirurgica do Brazil, Rio de Janeiro

July, 1919, 27, No. 7

- *Blocking the Nerves for Operations on the Limbs. Alvaro de Figueiredo Guíão.—p. 231.

Blocking the Nerves for Operations on the Limbs.—Alvaro de Figueiredo gives minute directions for blocking the various trunk nerves, and states that in his experience healing afterward was normal and there was no special tendency to nervous disturbances. The great drawback to local anesthesia is the dread and worry from the sight of the operation, but two or three whiffs of ether put an end to this. He gives the details of ten cases to demonstrate the great advantages of regional anesthesia for both children and adults.

August, 1919, 27, No. 8

- *Isolation of Lepers. E. Rabello and Silva Araujo, Jr.—p. 271.
*Hemorrhagic Purpura. Cardoso Fonte.—p. 281.

Isolation of Lepers.—This is a committee report on the question whether it is advisable to leave lepers in their homes under special surveillance or to segregate them. In Norway both systems have been followed, the report states, and the number of lepers has dropped from 3,000 to 285 in fifty-seven years. But analysis of these statistics shows that the decline closely parallels the increasing numbers of cases that were isolated. In Norway, besides, the central government has control over the whole country, and uniform measures of surveillance could be applied. The report emphasizes that conditions in Brazil are very different from this, no uniformity in the twenty different states of Brazil being pos-

sible under existing conditions. Hence segregation is the only practicable system for prophylaxis of leprosy. But the committee urges that the leper colonies should be attractive and easy of access to the lepers' friends.

Hemorrhagic Purpura.—Cardoso relates that the first of his two recent patients with hemorrhagic purpura was a man of 31. This is the only case in his experience with recovery after hematuria. The second case was in an infant, 6 days old, and the child died in a week, notwithstanding energetic treatment. Other members of the family showed signs of inherited syphilis, and specific treatment had been pushed but the child succumbed before its effect had had time to become manifest.

Revista de Medicina y Cirujía, Caracas

May 31, 1919, 2, No. 14

*Urinary Calculi. J. B. Ascanio-Rodriguez.—p. 293.

*Syphilitic Disease of the Heart. Ignacio Benitez.—p. 301.

*Acute Pulmonary Edema. B. Perdomo Hurtado.—p. 308.

*Ocular Hyperemia and Menstruation. J. M. Espino.—p. 311.

Urine Factors in Pathogenesis of Calculi.—Ascanio-Rodriguez insists that urinary calculi require certain conditions for their development: The urine has to be alkaline before phosphate concretions can form; and it has to be extremely acid for urate concretions. He refers further to the hyperacidity of the soil and the hypo-acidity of the excretions in the uric acid diathesis, while the reverse is the rule in conditions such as scrofula. By modifying the reaction of the urine, therefore, conditions are brought about which directly favor or annul the tendency to formation of concretions, and aid in the dissolving of the concretions already formed. Analysis of the urine is the guide, and will warn of incipient lithiasis in time to ward it off. He gives no details of treatment along the lines he thus suggests.

Syphilitic Disease of the Heart.—Benitez describes the pathologic anatomy of syphilitic lesions in the heart, saying that the coronaries usually feel the effect first.

Ocular Hyperemia and Menstruation.—Espino describes the case of a healthy married woman of 28 who for the last three years has had severe congestion in one or both eyes just preceding and during her menstrual periods, and never at any other time. There is slight photophobia but no pain, secretion or lachrimation.

Revista de Medicina y Cirugía, Havana

Oct. 10, 1919, 24, No. 19

*Mixed Tumors of Salivary Glands. Elpidio Stincer.—p. 477.

*Asthma in Child. M. A. de Villiers.—p. 481.

Tumors of Salivary Glands.—Elpidio Stincer reviews his experience with 9 mixed tumors of the salivary glands. In 4 there was sarcomatous tissue and one was of endothelial nature mostly; 2 were adenocarcinomas. All but 2 were in the parotid gland, and all were on the right side. The duration of three to thirteen years suggests the mixed type; cases of ten, twenty and thirty years' standing have been recorded. These tumors are generally encapsulated and recurrence need not be feared when removed early.

Asthma in Child.—The girl of 9 was of the lymphatic temperament, but healthy, and she had a severe attack of asthma for the first time last July. It lasted for two days and then subsided without leaving a trace. In August, after exposure to rain, intense asthma developed, with severe cardiovascular complications, weak and rapid pulse, cyanosis and extreme prostration. Epinephrin, camphorated oil, revulsion with mustard baths, etc., finally reduced the severity of the symptoms, and the temperature which had gone up during the lay returned to normal and by the third day from the exposure there were no further symptoms. The child has had no return of them since.

Revista de Medicina y Cirugía Prácticas, Madrid

October, 1919, 125, Nos. 1573-1576

Salpingitis and Neoplasms with Prolapse of the Uterus. Alvaro Esquerdo.—p. 5.

Technic for Administration of Digitalis. A. Espina.—p. 81. Conc'n.

Progressive Muscular Atrophy. R. del Valle y Aldabalde.—p. 122.

Salpingitis and Neoplasms with Prolapse of the Uterus.—Alvaro Esquerdo has had two cases in which gangrene developed in the prolapsed uterus and part of the vaginal walls; in one of the cases he succeeded in arresting the gangrene, with recovery, but the other woman died from peritonitis. In three other cases the prolapse was strangulated, but reduction proved possible in time. He warns against attempting a vaginal operation if there is any question of complicating salpingitis or tumor. For one reason, because removing the uterus would open the way for hernia of intestines. Another reason against it is the risk of hemorrhage from the inflamed and congested tissues. A third reason is the danger of cutting the bladder, rectum, or ureters as these organs are pulled out of their normal places. The suppurating adnexa can be drained by posterior colpotomy, but conditions otherwise should be corrected by way of the abdomen. Subtotal hysterectomy is preferable for obvious reasons, he reiterates.

Digitalis.—In this study of the technic for administering digitalis, Espina remarks that the most difficult point is to know when and how to stop it. The urine and the pulse form the gage for this. He advises to give digitalis only with the finger on the pulse, the ear over the heart, and watching the patient's aspect.

Progressive Muscular Atrophy.—Del Valle reports pronounced improvement in the case of progressive muscular atrophy in a man of 46 under electricity and hot sand baths twice a day. The best results were noted when the sand bath just preceded the faradization. The impotence of the hands from the muscular atrophy retrogressed under this mixed treatment in five months to such a degree that further treatment was not required. He was a workingman, and the first symptoms had been noted three years before. Repeated chilling of the hands was the only causal factor that could be discovered, and this suggested the advisability of the hot sand baths. The advantages of the sand bath are the unusually high temperature that can be used, the fact that perspiration can proceed unhindered, and that there is no maceration of the skin. No benefit was apparent from a course of strychnin, and it was abandoned.

Revista Médica del Uruguay, Montevideo

August, 1919, 22, No. 8

*Gouty Rheumatism. Carlos Butler.—p. 579.

*Puerperal Thrombophlebitis. J. M. Estapé and Collazo.—p. 589.

*Spontaneous Rupture of Uterus at Term. A. Curbelo Larrosa and H. García San Martín.—p. 615.

*Gold Reaction in General Paralysis. A. Prunell.—p. 620.

*Herpes Zoster. J. Servetti Larraya.—p. 635.

*Slow Pulse with Appendicitis. Carlos Stajano.—p. 640.

*Temporary Tubal Sterilization. Augusto Turenne.—p. 645.

Gouty Rheumatism.—Butler's patient is a well-to-do man of 55 with rheumatism in the shoulders which yielded to potassium iodid and dieting. For some years there had been pains in the sacrum and the roentgen rays revealed a huge tophus. There were also small tophi in other bones and joints, confirming the case as one of gouty rheumatism. In true rheumatism the condensing osteitis casts a heavier shadow than normal, while in gouty rheumatism the shadow of the tophi is much lighter than usual, the urates which have taken the place of the calcium salts being comparatively translucent. The apparent loss of substance in the sacrum measured 6.5 by 7 cm.

Puerperal Thrombophlebitis.—Estapé and Collazo comment on the difference in the prognosis according as the thrombophlebitis is of septic or aseptic nature. All parturients should be systematically examined for any rise in the rectal temperature and for any signs of phlebitis in the genital sphere, while the pulse should be taken every eight hours. When the rectal temperature runs up in waves but no cord can be palpated in the pelvis, although the pulse shows steps of acceleration and there are chills and other symptoms of thrombophlebitis and even of phlegmasia alba dolens, the phlebitis is probably located in muscle or the viscera at some distance. When the cord can be palpated in addition, septic puerperal thrombophlebitis is probable and the outlook is grave on account of complications unless a ligature is applied

early. An aseptic phlebitis does not have the rise in the rectal temperature although the pelvic cord, the pulse, varices and the atony of the uterus are otherwise the same, but the prognosis is benign. The progressive septic form has, in addition, slight edema and formication in the members. The outlook is grave with this, even after the ligature. The complications may be biologic from infection of the thrombus, or mechanical from its extension or fragmentation. They give the details of three cases; in two there was double phlegmasia alba dolens and one of these women was left with complete functional impotence of the legs. The septic uteropelvic thrombophlebitis was confirmed by the laparotomy, and ligation of the hypogastric vein on both sides and also of the utero-ovarian vein on the left side arrested the process. The first symptoms had been noted twenty-two days before the operation, but there was no fever for the first ten days, and then only transiently.

Rupture of Uterus at Term.—The rupture was spontaneous and longitudinal but it caused no characteristic symptoms and was only casually discovered. Immediate abdominal cesarean section and subtotal hysterectomy were followed by prompt recovery.

The Colloidal Gold Reaction in the Spinal Fluid.—Prunell analyzes the findings with Lange's reaction in forty-five cases. They were constantly negative in normal cerebrospinal fluid and also in nervous pathologic conditions other than syphilitic, while with general paresis the curve was constantly between 555555 and 455431.

Electric Treatment of Herpes Zoster.—Servetti reports the prompt attenuation of the pain and the disappearance of the eruption in the two cases in which he applied the galvanic current to the region. The positive electrode was placed on the vesicles of the eruption and the negative electrode over the emerging point of the posterior roots of the fourth and fifth intercostal nerves of the right side, increasing from ten to twenty milliamperes, the sitting lasting from twenty-five to thirty minutes daily. The pain was relieved by the first sitting, and the cure was complete by the fifth.

Slow Pulse and Appendicitis.—Stajano emphasizes that in children a slow pulse is a favorable sign as it does not appear until the process is retrogressing. It is followed by progressive improvement. It is rarely observed in adults, and its significance varies in adults.

Temporary Tubal Sterilization.—Turenne has operated in four cases by suturing the fimbriated extremity of the fallopian tube in a bed made for it through an incision 15 or 20 mm. long in the anterior layer of the broad ligament. This leaves the tube freely movable, and does not kink it. Conception can be rendered possible again at any time by a short incision in the tube lower down, and suturing the lips of the incision to the ovary.

Semana Médica, Buenos Aires

Sept. 4, 1919, 26, No. 36

- *Bacteriology of Influenza. J. Destéfano and J. W. Tobías.—p. 249.
- *Cyst of the Iris. E. B. Demaria.—p. 266.
- Treatment of Influenza. Ricardo Colón.—p. 270.
- *Internal Genital Aplasia. D. A. Rojas.—p. 271.
- Epithelioma of Upper Jaw. R. Becco.—p. 276.
- Intravenous Sugar Treatment of Tuberculosis. V. Delfino.—p. 278.
- *Pregnancy Asthma. M. Ruibal Salaberry.—p. 278.
- Influenza. Luis Lancelotti.—p. 281.

Bacteriology of Influenza.—Destéfano and Tobías conclude their seventeen page review of the data on record to date by accepting a filtrable virus as the primary cause of influenza.

Cyst in the Iris.—The spontaneous serous cyst in the iris in the case of which an illustrated description is given subsided under bipolar electrolysis.

Atresia of the Vagina.—Rojas explains that atresia of the vagina and internal genital organs generally includes lack of the ovaries also. When there is atresia of the vagina and a rudimentary uterus, there is usually a tendency to menstruation. If the uterus and ovaries are well developed, along with atresia of the vagina, retention of the menstrual flow causes severe disturbances. When an artificial vagina

has to be provided, the Baldwin or Abbott method seems preferable as a rule.

Pregnancy Asthma.—Ruibal Salaberry has encountered four cases of pregnancy asthma during the last four years, and he found albumin in the urine and no chlorids as special features of this type of asthma. The farther advanced the pregnancy, the severer the asthma, the greater the retention of chlorids and the more intense the albuminuria and the edema, and the woman weighs more to correspond. The asthma is thus a manifestation of toxic chlorid retention. Treatment to promote elimination of chlorids and prevent their ingestion—that is, theobromin and restriction to water and milk—soon arrests the tendency to asthma.

Sept. 11, 1919, 26, No. 37

- McDonagh's Works on Biology of Venereal Diseases. C. Pillado Matheu.—p. 285.
- *Ossification in Laparotomy Incision. A. and A. Gutiérrez.—p. 296.
- *Tuberculin in Treatment and Prophylaxis of Tuberculosis. F. Gómez Alvarez.—p. 298.
- Modified Lambotte Plate and Screws. J. C. Labat.—p. 304.
- Influence of Alcohol as Factor in Tuberculosis. V. Delfino.—p. 306.

Bone Formation in Laparotomy Incision.—Gutiérrez removed the gallbladder through a transverse incision in July, 1917. In May, 1918, the woman returned, complaining of a bulging of the laparotomy cicatrix and some pain in it. The old cicatrix was incised and a bony formation extracted, corresponding to the shape of the cicatrix, with no contact with the ribs. The microscope showed the structure of true bone; the aspect was much like that of a rib.

Tuberculin Treatment of Tuberculosis.—Gómez Alvarez reiterates the advantages of extreme dilution of tuberculin for systematic treatment of tuberculosis. He calls this extremely diluted tuberculin "bacillin," and relates his surprise when infinitely better results were obtained with a much weaker dilution than the one he had been using. Further experience, he declares, and study of the classified card records of his cases have confirmed more and more the correctness of his premises and his methods.

Archiv für Kinderheilkunde, Stuttgart

Nov. 30, 1918, 67, No. 1-2

- *Acute Lymphatic Leukemia in Infants. E. Tancre.—p. 7.
- *The Weight and the Resistance to Infection. F. Stickler.—p. 15.
- Congenital Atresia of the Isthmus of the Aorta and Mitral Stenosis in Girl of Five. H. Bergmann.—p. 44.
- *Individual Isolation as Factor in Prophylaxis of Infections in Institutions. D. A. Sokolow.—p. 56.

Leukemia in Infant.—The acute lymphatic leukemia had developed in an apparently healthy male infant after a suppurating process at the umbilicus at the age of one month. Necropsy at 4 months revealed intense lymphoid proliferation in all the organs and that all the glands were slightly enlarged although they could not be palpated during life. The skin never showed ecchymoses and suffusions and the case was exceptional further in that no leukocytes but lymphocytes were found in the blood.

Weight and Resistance to Infection.—Stickler analyzes 200 cases of scarlet fever and 500 of diphtheria, recording the severity of the infection and the child's weight in proportion to its height and to the standard weight for its age. The findings were in favor of the thin children, the course and outcome of the diseases being on the whole somewhat more favorable in the children below the average weight.

Individual Isolation in Hospitals.—This long and illustrated article by Sokolow was read at the All-Russian Pediatric Congress in 1912.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 6, 1919, 49, No. 45

- *Sudden Death in Heart Disease. Walter Frey.—p. 1689.
- *Lethargic Encephalitis in Switzerland. G. Müller-Bergalonne.—p. 1695.
- *Raying after Removal of Cancers. Max Steiger.—p. 1704.

Sudden Death in Heart Disease.—Frey disputes Hering's assertion that auricular fibrillation is the cause of sudden death. This, he asserts, is incapable of causing the sudden arrest of both heart action and respiration which is characteristic of this "seconds-heart death," as it is called when only a few seconds elapse between the first symptoms and

leath. He presents arguments to sustain the assumption of a nervous shock affecting functionally the closely connected centers of respiration and circulation. With heart disease, the regulating mechanism for these centers is in an abnormally excitable state, so that there is an excessive reaction to even normal stimuli. He describes how a stimulus emanating from the heart itself may act on these centers, and thus, arrest by reflex action both the heart and respiratory functioning. Intracardial increase in pressure may be an important factor in this. Physical exertion is frequently the determining factor; or sudden failure of the contracting power. The latter is witnessed in the sudden death in diphtheria, the relaxation of the heart muscle setting up the reflex inhibition of heart and respiration.

Lethargic Encephalitis.—The case described is said to be the first one of epidemic lethargic encephalitis encountered in Switzerland, but four others have been observed since in the same town (Geneva). The patient was a woman of 28 and the symptoms indicated tuberculous meningitis at first. Necropsy revealed a primary microscopic acute poliomyelitis.

Raying After Removal of Cancer.—Steiger reviews the experiences with cancer at the university clinic for women's diseases at Bern before and during the four years since roentgen exposures after removal of the cancer have been the routine procedure. In a series of 148 cases 1908-1913, only 13 per cent. have been practically cured to date. The survival averaged 12.2 months but the corresponding survivals in the later, rayed series averaged 18.3 months. Fully 50 per cent. of the nonrayed series died and only 4.3 per cent. of the rayed in corresponding periods of time. These and other data confirm the decidedly favorable influence of roentgen exposures after removal of the cancer, and as the technique is being improved, constantly better results are being realized.

Nov. 13, 1919, 49, No. 46

Otogenous Osteomyelitis in Children. F. Siebenmann.—p. 1737.
The Declining Birth Rate. H. Hunziker.—p. 1741.

Fulminant Otogenous Osteomyelitis in Children.—Siebenmann refers to the acute otogenous osteomyelitis of the temporal bone or other bones of the skull, of which he has encountered seven cases, all but one in girls. There had been preceding chronic otitis media in only one case. The onset was stormy in the midst of apparent health or infectious sore throat or bronchitis, with intense earache and high fever, continuous or of a pyemic type. All his seven patients died between the ninth and sixteenth days. Even an early operation in such cases shows places where the destructive process seems to have skipped these points to attack points beyond, but this does not imply a blood-borne origin. The skeleton outside of the immediate region was not involved. Operative measures in his cases were unable to ward off the fatal pyemia, although the focus was excised apparently into sound tissue the fourth or fifth up to the ninth day.

The Declining Birth Rate.—Hunziker's charts show that the birth rate in Switzerland has long been gradually declining, but the drop has been steeper since 1914. Even in 1911, only Spain, Belgium, Ireland, and France had a smaller excess of births over deaths among the twenty-one states in Europe. In Basel the birth rate per thousand was 18.37 in 1914 but only 12.7 in 1917. Hunziker comments that the gravest danger from the declining birth rate is that birth control is not practiced by the feeble-minded, the drinkers, the idlers and other inferior elements. They breed out of all proportion to the better elements of society. He adds that Greece and Rome owe their fall to the lack of production of new generations of members for the leading classes.

Therapeutische Monatshefte, Berlin

August, 1919, 33, No. 8

Treatment of Wounds from Pharmacologic Standpoint. III. L. Loewe and G. Magnus.—p. 281.—To be cont'd.
Treatment of Malaria with Intestinal Complications. H. Wörner.—p. 287.
Floating Kidney and Its Treatment by a System of Gymnastic Exercises. J. Oldevig.—p. 292. Conc'n.
Influence of Fat-Poor Food on Cholelithiasis. Kirschner.—p. 300; Idem. W. N. Clemm.—p. 302.

Malaria with Intestinal Complication.—Wörner reports considerable experimental and clinical experiences which demonstrated that the elimination of quinin by way of the feces continues for three or four days almost the same whether the intestines are sound or there is dysentery. Hence with dysentery the quinin can be given by the mouth if desired. But with profuse diarrhea, suggesting disease of the small intestine, there seems to be an exaggerated elimination of the quinin through the stools. Consequently parenteral injection of the quinin is preferable under these conditions. The dose of quinin in the cases ranged from 1.2 to 2 gm., given in half gram doses at hourly intervals.

Fat-Poor Diet Invites Gallstone Disease.—Clemm is convinced that a diet with plenty of fat is less liable to be accompanied with gallstones than a fat-poor diet. He remarks that cholelithiasis seems to have become much more prevalent in the last two years.

October, 1919, 33, No. 10

*Present Status of Intralumbar Therapy Exclusive of Serotherapy. G. Neumann.—p. 369.

*Sterility of Women and Possibility of Therapeutic Aid. A. Sippel.—p. 374.

*Therapeutic Value of Puncture of the Brain. B. Paetsch.—p. 382.
Subcutaneous Administration of Quinin to Children. R. Lange.—p. 384.

Scopolia Poisoning; Two Cases. A. Heffter.—p. 387.

Intraspinal Treatment Exclusive of Serotherapy.—Neumann reviews the present status of intralumbar therapy with physiologic salines, tuberculin, magnesium sulphate, silver salts and ethyl-hydrocuprein. The consensus of opinion in regard to the latter, she says, seems to be favorable. No untoward by-effects were observed in the experience of several, but Landsberger had paralysis of the bladder develop in several of his cases which, although transient, compelled the suspension of the treatment. The indications for it were pneumococcus and meningococcus meningitis.

Treatment of Sterility.—Sippel describes various measures that might be used for correction of mechanical obstacles to the passage of the ovum or spermatozoa into the uterus. A suppurating catarrhal condition in the cervix may impede conception, and disease of the endometrium may prevent the embedding of the ovum. When the fimbriated extremity of the tube has become obstructed, he advises to resect the distal end of the tube and overcast the raw edges with fine catgut to hold the lumen open. Unsuccessful attempts at artificial sterilization have demonstrated that conception is possible with only a fragment of the tube. In conclusion he discusses artificial fertilization, and what he calls war pregnancies, that is, when women who have long lived in sterile wedlock conceive when their soldier husband returns home on a furlough after a long absence. Among the factors which might explain this are the thinness of the women from the war diet restrictions and the chance for any genital inflammatory processes to have healed. We must remember, however, that even when one element is corrected, there may be other inhibiting factors at work.

Puncture of the Brain.—Paetsch comments on the fact that so few think of puncturing the brain for diagnostic and still fewer for therapeutic purposes. He insists that it is much less of an operation to puncture the brain than it is to trephine the skull, and he reports several cases to illustrate the great therapeutic value of the simple procedure. In one case puncture released 35 c.c. of fluid blood and the paresis of the left arm and leg retrogressed. The puncture had been made between the arm and leg centers and the puncture was repeated ten days later at the same point on account of the persistence of headache, choked disk and pulse of 50 or 60. About 36 c.c. of thick blood containing methemoglobin was evacuated and there has been no further trouble since. A tendency to unconsciousness, pulse 40, and frontal headache had been the only symptoms at first, coming on two weeks after a fall. In another case a girl fell down stairs and was unconscious for five days notwithstanding early puncture of the brain. Then the motor region in the other hemisphere was punctured and 56 c.c. of old fluid blood was evacuated from beneath the dura. The condition improved but recovery was not complete until after

another puncture which released merely cerebral fluid. No local symptoms had been evident at any time and the surgeon would not have known where to trephine, while the puncture answered every purpose and undoubtedly saved the child's life. One man presented the symptoms of a brain tumor in 1903 but it could not be localized. Puncture of the right and left frontal lobes and the right cerebellum gave no relief, but puncture of the left cerebellum released 40 c.c. of an amber fluid and all disturbances subsided. They returned again after a few months and again after intervals up to eight years, but each time puncture in the same region seemed to drain the presumed cyst, and all the disturbances disappeared. Paetsch has had two similar cases in wounded soldiers in which each time recovery followed puncture of the brain.

Zeitschrift für Geburtshilfe und Gynäk., Stuttgart

Jan. 25, 1919, 81, No. 1

*Pregnancy Kidney. K. Eckelt.—p. 1.

*Contracted Pelvis. A. Heyn.—p. 30.

*Toxic Meningitis After Lumbar Anesthesia. E. Bracht.—p. 61.

*The Question of Diabetes and Pregnancy. E. Reinhardt.—p. 81.

*Injury of Bladder During Delivery with Contracted Pelvis. E. Reinhardt.—p. 98.

*Cancer of the Clitoris. R. Ederle.—p. 110.

*Osteomalacia. E. Scipiades.—p. 156.

Genesis of Symptoms of "Pregnancy Kidney."—Eckelt reiterates that tests of kidney functioning have conclusively demonstrated that there is no insufficiency of the kidneys with the congested kidney of the albuminuria of pregnancy, and hence its cause must be sought elsewhere than in the kidneys. The dropsy, the hypertony and the visual disturbances which we encounter in the pregnant are to be regarded as independent morbid phenomena for which the gestation process is responsible. They are pregnancy toxicoses like eclampsia, albuminuria, uncontrollable vomiting, etc. In none of the cases on record of the alleged evolution of pregnancy kidney into chronic nephritis is the proof convincing, preexisting kidney disease excluded, or such after intercurrent infectious sore throat; the course traced continuously from the pregnancy kidney to the chronic nephritis, and, thirdly, the diagnosis of nephritis not based merely on the albuminuria but on reliable functional tests. The frequent occurrence of albuminuria in the course of pregnancy testifies that the kidney is often subjected to great strain, and it is possible that repeated damage might in time entail chronic nephritis. With pregnancy kidney no benefit was derived from restriction of water and of salt in the cases described in detail. Any benefit from the restrictions was evidently due to the bed rest enforced along with them. Some toxic change in the structure of the vessels is manifestly the cause of the dropsy and of the higher blood pressure and this, also, is favorably modified by the bed rest. The experiences he relates confirm that even extreme edema and high blood pressure should never decide as to whether the pregnancy should be interrupted or not. He has witnessed both very pronounced borne without harm for mother and child. Even disturbance in vision is not an absolute indication for emptying the uterus. Only when it develops a long time before term is there danger, as a rule, of irreparable damage to the eyes. When it occurs just before delivery, expectant treatment, particularly under supervision of an ophthalmologist, is indicated. In two of the cases he reports, severe retinal changes retrogressed completely after delivery. It seems wisest, on the whole, he adds, with normal renal functioning to accept the eye findings as the guide whether to interrupt the pregnancy or not. If the functional tests, albuminuria, the dilution and concentration properties of the kidney, the residual nitrogen, and the molecular concentration of the blood show reduced functional capacity in the kidneys, then the pregnancy should be interrupted, regardless of whether the kidney is suffering from a pregnancy toxicosis or an actual nephritis.

Contracted Pelvis at the Berlin Charité.—Heyn analyzes the experiences with 311 primiparae with contracted pelvis and 317 multiparae. The mortality was 1.7 per cent. among the mothers and 11.6 per cent. among the children. The out-

come among the women taken into the hospital a little before term was almost as favorable as in normal cases. A further advantage of this is that it gives an opportunity to study such cases under safe conditions.

Toxic Meningitis After Intraspinal Anesthesia.—Bracht compares the necropsy findings in one case and the clinical findings in two others with similar cases on record. The microscope confirmed the aseptic nature of the meningitis; death occurred from pulmonary embolism. The symptoms closely resemble those of any meningitis, and delirium alternates with somnolency. The temperature is no criterion. The fluid was clear at first but later opalescent or strongly turbid. The procain-epinephrin solution had been boiled up the night before, and it had probably altered by standing till next day. In conclusion he urges research to distinguish between the symptoms due to irritation of the meninges and the symptoms from direct injury of the nerve substance itself. This might reveal which of the elements of the anesthetic are responsible for the different injuries and permit their elimination.

Diabetes and Pregnancy.—Reinhardt concludes from the three cases he reports and review of the literature that the pregnancy does not necessarily aggravate the diabetes during the first two thirds. But very often the uterus becomes dangerously distended with amniotic fluid, and a large proportion of the fetuses die. After the delivery, the puerperium proceeded approximately normally in his three cases. The diabetes, however, seemed to become graver from the fact of the pregnancy, although it was not allowed to go to term. The pregnancy in itself is a strain for the diabetogenous organs, especially the liver, and acidosis and coma are menacing even after the most cautious induced delivery. The danger of acidosis grows greater the longer the pregnancy lasts, and when coma has once developed we cannot control it. Hence he advises not to wait too long before emptying the uterus.

Primary Carcinoma of the Clitoris.—The carcinoma had developed on the basis of a papilloma of fifteen years' standing, and it was eradicated with the cautery. Ederle reviews the publications on these growths, showing a percentage of about 16 per cent. clitoris cancers among 67 vulvar cancers. Ederle has compiled a total of 182 cases of clitoris cancers; in 64 they were restricted exclusively to the clitoris. Among the patients 0.3 per cent. were under 2 and 4.4 per cent. between 20 and 30. Pruritus is usually the first symptom. He compares the glandular involvement, etc. with those of other cancers in the genital organs, and remarks that roentgen therapy does not seem to offer any prospects of success with vulvar cancers.

Osteomalacia.—Scipiades devotes seventy pages to this account of his experimental and clinical research on internal secretions as affecting osteomalacia. It has convinced him that the thymus is responsible for the processes which induce human malacia. All influences which induce an intensive accidental pathologic involution of the thymus gland entail osteomalacia, especially when followed by a rapid succession of pregnancies without corresponding pauses for lactation and involution of the thymus. The thymus etiology does not conflict with but throws more light on the data already accumulated in regard to osteomalacia.

Hygiea, Stockholm

Nov. 30, 1919, 81, No. 22

*Relations between Pregnancy and Pulmonary Tuberculosis. E. Lindhagen.—p. 897.

Relations Between Pregnancy and Pulmonary Tuberculosis.—Lindhagen has witnessed in three cases the whipping up of pulmonary tuberculosis into a fulminant form after childbirth, as he describes in detail. He also cites similar experiences published by veterinarians in regard to goats and other domestic animals. The curves from his three cases show the almost immediate rise of the temperature after delivery, and the close succession of peaks to the fatal outcome in one, two and six months.

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SELECTIVE BACTERIOSTASIS IN THE TREATMENT OF INFECTIONS WITH GENTIAN VIOLET

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NEW YORK

The selective bacteriostatic property of gentian violet, which has been the subject of various publications¹ since 1912, has been studied during the past three years with particular reference to the possible application of the laboratory findings to the treatment of infections. In recent publications in *THE JOURNAL*,² the results of the treatment of acute infections of the knee joint, by the method of lavage and staining, without operation, were described. These results were sufficiently encouraging to warrant an extension of the studies, and this is now being undertaken with a more abundant material than was at my disposal at the time of the earlier publications.

My purpose in this paper is to report the results of attempts to apply the selective bacteriostatic power of gentian violet to the treatment of infected wounds.³ The activity of the dye is described as bacteriostasis, the dye is called a bacteriostat, and its property is referred to as bacteriostatic, partly because these words, unlike the monstrous "bactericide" and "bactericidal," are etymologically correct; but more particularly because they describe with nice accuracy the action of the dye. It is certainly true of gentian violet (careful study would doubtless prove it also true of other so-called bactericides) that apparent death of organisms, following exposure to the dye, may turn out, on careful study, to be only delay of growth.

Attention was called to this fact, and to its possible theoretical significance, in a brief note on a series of experiments in which stained *B. anthracis* was injected into the circulation.⁴ Furthermore, the fact that the power of this dye (or of any other agent used in the

treatment of infection) to prevent growth, may be of equal therapeutic importance with its power to kill organisms is recognized when the dye is described as a bacteriostat; and the fact is of sufficient importance to demand recognition. None the less, in the large amount of literature on the treatment of infections with anilin dyes which has appeared since my first publication in 1912, this important feature of bacteriostasis has been consistently overlooked.

The fact that the power of a therapeutic agent to prevent the growth of organisms may be quite as important as its power to "kill" organisms is one reason the more (a dozen others could be cited) why the custom of estimating the value of a "bactericidal" agent by its phenol coefficient alone is a pernicious one. Such a growth-preventing, or bacteriostatic, property gentian violet possesses, even in very high dilutions. At least it possesses this power, in high dilutions, when the test is made in vitro; but it would be unwise to expect that this sharp selective activity would be exhibited in as clear cut a fashion in wounds as in the test tube. Numerous considerations warned against the folly of such a supposition; and the results in the study on wounds carried out at the Walter Reed Hospital were, indeed, less concise and clear cut than they had been with test tube experiments. None the less they paralleled these; and it was particularly interesting to find that in wounds, as in the test tube, it was the gram-negative organisms which were least affected by the dye. In Figs. 2 and 3, the organism persisting in wounds which had been treated with gentian violet has been stroked at each side of a gentian violet plate, and a stroke of *Staphylococcus aureus* has been made at the center, for contrast. The persisting organism is seen to behave as gram-negative organisms do; and it proved, indeed, to be *B. coli*. The behavior of the gram-positive *B. diphtheriae*, on the other hand, toward gentian violet is shown in Figure 1; and treatment of the wounds, as will be described later, was completely efficacious in ridding them of this organism.

In attempting to apply gentian violet to the treatment of infected wounds, I had in mind the difficulty which had first to be contended with in attempting to use the dye in the treatment of infected joints: the absurdity, that is, of applying this, or any other, bacteriostatic agent to an infected surface with the hope of reaching the organisms concerned, unless this surface had first been mechanically cleansed. When a substance is used which can be as plainly seen as gentian violet, this absurdity is apparent; for the dye is seen staining the secretions and fibrinous products of inflammation, which protect from the action of the dye (as effectively as a layer of grease would do) the

1. Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, *J. Exper. M.* **16**:221 (Aug.) 1912. Churchman, J. W., and Michael, W. H.: The Selective Action of Gentian Violet on Closely Related Bacterial Strains, *ibid.* **16**:822 (Dec.) 1912. Churchman, J. W.: The Selective Bactericidal Action of Stains Closely Allied to Gentian Violet, *ibid.* **17**:373 (April) 1913; The Selective Bactericidal Action of Methylene Blue, *ibid.* **18**:187 (Aug.) 1913; *Proc. Soc. Exper. Biol. & Med.*, 1914, p. 120.

2. Churchman, J. W.: Treatment of Acute Infections of the Joint by Lavage and Direct Medication, *J. A. M. A.* **70**:1047 (April 13) 1918; Septic Arthritis of the Knee Accompanying Fracture of the Patella, *ibid.* **72**:1280 (May 3) 1919.

3. Ample opportunity for this study was given by the kindness of Surgeon-General Ireland, through whom laboratory facilities and free access to the rich material of the Walter Reed Hospital were provided for the purpose. It is a pleasure to acknowledge with gratitude the kind assistance of the commanding officer, Colonel Glennan, and of the chief of the surgical service, Col. William Keller.

4. Transactions, Tenth Annual Meeting, National Association for the Study and Prevention of Tuberculosis.

underlying granulations in which lie the organisms concerned. In the case of the joints, an apparatus has been devised whereby this preliminary cleansing can be well done;⁵ in the case of wounds it was necessary to incorporate mechanical cleansing in the technic of the daily dressings. This was done in a painstaking way. After the usual cleansing of the skin surrounding the wound, the granulations themselves were gently washed with neutral soap, dried by mopping, and then flooded with hydrogen peroxid. This was repeated until the granulations were left naked. Minute pockets were cleaned, much as a dentist cleans the pockets in the gums, and special attention was given to the space just under the skin edge at the junction of skin and granulations where bacteria and secretions are likely to accumulate.

The cleansed granulations were dried by mopping with gauze, and were then painted with a saturated aqueous solution of gentian violet. The first coat was allowed to dry and a second coat applied. This was also allowed to dry, and a dry dressing applied.

Two types of wound were treated in this manner: amputation stumps that had become diphtheria carriers, and amputation stumps with ordinary infection.

These were sufficient reasons for assuming that it might kill this organism in wounds. Something might also be hoped for from its power of penetrating tissue;⁶ and the persistence of the dye (it remained apparently unchanged for periods varying from twenty-four to seventy-two hours and even longer) made it seem possible that even if the organisms were not actually stained, the continued presence of dye in the tissues might prevent growth, by a true bacteriostasis.

Both the cases treated were freed of *B. diphtheriae* in a short time. In order to determine positively that the organism was no longer present, the wounds were subjected to the most rigid scrutiny, for no dependence whatever can be placed, in these cases, on a single culture made from a surface smear. It seems probable that the organisms lie below the surface. For these reasons the wounds were regarded as sterile for *B. diphtheriae* only after the following technic had been observed:

(a) Four negative cultures were obtained on successive days, the cultures made twenty-four hours after the last previous treatment. Material for cultures was taken from the granulating surface and also from the blood serum obtained after rubbing the superficial granulations away.



Fig. 1.—Effect of gentian violet on *B. diphtheriae*: A divided gentian violet plate, the upper half of which contains gentian violet agar, and the lower half plain agar. The two lateral strokes (D, D) are of *B. diphtheriae*, and between them, for contrast, is a stroke of *B. coli* (C). *B. coli* grows equally well on the two portions of the plate, while *B. diphtheriae* fails to grow either on the gentian violet agar or anywhere near it.



Fig. 2.—Persistence of a gram-negative organism in a wound treated with gentian violet: The organism obtained from the wound (*B. coli*) has been stroked across the plate at the sides (C, C) and grows equally well on the gentian violet agar and on the plain agar. At the center (A) the plate has been stroked with *M. aureus*, which fails to grow on the gentian violet agar.



Fig. 3.—Persistence of a gram-negative organism in an empyema sinus treated with gentian violet: The organism obtained from the wound has been stroked across the plate at the sides (C, C); it is *B. coli* and grows equally well on the gentian violet agar and the plain agar. Between these two strokes (A) the plate has been stroked with *M. aureus*; this organism fails to grow on the gentian violet agar.

I. AMPUTATION STUMPS THAT HAVE BECOME DIPHTHERIA CARRIERS

One of the most difficult problems to be dealt with at the Walter Reed Hospital was presented by patients with thigh amputations in which wound diphtheria had developed, and who had become diphtheria carriers. Two such patients had been isolated as carriers, one for four months and the other for several weeks; and from the wounds of both, cultures for *B. diphtheriae* had been constantly positive in spite of treatment with diphtheria antitoxin, surgical solution of chlorinated soda (Dakin's solution), argyrol crystals, tincture of iodine, chromic acid, silver nitrate, etc.

B. diphtheriae is gram positive and will not grow in mediums containing minute amounts of gentian violet (Fig. 1). It is killed by staining with the dye; and when observed in the living form in a hanging drop, it takes up the stain with great avidity, in contrast to the gram-negative organisms which—in a hanging drop—stain poorly and slowly.

(b) A fifth negative culture was obtained (in the manner just indicated, from the surface and from below the surface) after the wound had been left untouched for four days and the secretions allowed to accumulate on the surface.

(c) The cultures were made on Loeffler's medium; after twenty-four hours' incubation they were enriched by pouring glucose broth over the surface; and from this broth, after

6. Frequent reference has been made, in previous publications, to the fact that gentian violet, applied to the surface of a mucous membrane, penetrates to its depths. Great difficulty has been experienced in getting satisfactory sections, to study the exact depth of this penetration, as the dye is dispersed during the process of cutting even frozen sections, and this fact may lead to great error in interpreting the results. A technic has finally been devised which gives fairly satisfactory sections for microscopic study. The dye is applied to the living mucosa (by injection, for example, into the knee joint or the bladder), and the tissue is at once removed and thrown into Gram's solution, where it is left for two hours. The stained mucosa becomes a brownish black. The material is then put in 40 per cent. dilution of liquor formaldehydi, which, acting like an alcohol, restores the violet color, fixes the tissue, and dissolves out the excess of stain, but either removes not at all, or in the slightest degree, the stain that has been absorbed by the cells. After twenty-four hours' fixation, paraffin sections may be made in the usual manner. I have injected the living human knee joint by the technic described for the treatment of acute infections of the joints, and have made sections of the synovial membrane in the manner described, the leg having been amputated at the mid thigh for senile gangrene of the toes. These sections show beautifully the penetration of the dye (Figs. 4 and 5). The question will be more fully discussed in a subsequent publication.

5. Fully described in THE JOURNAL, April 13, 1918, p. 1047.

twenty-four hours' further incubation, transplants were again made on Loeffler's medium.

CASE 1.—N., Ward 26. A bad wound diphtheria, with membrane, about four months before. The membrane responded to antitoxin, but the patient had been a constant carrier ever since. Treatments with gentian violet were given daily from July 21 to July 25. Cultures were negative for *B. diphtheriae*, July 21, 23, 24, 25 and 29. There was a light dermatitis in the skin about the wound, August 10, the wound having been left untouched for one week; cultures from the wound were negative for *B. diphtheriae*.

CASE 2.—Y., Ward 26. A constant carrier since July 2 probably much longer, as the wound had given an unusual amount of trouble since it was first inflicted, months previously; but *B. diphtheriae* was first discovered July 2). Culture, July 26, was positive for *B. diphtheriae*. Treated with gentian violet, July 26, 27, 28 and 29. Culture, July 30, was positive for *B. diphtheriae*. Daily treatments were given from July 31 to August 9. Cultures, August 5, 7, 8, 9 and 12 were negative for *B. diphtheriae*. Transfer from the isolation ward was delayed by the appearance of an erysipelatoid rash in the upper thigh, 5 inches away from the wound, which appeared suddenly—with constitutional symptoms—and subsided in three days. Culture from the skin showed a coccus, but no *B. diphtheriae*. The patient was transferred to the open ward.

STERILIZATION OF STUMPS

No more difficult surgical problem occurs in the hospital like the Walter Reed—where the cases which still present problems are concentrated after the simpler cases have been sifted out—than that presented by unhealed or badly healed amputation stumps. In many of these cases, infection of the skin, soft parts and bone is present; in others, the skin flap left at the original amputation (often a guillotine) is insufficient; in some, a persistent dermatitis or eczema has developed. All these conditions interfere with proper treatment, and militate against the success of the plastic operation necessary to provide the patient with a good weight-bearing stump.

The experience with the Dakin-Carrel technic in this type of case had not been particularly satisfactory. In the thigh stump was a short one it had not proved easy to apply the tubes; and when it was necessary to pull the skin flaps down with traction straps—as in most cases it was necessary—this difficulty was greatly increased. Worse than this, the dermatitis of the flaps, when present, was greatly aggravated by the Dakin solution, and in many instances it had to be abandoned for

this reason. In other cases, dermatitis not present in the beginning was incited by the Dakin solution; and even in patients who developed no visible skin lesion, complaints of severe burning of the skin were common.

It seemed possible that these difficulties might in part be avoided by attempting to sterilize the wounds with gentian violet. It was certain that this dye could be used without difficulty, by a simple technic, in combination with tension straps, with the use of which it would in no way interfere. It seemed certain, also, that the production of dermatitis need not be feared, as the dye would be applied to the granulations, where it was needed, rather than to the skin, where it was not. It proved, indeed, to be the fact that the progress of the most obstinate cases of dermatitis, already present, was greatly impeded by the use of the gentian violet technic.

Four cases of this sort were treated:

CASE 3.—*Simple granulating wound at the end of a partially closed stump (midthigh).*—Skin irritation had made the use of Dakin's solution impossible. It seemed probable that if the wound could be sterilized and the skin kept healthy, closure could be effected by adhesive plaster traction on the skin edges. Sterilization of this wound was accomplished without difficulty; the granulations became red and healthy, the skin normal; fairly rapid closure occurred, adhesive strap traction being used.

CASE 4.—*Granulating wounds accompanied by marked dermatitis.*—In D., Ward 74, the wound was an unhealed amputation of the thigh and consisted of a strip of dirty, grayish granulations, about 1.5 cm. wide, separating the edges of skin which, for a distance of about 5 cm. from the open wound was the site of a dermatitis of the most obstinate character. The skin was a light, brownish red, covered with dirty, superficial yellow

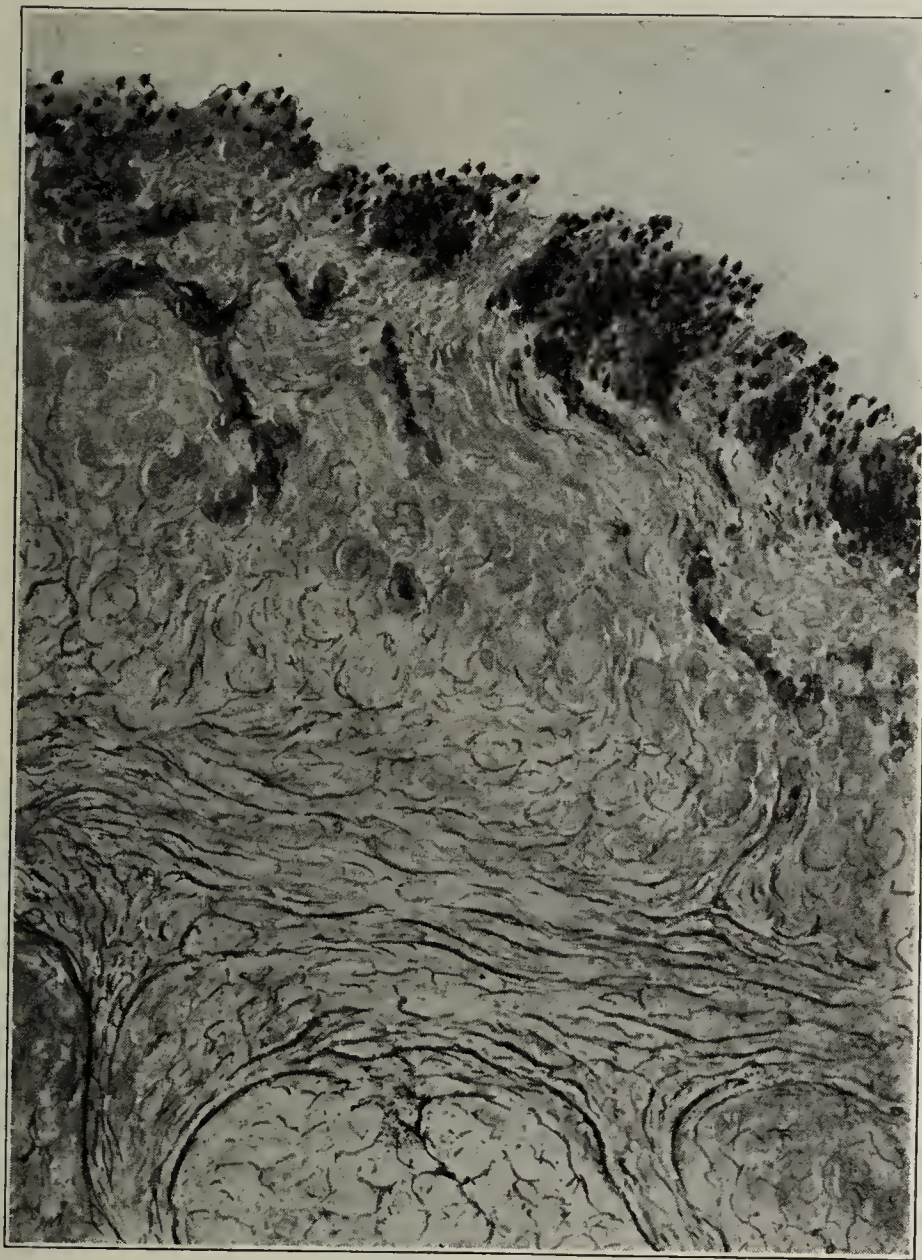


Fig. 4.—Synovial membrane knee joint injected with gentian violet, 1:1,000, just before a midthigh amputation (low power).

crusts, and touched, here and there, with very superficial ulcerations or abrasions of the top layers of epidermis. The patient suffered much from itching. Nothing that had been tried—and everything known had been tried—had done the slightest good. The indications, it seemed clear were to sterilize the granulations and thus do away with the infection which was causing their unhealthy appearance; and to do this without using any material likely to aggravate the skin condition. This was accomplished by careful mechanical cleansing of the whole field; the granulating surface was then painted with gentian violet and the skin well protected with paste. I received the distinct impression from this case and other cases that the relative sterility of the granulations produced by gentian violet, made the wound secretions less irritating to the skin and so less likely to produce or aggravate dermatitis. At any rate, the progress of this case was striking; the der-

matitis showed marked improvement in a short time; the appearance of the granulations became healthy, and epithelial growth from the skin edges, which had been stationary for weeks, began soon to close the wound in.

CASE 5.—*Granulating wounds accompanied by marked dermatitis.*—C., Ward 74. A case similar to the preceding. The

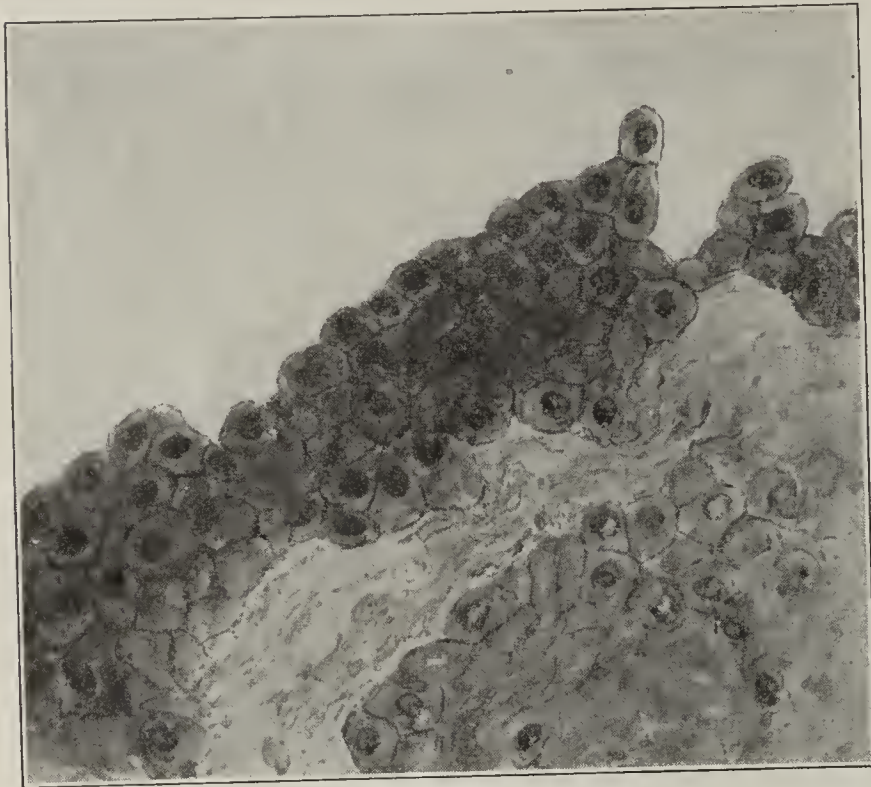


Fig. 5.—Synovial membrane, knee joint, injected with gentian violet, 1:1,000, just before a midhigh amputation (high power).

result of treatment with gentian violet was equally good, though less striking, as the dermatitis was less severe.

CASE 6.—*Granulating wound prepared for plastic closure.*—O., Ward 73, had had a long hospital career, with several operations, always complicated by sepsis. The amputation was at the midhigh. The skin would not tolerate Dakin's solution. A preliminary operation had recently been done, flaps prepared for closure, and the wound left wide open. Under gentian violet treatment, healthy granulations sprang up throughout the wound with great rapidity; these, in three weeks' time, had covered the bone end and reduced the wound to a space about $2\frac{1}{2}$ by $1\frac{1}{2}$ inches. It was impossible completely to sterilize it, a few colonies of a gram-negative bacillus (*B. coli*) always appearing in the plates (Fig. 2). August 15, however, a plastic closure was satisfactory except for about 1 inch at the center of the wound where infolding made good approximation impossible. Convalescence was uneventful. Healing occurred by first intention for about seven eighths of the wound. The central eighth (where approximation had been poor) separated about the sixth day for a length of about 1 inch. There was, no doubt, a mild infection in the subcutaneous tissues, but this did not interfere with healing by first intention throughout seven eighths of the wound.

GINGIVITIS DUE TO *B. FUSIFORMIS*

Reference was made in an earlier article⁷ to attempts made to use gentian violet in pyorrhea alveolaris, attempts which were attended with a considerable degree of success. The frequency and severity of ulcerative gingivitis (Vincent's angina) at the Walter Reed Hospital led to the adoption of the dye in the treatment of this disease. The cases were under the care of Major Butler of the dental department, in the excellent dental clinic under his charge. They were large in number and severe in degree; and their course was extremely satisfactory. It was Major Butler's distinct impression that the patients were materially benefited by the dye; but as it is difficult, if not impos-

sible, to control these cases bacteriologically, on account of the presence of the organism concerned in the normal mouth, the conclusions reached have only the value of clinical deductions. The penetration of the gum by the dye and its persistence are not open to dispute; and it certainly deserves more extensive trial in this and kindred types of gingivitis. Moreover, the *injection of the dye into the gums* (suggested in 1918⁷) should be studied, for this method of administration would allow the bacteriostatic action of the dye full play against organisms lying below the surface.

VAS PUNCTURE IN ACUTE GONORRHEA

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Current treatment of acute gonorrhea in the male recognizes the two conspicuous end-segments of the seminal duct, urethra and epididymis, but ignores the invisible, intermediate portion—vasa, ampullae and vesicles; yet these, combined, present a mucous surface nearly equal in area to that of the urethra (Figs. 1 and 2). The following departures from the current conception and therapy of acute gonorrhea are based on seven years' treatment of this intermediate segment.

1. The infection reaches the vesicles in more than half the cases during the acute stage, the first weeks. Such extension has been generally unrecognized because the symptoms induced by it have been commonly ascribed to acute prostatitis. The rôle of the vesicles is proved not merely by the detection of the pathologic condition by the trained finger in the rectum but strikingly by the pronounced mitigation of symp-

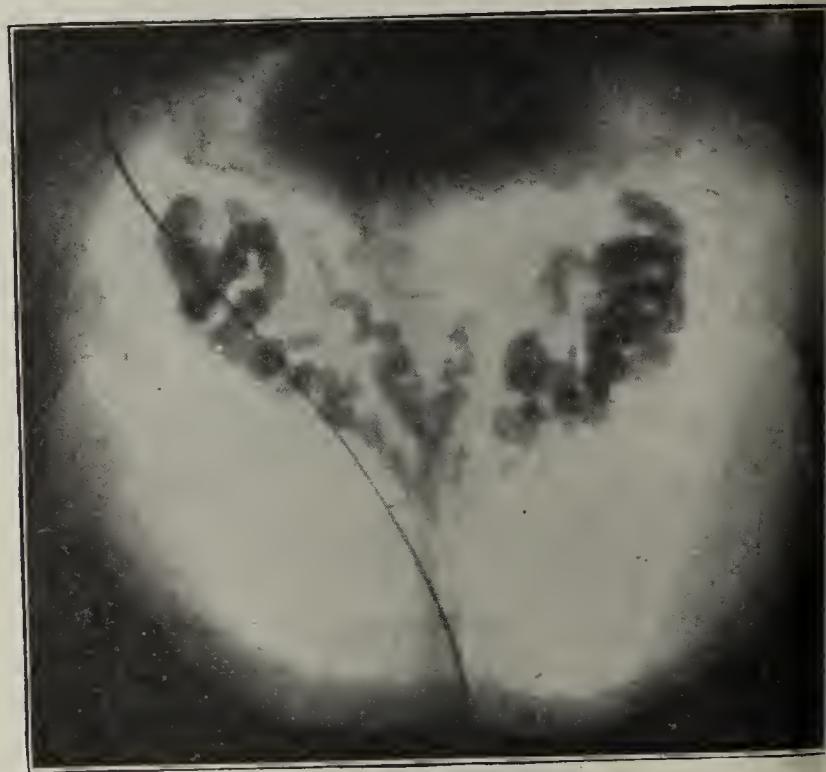


Fig. 1.—Vasa, ampullae and vesicles filled with collargol solution by vasostomy; stilet catheter in right ureter.

toms which follows immediately on filling them with proper solution by way of the vasa. For example, a patient in the fourth week of gonorrhea, recently seen with Dr. L. B. Russell of Hoopeston, Ill., had for days urinated painfully every thirty minutes to hours night and day. Immediately after his vesicles were filled with 5 per cent. collargol solution, the

7. Footnote 2, first reference.

appeared and the urinary intervals promptly increased to four, five and seven hours.

2. Acute gonorrheal vesiculitis, whether identified or not, has received merely symptomatic treatment combined with vaccines and foreign proteins. When with this aid the patient's immunizing powers fail to overcome the vesicle infection, he joins the great army of sufferers from gleet, chronic prostatitis, sexual



Fig. 2.—Vesicles, etc., filled with collargol solution. Since in chronic vesiculitis the diverticula of the vesicles here pictured are filled with solid masses, stripping of such vesicles usually fails to cure the chronic infection; even filling them with collargol occasionally fails.

arrangements, and other recognized results of chronic vesiculitis.

3. The acutely infected vesicle, hitherto inaccessible to direct medication, is easily filled with a suitable solution by puncture of the vas. Moreover, a given infection is far more amenable to treatment in the vesicle than in the urethra, for two reasons: first, because the unstratified vesicular mucous membrane is entirely free from lacunae, follicles and glands, such as crowd the deeply stratified epithelium of the urethra; second, because the vesicle, like other sacs enclosed in unstriated muscle (stomach), automatically churns its contents. Since the color of the emitted discharge often proves the presence of collargol in the vesicles for weeks after they have been filled with the solution we can understand that a single filling, followed by weeks of automatic mixing with the infective agents unprotected by follicles, etc., may end acute infection of the vesicle, though producing little or less effect in the urethra.

4. Medication of the vesicles does not, of course, cure the urethral infection, which requires independent treatment. A married man in the third week of gonorrhea showed bilateral vesiculitis; both vesicles were filled with collargol solution, and the urethra was treated by standard methods. At the end of a week the discharge had almost ceased, whereupon the patient discontinued treatment and resumed conjugal relations, using condoms. After nine days he returned with a profuse, purulent discharge, which was found to involve only the urethra (vesicles not infected), and which yielded to appropriate treatment of the urethra.

The prompt arrest of severe infection by this method was illustrated in a patient in the fifth week of gonorrhea, recently referred by Dr. George W. Hall of Chicago:

When first seen, this patient presented frequent and painful urination, severe perineal pain, creamy discharge with gonococci, tenderness of vesicles, and painful swelling of the right elbow and the right anterior tibial muscle; the temperature was 102.5. Both vesicles were filled with 6 per cent. collargol solution; two days later a thin discharge and subsiding swellings of the elbow and the leg were the only symptoms remaining. The discharge ceased after two weeks' treatment of the urethra and prostate; the arm and the leg were well within ten days after the vesicles were injected. A month after all treatment was discontinued, the emitted semen was found free from gonococci—the only proof of recovery, in my judgment, without which I decline to pronounce a patient cured.

This was the seventh case of acute gonorrheal rheumatism promptly cured by filling the vesicles with collargol. The first patient was operated on in St. Luke's Hospital, in February, 1913.

GONORRHEAL EPIDIDYMITIS

Since gonorrheal epididymitis is always an extension from the infected vesicle, and is prevented by timely medication of the vesicle, it should not occur in patients who obey instructions. Furthermore, the French operation, epididymotomy, leaves undisturbed the infection in the vesicle of which the epididymitis is a result; it mops up the floor but does not turn off the faucet. Twelve cases of recurrent infection in the incised epididymis have come to my notice. In one there had been three recurrences within five months after epididymotomy. In this and six other cases the trouble was ended by medicating the infected vesicle through the vas, which should, of course, be done whenever epididymotomy is performed. It is true that epididymotomy is not always followed by recurrence, and equally true that epididymitis without incision is not

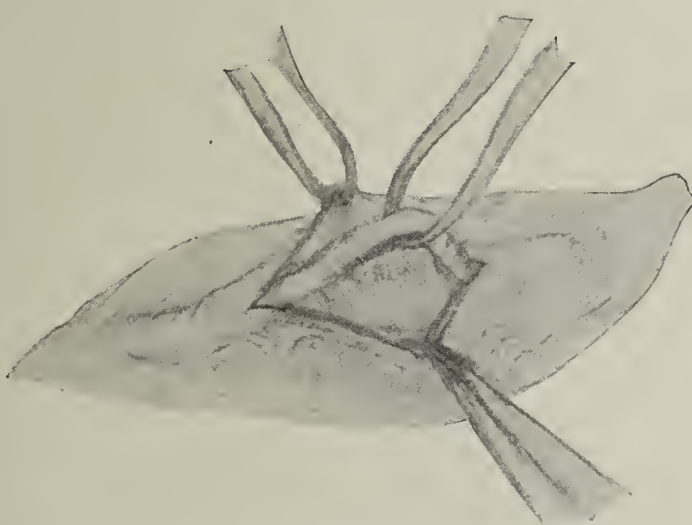


Fig. 3.—Vasostomy: Through a scrotal incision three-fourths inch long the vas is lifted above the skin.

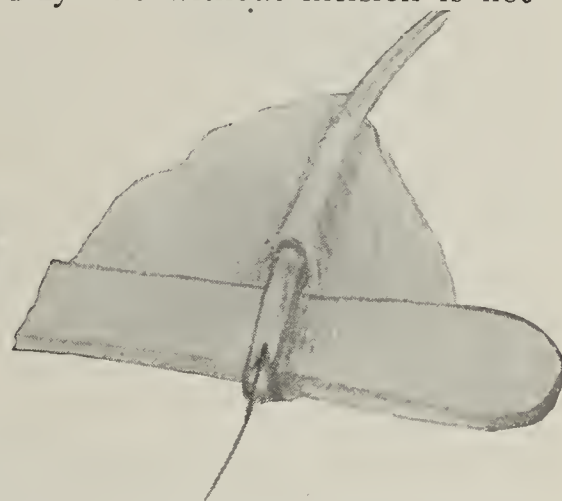


Fig. 4.—Vasostomy: The handle of an aneurysm needle is slipped under the vas, which is drawn tense and punctured with a bistoury point; a silk thread is passed into its lumen; the remaining steps are those described under vas puncture.

always followed by recurrence. But epididymotomy does not prevent recurrence, whereas injection of the vesicle does.

TECHNIC OF VAS PUNCTURE

The physician inexperienced in the surgery of the spermatic cord should first employ for the medication of the vesicle by way of the vas my original operation, described in textbooks on urology. For by this open operation the vas is lifted out of its sheath, in which it normally slides freely like a tendon, and is supported

above the skin before its minute lumen is opened (Figs. 3 and 4); hence the common pitfalls, notably the disastrous error of injecting the sheath of the vas instead of its lumen, are avoided through visual control.

Vas puncture, on the other hand, does not disturb the relations of the structures concerned, and hence requires familiarity with them. The vas must be immobilized under a tense scrotum. This can be done in many ways, for example, as a woman's embroidery is held tense between two embroidery hoops. The following is perhaps the simplest method:

After cleansing and anesthesia of the scrotum are secured, the vas is pressed by fingers against the lateral scrotal wall, and is fixed by tenaculum lock forceps (Braun's) whose points pierce the skin beneath the vas above the epididymis; a second pair of forceps encircles the vas similarly half an inch above the first. Gentle traction of the two instruments by an assistant renders tense the scrotum overlying the intervening vas (Fig. 5). The scrotum is then rested on any

the possible regurgitation of collargol out of the vas. Threaded in a fine hypodermic needle, a silkworm or waxed silk strand is carried into the lumen of the vas and out through the skin one-half inch above (Fig. 8); the needle is withdrawn, leaving the thread; its projecting ends are merely knotted, but are not tied together (important). This thread is a drain out of the vas and a guide for the blunt needle into the vas for subsequent injections, if needed; it should be withdrawn within five days.

Percutaneous puncture without using the knife appeals to the timid patient; but the security afforded by visual control of the puncture through incision far outweighs the disadvantage of the slight cut in the skin.

THE ADVANTAGES OF COLLARGOL AS A REMEDY

Collargol is used for medicating the acutely infected vesicles because of its advantages over all other remedies tried in my treatment of chronic vesiculitis by vasostomy.¹ Among its advantages are its penetrating

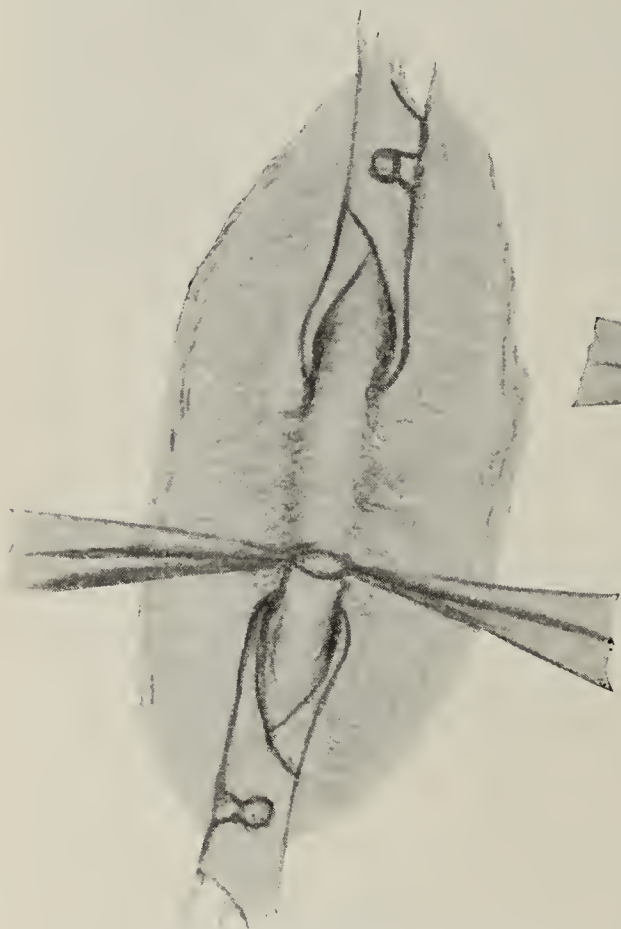


Fig. 5.—Vas puncture: The vas is immobilized under a tense scrotum by traction on tenaculum forceps; half-inch incision through scrotum and sheath to vas, whose coverings are drawn apart by snap forceps.

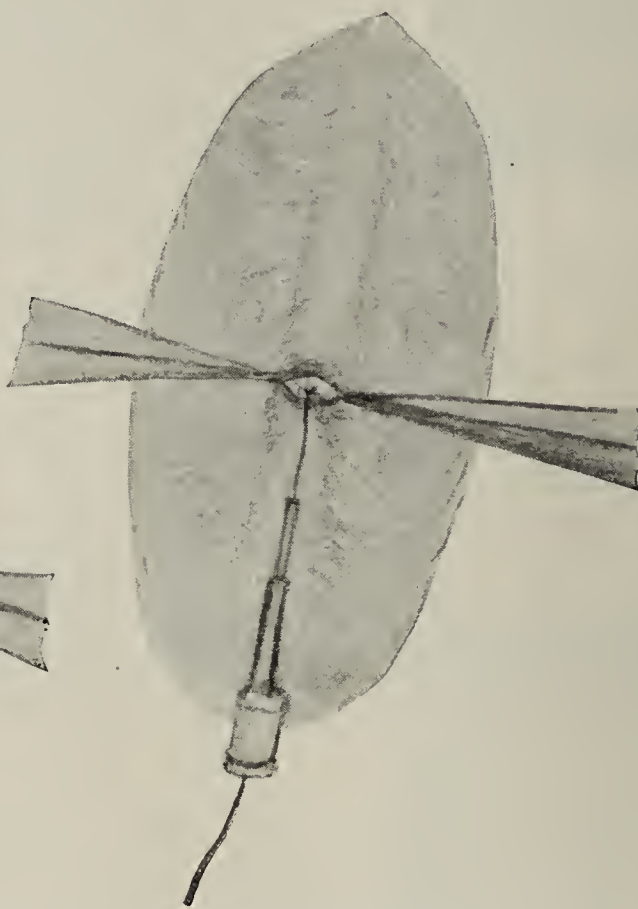


Fig. 6.—Vas puncture: Through puncture of the exposed vas with bistoury point a silkworm thread is passed into its lumen, and a blunt hypodermic needle is threaded over the silkworm toward the vas. (In this and the next illustration the tenaculum forceps, really remaining in position, are omitted to avoid confusion.)

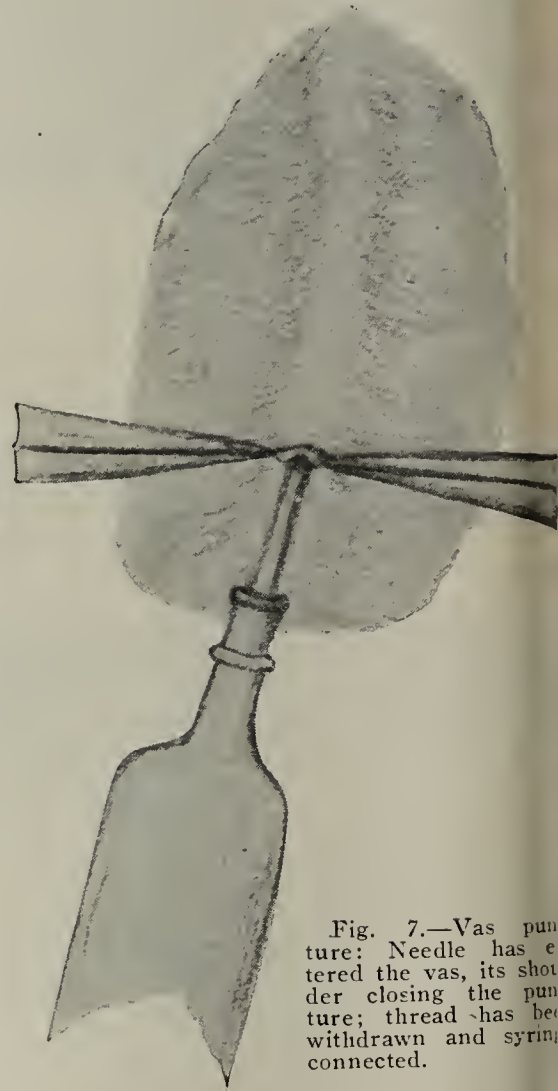


Fig. 7.—Vas puncture: Needle has entered the vas, its shoulder closing the puncture; thread has been withdrawn and syringe connected.

convenient support. An incision one-half inch long or less exposes the vas. This is punctured with a bistoury point just enough to admit a fine silkworm thread, which should advance freely in its lumen. Or the puncture can be made with a hypodermic needle carrying the thread; but the bistoury point causes less injury and gives greater security. A blunt hypodermic or silver canaliculus needle is threaded over the silkworm into the vas (Fig. 6); the thread is withdrawn, and 10 c.c. of a 1:25,000 methylene blue solution are gently and slowly injected (Fig. 7). This should presently cause a desire to urinate; the urine passed should show the dye. If the color fails to appear in the urine, the procedure is faulty, and must be corrected or abandoned. The vas has been found occluded in more than 1 per cent. of my operations. The second vas is injected with fuchsin solution for contrast.

When the appearance of the dye in the urine has proved correct operation and patency of the seminal duct, 20 c.c. of 5 per cent. collargol solution are slowly injected, followed after two minutes' interval, by 1 c.c. of water, to minimize

power (unpleasantly illustrated in the kidneys), which probably explains its presence in the vesicles for weeks after injection; and its liquefying effect on semisolid purulent masses. That collargol in 5 per cent. solution causes no damage to vas or vesicle, though certainly other solutions used in the urethra do, was shown in an admirable experimental work by Lespinasse.² It seems also to be the agent generally used by those experienced in vasostomy.³

1. Belfield, W. T.: *Surg., Gynec. & Obst.*, November, 1906; *M. Rec.*, May 4, 1907; *Pus Tubes in the Male*, *J. A. M. A.* **53**: 2 (Dec. 25) 1909; *Vasostomy—Radiography of the Seminal Duct*, *ibid.* **61**: 1867 (Nov. 22) 1913.

2. Lespinasse, V. D.: *Bull. Chicago M. Soc.* **19**: 17, 1919.

3. Herbst, R. H.: *Seminal Vesicle Infections as the Cause of Persistent Urethral Discharge*, *J. A. M. A.* **68**: 761 (March 10) 1919; *Chicago Surgical Clinic*, April, 1919. Bremner, L. W.: *Inters. M. J.* **23**: 694, 1916. Caulk, J. R., and Greditzer, H. G.: *Ibid.*, p. 7. Schmidt, L. E.: *Bull. Chicago M. Soc.* **19**: 18, 1919. Lespinasse, V. D.: *Ibid.*, p. 17, 1919. Thomas, B. A.: *Surg., Gynec. & Obst.*, Jan. 1917. Mark, E. G.: *Proc. Chicago Urol. Soc.*, Nov. 20, 1919. Mark, A. P.: *Siglo méd.* **66**: 356 (May 3) 1919; *abstr. J. A. M. A.* **73**: (July 26) 1919.

ONE UNTOWARD RESULT OCCASIONALLY FOLLOWING
VASOSTOMY

On the other hand, collargol is a factor in the only untoward result that ever follows vasostomy properly performed, namely, occlusion of the vas at the site of operation. That this is exceptional is indicated by the observation that four men, each of whom had only one testicle, all furnished normal semen after vasostomy. Such occlusion results partly from the extensive dissection, and partly from the regurgitation of collargol out of the vas into its sheath and surrounding structures, resulting in the formation of fibrous tissue. Both causes are eliminated by the technic of vas puncture already described, which should supersede vasostomy; but should such occlusion occur, it is remediable by a simple procedure, namely, excision of the occluded portion of the vas and union of the cut ends by a catgut or other suture.⁴

In working with the vas and its coverings I never use a sewing needle, but do my sewing with a fine hypodermic needle. This is made to pierce the vas and its surroundings wherever a stitch is desired; a silkworm or other thread is passed through the needle, which is then withdrawn, leaving the thread in the desired position with a minimum of injury to the delicate tissues involved (Fig. 8).



Fig. 8.—Vas puncture: After completion of injection, thread is placed and left as drain from the vas and guide for entrance of blunt needle for subsequent injections.

SUMMARY AND CONCLUSIONS

1. The traditional and still prevalent conception of acute gonorrhea as "specific urethritis" presents only a half truth; for in the majority of cases the disease becomes urethrovesiculitis within the first month.

2. Medication of the acutely infected vesicles and ampullae by way of the vasa with 5 per cent. collargol solution eliminates the infection from these otherwise inaccessible cavities. For this purpose vas puncture is preferable to the original operation, vasostomy.

3. The prompt arrest of the vesicular infection in the acute stage averts chronic vesiculitis with its manifold evils, eliminates epididymitis, and converts the hitherto refractory urethrovesiculitis into a urethritis only, with which we are well equipped to cope.

4. The seriocomic aphorism "Any man can make a date to get the gonorrhea; no man can make a date to get rid of it" reflects the futility of current treatment of the acute infection, futile chiefly because treatment is limited to one half of the infected area, the urethra; while in the other half, comprising vesicles and ampullae, the untreated infection persists undisturbed indefinitely. So long as pus produced in the vesicles appears at the meatus, the urethra is subjected to fresh—and futile—assaults.

In short, we treat acute gonorrhea as urethritis only; we are commonly dealing with urethrovesiculitis.

5. Before injecting the vesicle by way of the vas, the physician should master the technic either on the cadaver or through clinical observation; otherwise the patient should be referred to some one experienced in this work.

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MODERN TREATMENT OF THE WEAK
FOOT

ARMITAGE WHITMAN, M.D.

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The subject of weak foot and its treatment has already been so thoroughly dealt with that those familiar with the subject may feel that anything now written can be nothing but repetition. To a certain extent this is true, yet there are aspects of the question that still need to be brought home to both the practitioner and the specialist.

Having only lately returned from an absence of nearly two years, I perhaps have somewhat altered my perspective, so that some things stand out more clearly than they otherwise would. I may not claim to cast any new light on an old subject, but I do state fairly that I regard it from a new angle.

To begin with, we have during the past two years given a large number of medical men, old and young, a grounding, or in case that word may seem too sanguine, an interest in orthopedic principles that they never had before. The medical officers in the Army who took the special orthopedic training have had emphasized, for probably the first time in their lives, posture, backs and feet in their direct relationship to efficiency. Efficiency is a much overworked word, one that is exceedingly objectionable to me. Let us say that it has been impressed on these observers that the man who walked with his back hollow and his toes turned out was unfit for the job that he had in hand. There could not have been a more favorable opportunity for the demonstration of the soundness of these principles, and for the change in public opinion that removed their supporters from the ranks of the faddists to those of the practical men. For almost the first time they were able to work with large bodies of men who were interested in what they had to say, and who looked to them to remove the stigma of being "unfit for active service." Incidentally, the surgeon experimenting for the first time in the application of these principles found the interest of his patients a spur to his mastery of the principles which he was trying to apply.

It is the combination of these two elements—interest on the part of both patient and physician—that is responsible for the present optimism displayed by certain members of the profession toward orthopedic practice in general. Many whose experience has been solely in cantonments on this side or in base hospitals or on splint teams in France are now deciding to take up orthopedics as a specialty. The public is interested and anticipatory. The word "orthopedics," though its meaning is by no means understood, has obtained wide circulation. It is with the idea of averting a certain disappointment that I am taking up the subject of the present day treatment of weak foot.

It may be said that there are at present two schools in the treatment of the weak and painful foot. The

4. Mayo, W. J., and Mayo, C. H.: *Ann. Surg.*, January, 1895.
Lydston, G. F.: *A New Method of Anastomosis of the Vas Deferens*,
A. M. A. 47: 169 (July 21) 1906.

first, and undoubtedly the largest, believes, or at any rate, practices, on the assumption that a sore foot is one of those ills to which man is inevitably heir, and that all that is needed in the way of treatment is relief of the patient's symptoms. This is accomplished in a variety of ways—by raising the inner border of the shoe, by applying a leather footplate, by putting bent pieces of metal in the shank of the shoe, or by applying various forms of metal sole plates. Little if any attention is given to the patient's attitude, or manner of standing or walking. If one questions the more learned followers of this school, they will answer that no patient is interested in his feet beyond the relief of the pain from which he may be suffering at the moment, and that any attempt to reform lifelong habits of gait, or style of shoe, is a waste of breath.

WEAK FOOT IN THE ARMY

The war has dealt a heavy blow at what we may call this "laissez-aller" school by demonstrating that the great majority of foot troubles could be cured without any apparatus whatever. There are two reasons for this. The first is that it was impossible to apply the apparatus. When I first joined the British Expeditionary Forces in May, 1917, as orthopedic surgeon to Base Hospital No. 2 (General Hospital No. 1, B. E. F.), I made a few attempts at manufacturing braces for the Tommies sent down the line because of disabilities of the foot. These, however, were fruitless, partly on account of the stupidity of the local French blacksmith, but mainly on account of the attitude of the British liaison officer, who said that even the most finished apparatus would be neglected or broken by the Tommy—neglected because he neglected everything outside his regular routine, or broken because he wanted an excuse for a rest. As they were in the habit of losing, breaking or pawning their false teeth for similar reasons, his point seemed well taken, and hundreds of otherwise fit men were shipped through to Blighty, there to be classified as P. B. (permanent base troops).

At the time I was transferred to the American Expeditionary Forces, in February, 1918, this attitude—that apparatus was impractical—seemed officially adopted by the orthopedic department of the American Expeditionary Forces. It, however, had gone the British one very much better in establishing a camp, or battalion, for soldiers rejected for active duty because of 'weak feet, weak backs, etc. There the feet were treated by raising the inner borders of the patient's heels and soles, and occasionally by applying a leather strap about the foot and ankle. Metatarsalgia was treated by a leather bar nailed across the sole behind the heads of the metatarsals. By carefully graded exercises alternated with periods of rest, and by constant supervision and rigid discipline, a very large proportion of these

soldiers were returned to combat duty, one of Colonel Goldthwaite's greatest triumphs.

The first demonstration that weak foot could be cured without apparatus thus being that apparatus under the existing circumstances was impractical—a decided forcing of the issue—we now come to the second. This was, as has already been suggested, military discipline plus morale and intelligence. The majority of the troops in question were willing and anxious to fight. Unless their feet were cured they could not. They therefore took the liveliest interest in their recovery. They were, in addition, under the direction of trained officers of more than ordinary experience, such as Major Z. B. Adams and Lieut.-Col. G. W. Hawley, and under them they were supervised by highly trained noncommissioned officers. They were properly shod and properly clothed, and their general condition was excellent. We have demonstrated the proposition that weak foot of this type can be cured without apparatus by taking highly trained athletes, eager for their task, under expert supervision and rigid military discipline.

WEAK FOOT IN CIVIL PRACTICE

Contrast the conditions which obtain in civil life. In hospital practice at least half of the patients are women, middle aged, hard working, fat housekeepers, on their feet all day long, 25 per cent. suffering also from varying degrees of varicose veins. The men are very much of the same class, middle aged street car conductors, policemen, bakers, cooks, and the like. There are comparatively few young men and girls and almost no children. As an illustration, the statistics of the Hospital for the Ruptured and Crippled during September, 1919, may be considered: Double weak foot: Males, 117; females, 146; under 15 years, 45; over 15 years, 218.

In private practice, men come because they are worried about a continual tired feeling, or a "strained foot" that does not get well, or because they have been told by the family physician that they have gout or rheumatism. Women come for the same reasons, and in addition there are a few who seek cosmetic improvement. Of late years, there have been a large, and fortunately increasing, number of children brought because of the ugly appearance of their feet, or awkward and peculiar gait.

To attempt the cure of these classes of patients is a widely different proposition from the military problem just described. The main obstacle, and the one first encountered, is indifference—indifference on the part of the patient and on the part of the physician. Most of the patients come expecting to be given some shoe that will afford immediate relief, and most of the physicians give treatment which may well be summed up in a reply given me by the chief of a large orthopedic clinic in a center of orthopedic teaching, when asked



Fig. 1.—The body weight, when the toes are turned out, falling on the inner border of the foot, as shown by the crease of the trousers.

how he treated these patients in hospital practice: "Anything to get rid of them."

We may assume, however, that men taking an interest in the subject for the first time, as our lately developed orthopedic practitioners are, will not be satisfied so lightly to dismiss the subject. We may assume also that an increasing number of patients will not be satisfied so lightly to be dismissed. I am strengthened in this opinion by the fact that I encounter in my hospital practice practically no patients who have not previously sought relief in some form of "orthopedic shoe," or by means of the various sole plates sold in drug stores. They will all state that these measures gave temporary relief, but that in a comparatively short time their symptoms returned. It is only rarely that they have been given any instruction in exercises, gait, posture, and the proper methods of using their feet. These facts may explain my skepticism in regard to the permanent effect of treatment by varied and nondescript forms of apparatus—apparatus applied for the relief of symptoms without aiming definitely at the original cause of the defect.

Except in rare cases of congenital flatfoot, and deformity as the result of accident, it may be safely stated that the underlying cause of weak foot is the attitude of eversion of the foot. To put it in the simplest possible way, the principal cause of weak foot is the persistent attitude of eversion, to which the commonest predisposition is the practice of standing and walking with the toes turned out. The effect of this attitude is to cause the body weight, transmitted downward through the lower extremities, to fall to the inner side of the foot instead of through its center. This attitude being established, it is only a question of time for the astragalus to begin rolling downward and forward off the os calcis, thereby pressing on the ligaments, causing pain, and ultimately deformity. The mechanism of this process is simplicity itself, and may be demonstrated by dropping a plumb line from the patella, noting where the weight falls when the feet are in the different attitudes. A well creased pair of trousers may be adapted to the same purpose, as in the accompanying illustrations.

Once this principle has been established, it remains only to correct the bad habit in the patient. Granted that this may be done by military discipline plus the desire of the patient to be cured, in civil practice we encounter two difficulties. The private patient is not sufficiently interested in his feet to devote to them the necessary amount of thought; and the hospital patient, who has to be cured during the course of the very occupation that may have caused his disability, has not the strength in his tired and overstretched muscles to maintain the attitude continuously. We therefore find it necessary in most cases to apply some form of support.

METHOD OF TREATMENT

The only apparatus hitherto devised which at the same time supports and attempts to correct the predisposing attitude is that of Dr. Whitman. It not only

"supports the arch," but also provides the lateral pressure which, as it were, nips the deformity in the bud. If a patient wearing the brace attempts to turn his toes out, he becomes actively uncomfortable; and in pulling away from the pressure of the brace, he assumes the overcorrected attitude which is intended to become habitual.

It is a fact unfortunately not universally recognized that the muscles of the weak foot have become stretched, relaxed and weakened in proportion to the length of the period of their accommodation to the faulty attitude of the foot. By a proper combination of rest and exercise, they may be enabled to "take up their slack"; but it is exactly this combination that the patient is not willing to give them. In short, it is the lack of respect with which the individual regards his feet that makes proper treatment so difficult. He will take time from business to devote to the treatment of an abscess at the root of a tooth from which he has never had any symptoms; he will give up days to the

correction of an error of accommodation; but the idea of staying off his feet out of consideration for an acute foot strain appeals to him as absurd, unless an element of the mysterious and bizarre be added. This is the basis on which lies the success of the tendon-lengthening and other operations for the relief of the weak foot. If the patient can be so impressed with the gravity of his complaint that he is willing to submit to an operation, the prolonged rest in plaster of Paris enables the relaxed ligaments and muscles to contract in the overcorrected position, and when he emerges from his confinement, the operative scar serves as a constant reminder of the surgeon's advice as to gait and posture. It is only in exceptional cases, however, that actual shortening of the Achilles tendon makes such a procedure necessary.

It is as a mean, therefore, between depending solely on the patient's attention to the directions given him, and placing his foot in plaster—the fool-proof preliminary method of treatment—that we have recourse to the proper brace. This forces the patient when walking to employ his muscles with the foot held in the correct attitude, and when he is at rest serves as a splint to prevent his foot from sagging into the attitude of deformity, and again overstraining his weakened muscular and ligamentous supports.

It is not my purpose to maintain that brace treatment may be uniformly successful. While it is acknowledged that the fitting of a tailor-made suit is a procedure calling for a high degree of skill, it appears to be assumed that any one, from surgeon to chiropodist, should be able to fit a rigid metal support to a weight-bearing surface and make it fit comfortably the first time. This impression should be dissipated. The process implies a familiarity with the handling of plaster of Paris, the molding of casts, the vagaries of the brace maker and, above all, of the patient.

The cast of the entire foot should be taken with the foot on its side, in the corrected and nonweight-bearing



Fig. 2.—The body weight, when the feet are parallel, falling through the center of the foot.

attitude—in other words, the brace is to be fitted to the foot in its best possible form. Braces fitted to sole impressions of the foot are practically useless. The cast of the foot should then be trimmed according to what the surgeon thinks the particular patient will stand, always with the idea of obtaining the closest fit coincident with comfort. The outer aspect of the heel, where the lateral and plantar surfaces join, should be slightly built out with plaster to allow for the expansion of the heel when weight is borne; otherwise the outer flange of the brace will cause too much pressure at this point. The outline of the brace should be carefully marked by the surgeon himself. The heel and sole of the shoe should be raised a quarter of an inch on their inner borders. The patient should then be instructed that he is to accustom himself to the brace gradually. The first day that he wears it, he is to take it out of his shoe as soon as it hurts him. He is to do the same on the three or four following days. If at the end of that time he notices that the brace is still pressing into his foot sufficiently to cause a painful spot, he is to report to the surgeon, wearing the brace, so that adjustment of it may be made according to the marks on his foot. It should eventually be possible so to adjust the brace that it makes neither a mark on the foot nor a perceptible line on the shoe. Any external evidence on the shoe that the patient is wearing a brace is an indication of improper fitting.

Finally, one should always instruct the patient that his cure rests entirely with himself. Of course, there will always be found cases of such severity and of such long standing that cure cannot be hoped for. To the average patient, however, it should be made perfectly clear that his true recovery depends on himself, not on any form of support. He should be encouraged to look forward to the time when he may give up braces, lifted shoes and exercises, and depend for the future on his acquired habits of gait and posture. The first stage in the discarding process is that of the lifted shoe. He should change every other day, or, perhaps, at the beginning for only half a day, from the lifted to the flat shoe. When he has become accustomed to the flat shoe permanently, he should start a similar process with a brace; but during this period he should go so slowly and methodically that he can immediately lay his finger on any excess that causes a return of symptoms. In such an event he sets his program back to where he was a week before his symptoms occurred, and starts over again.

SUMMARY

The points which I wish to make in the rational treatment of the weak foot are these:

1. The average weak foot may be cured.
2. It may be cured in three ways:
 - (a) By proper shoes, plus a rigid supervision of the patient's daily exercise, gait and posture.
 - (b) By prolonged rest in plaster of Paris with the foot in the overcorrected attitude, plus or minus operative procedure, followed by exercises, etc.
 - (c) By the application of a proper brace, combined with daily exercises, etc.

I wish to establish a line of demarcation between the treatment of the weak foot and the treatment by palliative measures of the symptoms arising therefrom.

I do not expect that the average practitioner or specialist will depart from his present practice, or that

any large proportion of patients will make the esthetic sacrifice of abandoning the footwear that to them seems beautiful, or the lifelong habits of walking and standing that have descended to them from generations of dancing masters. I do believe, however, that the late wide experience of the war has awakened a large number of physicians, and a much larger number of laymen, to an interest in the foot and its disabilities. I believe that from now on there will be a steady improvement in the shape of footwear, particularly in men's shoes, and that the rising generation, in view of the possibility of universal military training, will be anxious to avoid the stigma of being physically unfit, and will therefore seek and require constantly better advice on the subject of foot management. I do not quarrel with long established measures for relieving symptoms which have in the past and will in the future satisfy large numbers of patients and practitioners.

I hope that eventually when a patient appeals to a surgeon for the relief of symptoms arising from a weak foot, the first point to be established will be whether that patient is to be treated for the relief of symptoms or for the cure of their underlying cause. I believe that no matter how enthusiastic a patient and physician may be at the outset, without military discipline it will always be difficult to effect a cure without applying a support. I hope that if a support is applied it will be a rational one, painstakingly fitted by a competent person, and applied with a perfectly clear mutual understanding of its purpose and of its temporary character.

283 Lexington Avenue.

MALIGNANT ENDOCARDITIS WITH PERFORATION OF BOTH MITRAL AND AORTIC VALVES

REPORT OF A CASE *

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Perforation of one of the valves of the heart occurring in malignant endocarditis is occasionally seen at necropsy and is not considered a very unusual complication. However, the finding at necropsy of perforation of two valves of the heart is of rare occurrence, and we believe it is of sufficient interest to warrant the subjoined report of a case.

REPORT OF CASE

History.—Private J. A. A., white, aged 27, admitted to one of the medical wards of U. S. Army Debarkation Hospital No. 5, March 3, 1919, directly from the overseas transport, had no untoward symptoms on board ship, and was admitted to the hospital in good condition considering the gravity of his cardiac condition.

The present trouble began, Feb. 1, 1919, following exposure, with indefinite pains in the right lumbar region which were aggravated by standing, and with inability to use the right leg. For a few weeks previously the patient had had a slight cough and occasional night sweats, and had lost some weight.

* From the medical wards, U. S. Army Debarkation Hospital No. 5 Grand Central Palace, New York City.

Physical Examination.—On admission, the head and neck were negative. The pupils were equal, and reacted to light and accommodation. The throat was negative, and there was no enlargement of the thyroid gland, but there was visible pulsation in the vessels of the neck. Examination of the lungs revealed the presence of a few moist râles over both bases, posteriorly.

The left border of the heart extended two finger breadths to the left of the midaxillary line. The apex beat was located in the fifth intercostal space to the left of the nipple. A systolic murmur was heard at the apex, and transmitted to the left axilla. A diastolic murmur was heard over the aortic region, and transmitted downward over the sternum. The heart was fully compensated.

The patient had a peculiar "waxy complexion," which persisted up to the time of his death. He gave one the impression that he was suffering from a very grave form of anemia.

Examination of the blood, March 12, revealed 3,270,000 red cells, 11,000 leukocytes, and 90 per cent. hemoglobin. The cellular structure was normal. Differential leukocyte count revealed 89 per cent. polymorphonuclears, 4 per cent. small mononuclears, and 11 per cent. large mononuclears. Blood cultures on the same day showed the presence of a pure culture of *Streptococcus viridans*.

Urinalysis, March 4, revealed clear, amber urine of acid reaction; the specific gravity was 1.018; there was a trace of albumin; no sugar was detected; there were a few granular casts. Urinalyses, March 6, 10 and 11, revealed no change.

Clinical Course.—From March 4 to 9, the patient's condition remained about as described. March 10, at 10 a. m., the patient very suddenly complained of severe dyspnea. The pulse rate was 140, the air hunger was very marked, and he was covered with a profuse perspiration. The extremities were cold, and the patient complained of chilliness. After the application of heat he appeared to be more comfortable and less dyspneic.

March 11, he had another very severe attack of dyspnea, and showed signs of collapse. The forenoon of the following day, he had another severe attack of dyspnea and was extremely restless. This dyspnea was followed by a sudden onset of cyanosis, and the patient died at noon, March 12.

Necropsy Findings.—Necropsy was performed one hour after death. The skin was very pale and somewhat emaciated. There were no scars or markings on the body.

The head was not opened. The abdomen and chest were opened by the usual incision. Very little subcutaneous fat was present, and the muscles were fairly well developed.

The pericardium was adherent to the parietal pleura. The tissue was seared, and a sterile pipet was thrust into the pericardial sac and about 10 c.c. of fluid withdrawn for culture. This culture showed the presence of a pure culture of *Streptococcus viridans*. The pericardial sac was then

opened and about 500 c.c. of clear, straw-colored fluid were withdrawn.

The heart was seared, a sterile pipet thrust into the left ventricle, and about 5 c.c. of blood were withdrawn for culture. This showed a pure culture of *Streptococcus viridans*. The heart was enlarged about two and a half times the normal size. The muscular structure was poor, and the muscles were somewhat flabby. The left ventricle was hypertrophied. In the heart, postmortem clots were found in abundance. The pulmonary and tricuspid valves were apparently normal, while the aortic valves were greatly thickened with dense vegetations, and their margins were very irregularly perforated. One of the cusps of the aortic valve showed a perforation which admitted the tip of the little finger (Fig. 1). There were small, warty vegetations on the wall of the aorta. The mitral valve showed the presence of vegetations similar to those seen on the aortic valve.

One of the cusps of the mitral valve was so sacculated that the sac would admit the thumb. There was a perforation at the bottom of the sac (Fig. 2), and warty vegetations on the chordae tendineae and papillary muscles, and above the walls on the wall of the left auricle.

There was one dense adhesion to the surface of the chest wall at the upper part of the lower lobe of the lung on the left in the midaxillary line. There was marked anthracosis. The bronchial glands were somewhat enlarged.

The liver was mottled and slightly enlarged, and there were numerous soft adhesions to the surrounding structures. The spleen was about two and one-half times the normal size. There were many adhesions and a small cyst with a thick capsule and filled with necrotic material. Both kidneys were adherent to the surrounding structures by firm adhesions. They were slightly enlarged and congested, with small petechial areas on the surface.

Microscopic Examination.—The lungs, heart, spleen, liver and kidneys were removed for microscopic examination.

Sections of the lungs showed that many of the alveoli were filled with desquamated epithelial cells, some of which contained a brown, finely granular pigment. A few of the bronchioles were also filled with epithelial cells. The blood vessels were not dilated, and there was no thickening of the alveolar or bronchial walls.

Near the pericardial surface of the myocardium was an area containing many small blood vessels and small round cells. The muscle fibers had been replaced by scar tissue, which was believed to be a small healing infarct. The myocardium otherwise seemed normal. The pericardium showed no change. Section of one of the aortic leaflets revealed the surface covered with great masses of fibrin, in the meshes of which polymorphonuclear leukocytes were entangled, and in and on the surfaces of which there were also enormous masses of bacteria. Some of the fibrin had undergone hyalinization. With the Goodpasture-Weigert stain the bacteria were found to be gram-positive cocci in long chains.



Fig. 1.—Perforation of mitral valve (A) and aortic valve (B) in malignant endocarditis.

In one of the sections of the spleen, many small areas of coagulative necrosis were seen. The pulp contained many leukocytes. The connective tissue was not increased. In another section there was a large infarcted area containing great colonies of bacteria. About this area there were many pigments containing phagocytes. There was much fibrous tissue about the margin of the infarct.

The cells about the portal areas of the liver were very much swollen and granular. About the hepatic vein the parenchyma cells were necrotic, and there were rather dense accumulations of leukocytes. In some of the areas the necrosis was not so marked, and in these the nuclei of the cells had disappeared; and there were many fat droplets within the cells. There was no increase in the amount of connective tissue, and the bile ducts seemed normal.

In one of the kidney sections, the epithelial cells of the tubules were very much swollen and granular, giving the lumen of the tubules a ragged or stellate outline. There was

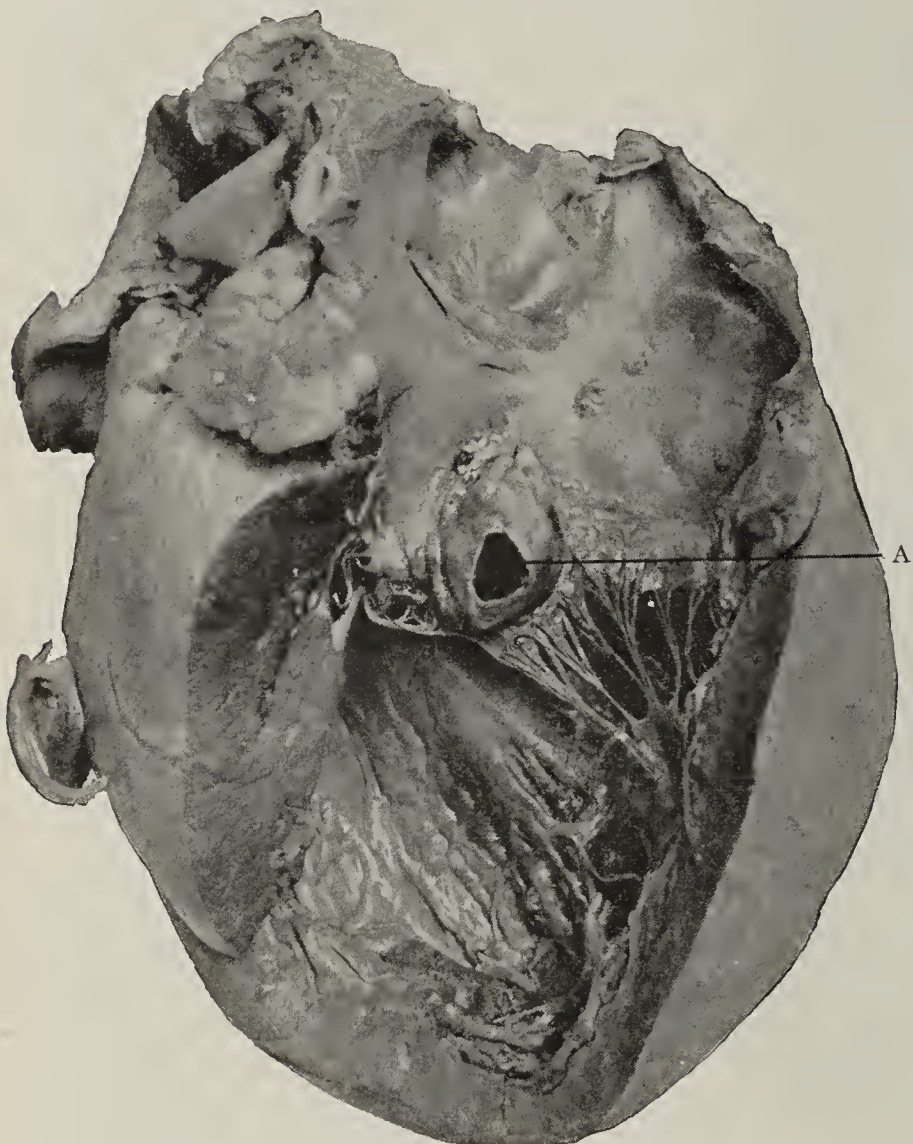


Fig. 2.—Heart in malignant endocarditis: A, perforation of mitral valve.

no increase in the interstitial tissue. A small hyaline thrombus was found in one of the glomeruli. In another section, there was seen in addition to the changes mentioned above an area of coagulative necrosis. There was a moderate accumulation of leukocytes at the margin of the infarct.

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Vomiting and Pyloric Stenosis.—Pyloric stenosis requiring surgical measures for its cure may exist many months or years without any vomiting at all, the patient's symptoms being merely those of more or less severe indigestion and discomfort. Experience teaches that the stomach begins to reject its contents only when the stenosis has been existing for a fairly long time; that in the earlier stages—when the condition is all the better for operation—the stomach does its level best to carry out its duty of driving the food along through the narrowing pylorus, only later giving up the effort and ejecting the food by periodic vomiting as the easier alternative.—Herbert French, M.D., F.R.C.P., *Medical Press and Circular*.

OPERATIVE TECHNIC IN SPINA BIFIDA *

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In few operative procedures is the mortality, both immediate and secondary, as high as that of spina bifida. The immediate death rate from shock, meningitis, etc., is approximately 33 $\frac{1}{3}$ per cent., while the secondary mortality from hydrocephalus, convulsions, etc., is equally great, resulting in an ultimate loss of from 60 to 70 per cent.¹ of the patients. According to Hildebrand² only about 39 per cent. make complete recoveries. Judicious selection of cases for operation, followed by rational, conservative technic would surely do much not only to reduce this discouraging mortality, but also to establish the surgery of spina bifida on a sound basis.

This very obvious point has been quite clearly set forth in the majority of writings on the subject. Thus, Beckman and Adson³ emphatically advise against operations associated with marked hydrocephalus or paralysis of the lower extremities unless, in the first instance, the hydrocephalus is either allowed to become stationary or is relieved, for example, by puncture of the corpus callosum; and in the second instance, unless it is understood by all concerned that operation will have no remedial effect on the paralysis. Thorburn⁴ and Tubby⁵ of England agree with these authors and enumerate frequent instances in which operations for spina bifida associated with hydrocephalus markedly aggravated the hydrocephalic condition.

Excluding, therefore, all cases associated with an increasing hydrocephalus as at least temporarily inoperable, we are reduced to: (1) operations on simple meningoceles in which the prognosis, if precautions hereinafter mentioned are observed, should be good, perhaps below 5 per cent., and (2) operations on meningocele and syringomyelocele, which are performed with little hope of remedying the paralysis and with the purpose only of removing a deforming tumor and preventing subsequent ulceration and rupture.

In the latter cases, despite the disappointing results in regard to paralysis, operations may be said to have a quasi justification, since few children thus afflicted ever reach maturity if not operated on; moreover, an unsightly tumor is removed. In the meningoceles, there is no contraindication to operation so far as the local condition is concerned, and no apparent reason why low mortality and good operative results cannot be secured in any of the three varieties of this group, as described in the excellent classification of Binnie⁶:

A. A defect of the posterior osseous wall of the spinal canal is present. The skin, spinal membranes and cord are intact. There is a hernia of the dura through the osseous defect. Fluid in greater or less quantity is present in the dilated subdural space.

B. The conditions are the same as in A, except that the arachnoid is involved in the hernia, and the collection of fluid is in the subarachnoid space.

* Read before the Western Surgical Association, Kansas City, Dec. 5, 1919.

1. Albee, F. H.: *Orthopedic and Reconstruction Surgery*, 1919.

2. Hildebrand: *Verhandl. d. deutsch. Gesellsch. f. Chir.*, 1893, p. 69.

3. Beckman, E. H., and Adson, A. W.: *Collected Papers*, Mayo Clinic, Philadelphia, W. B. Saunders Company, 1917.

4. Thorburn, W.: *Oxford Surgery*, 3.

5. Tubby, A. H.: *Deformities*.

6. Binnie, J. F.: *Operative Surgery*, Philadelphia, P. Blakiston's Son & Co., p. 716.

C. A defect exists in the dura as well as in the bone. Through these defects there protrudes a hernia sac consisting of the arachnoid. The skin, pia and cord are intact.

OPERATIVE TECHNIC

By transillumination, as used in hydrocele, one can determine with a fair degree of accuracy whether the sac contains nerves or cord, or both. At times, however, this may be misleading because of thickening and

posture of the operator has advantages which are obvious and important.

The first step of the operation consists in the taking of every precaution against the contamination of the wound. The importance of this cannot be overestimated, because the one imminent postoperative danger in spina bifida is meningitis from wound infection. Contamination is made especially dangerous because often the site of the wound not only lies near the anal



Fig. 1.—Suturing lower curved border of rubber dam protective to the skin of child's back: first step in making water-tight barrier against contamination of wound from excreta.

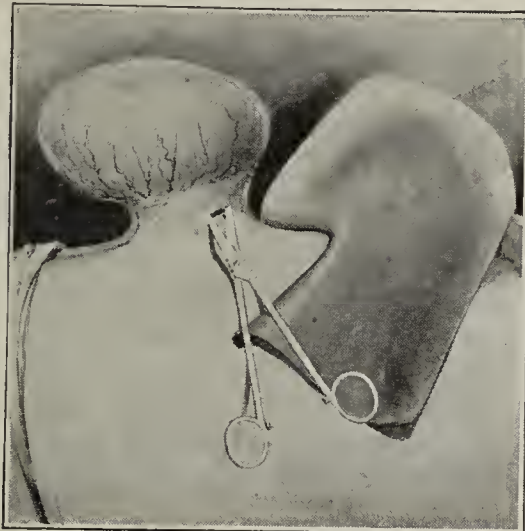


Fig. 2.—Circular incision begun in the collar of true skin which is present in most meningoceles. This circular incision to free the sac neck is conveniently and safely done by scissors-spreading dissection.

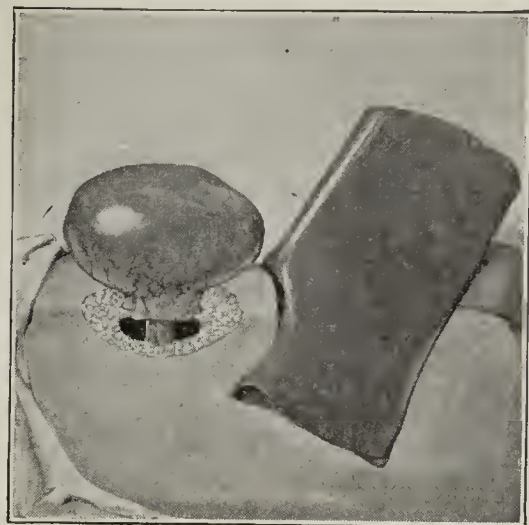


Fig. 3.—Circular skin and fat incision complete, and neck of sac free.

irregularities of the sac wall. In such cases application of a weak faradic current to various points on the sac may be of some diagnostic aid. Most frequently, however, the diagnosis of meningocele depends directly on clinical evidence, such as clubfoot, partial or complete paraplegia, or defective sphincter control, some of which are nearly always present in a greater or less degree if a nerve is involved in the sac.

It is usually advised to place the child in the ventral Trendelenburg position or in the hanging position of Babcock in order to prevent or reduce to a minimum the escape of cerebrospinal fluid following incision of

region, but because it also lies in the direct groove along which the infant's urine and feces are most likely to extend. Tubby,⁵ in discussing contraindications to operations in spina bifida, emphasizes that "lumbosacral tumors must be approached with caution because of the difficulty of avoiding fecal and urinary contamination." With this in mind, I place a piece of rubber dam over the tumor, and suture its lower border with fine chromic catgut to the skin of the child's back. The suture material, if quite fine, will allow of from eight to ten incursions and excursions of the needle to each inch of skin traversed. By reinforcing with collodion, this

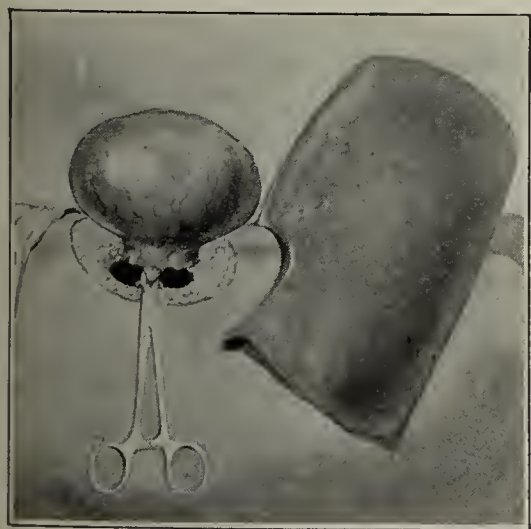


Fig. 4.—Rubber-covered light intestine clamp applied to neck of sac to prevent escape of cerebrospinal fluid and entrance of infection.

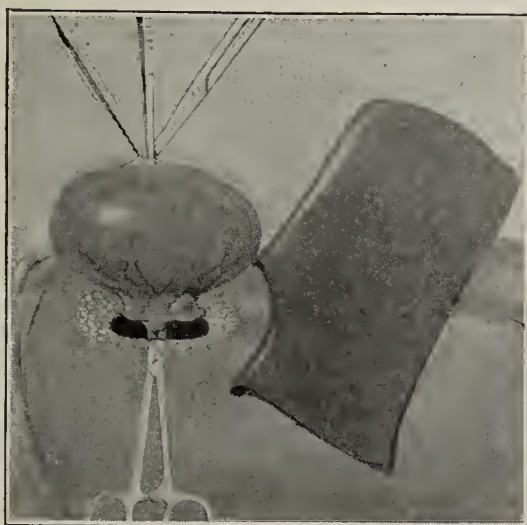


Fig. 5.—Opening sac at thin and unusually transparent vertex of tumor.

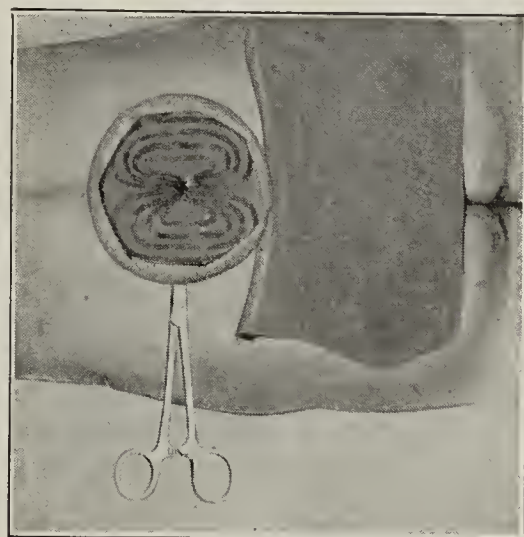


Fig. 6.—If cord elements, as shown diagrammatically here, are present in sac, they can be freed while clamp offers protection against infection and escape of fluid, although the chance of benefit to paralysis resulting from operation in myelocele is practically nil.

the sac. This step, of course, is of considerable importance, but I prefer in its place the expedient of applying a light rubber-covered clamp to the neck of the sack, as is hereinafter described and advocated. With this step in view, the child is placed in the ventral recumbent position with the operator and his assistant seated on opposite sides of the operating table. In this, as in other delicate and minute surgical operations, the sitting

suture line may be made water tight. The rubber dam is then turned downward, and the second procedure is begun.

This step consists in dividing the circular collar of true skin which usually is present about the base of the tumor. The tumor may, of course, in the first variety of meningocele, have a covering of true skin; but in

those cases in which the tumor has no external covering except a very thin skin epithelium, there is nearly always a collar-like base of thick skin through which the true sac extrudes. By the employment of the scissors-spreading method of dissection, the circular incision through the skin at the base of the tumor may be made with little danger of the escape of fluid. The neck of the sac is then exposed as is the neck of the sac of the umbilical hernia in the Mayo operation, and is freed of all fat and connective tissue. The sac is then grasped between the rubber-covered jaws of a pair of light, delicate intestinal forceps.

The use of these clamps may be considered as of the highest importance in the surgery of spina bifida. It has been the practice, as mentioned above, to place the child either in the ventral Trendelenburg posture or in the hanging position of Babcock in an effort to minimize cerebrospinal fluid leakage. The clamps, however, preclude such leakage with much greater certainty than does position, and in addition they are a valuable agent in excluding infection from the spinal cord. It may be contended that clamps will traumatize whatever nerves may be present in the sac. In respect of this point it should be noted, first, that whatever

most likely to encounter cord and nerve structures in the median line. This is clearly a proper precaution unless one has been able to establish the diagnosis of meningocele beyond any doubt. If, however, the sac is opened at any point by a very small incision which is enlarged by scissors-spreading dissection, cord and nerves may be saved from trauma. If on opening the sac it is found to be free from nerve elements, a stout ligature is applied under the clamp jaws, the sac is cut away, and the clamp is removed.

The ligation of the sac, just mentioned, is performed as in inguinal hernia. Several writers, notably Bayer⁷ and more recently Beckman and Adson, have called attention to the analogy between spina bifida and inguinal hernia. I am of the same impression and believe, in addition, that the operative treatment, when possible, should be similar.

If the opened sac is found to contain cord or nerve tissue, these structures may in some instances be removed by blunt dissection, while the light clamp is still in place to prevent the escape of fluid and the entrance of infection. If necessary, the bony defect of the vertebral column may be enlarged to admit of such replacement. This removal of bone can be accom-

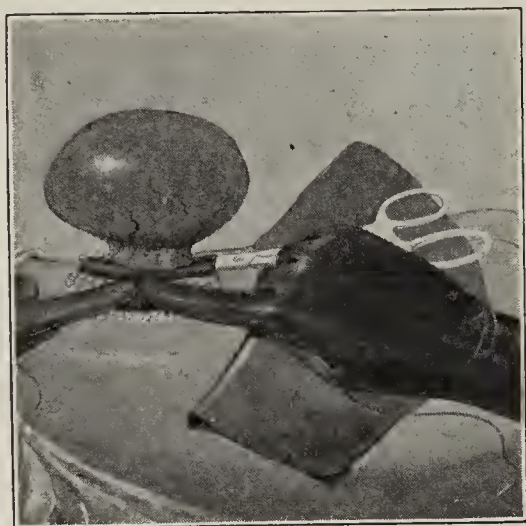


Fig. 7.—Tying stout transfixing ligature about base of sac, as in other forms of hernia.

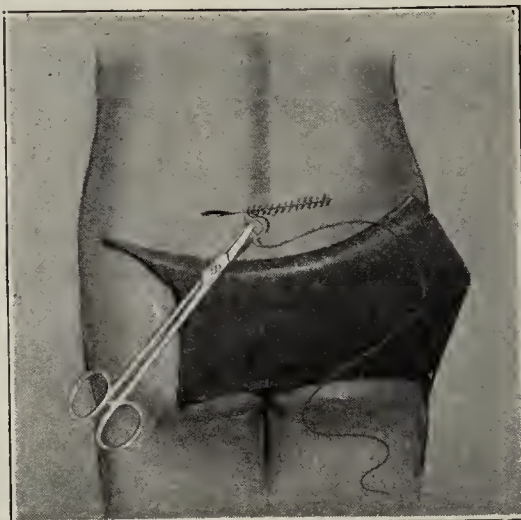


Fig. 8.—Closing skin wound with running suture of chromic catgut reinforced with collodion.

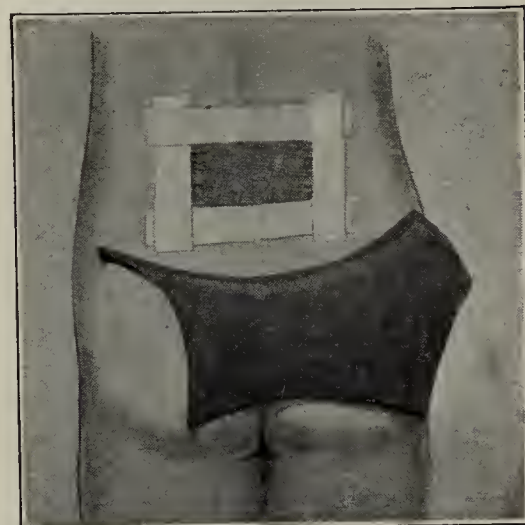


Fig. 9.—Gauze square covering wound; edges strapped with adhesive plaster painted with collodion.

nerves are present in the sac will probably never functionate even if replaced, and secondly, that the brief application of such delicate clamps will no more cause permanent nerve injury than will gastro-enterostomy clamps injure the stomach, or obstetric forceps injure the fetal head.

The advantages presented by any method which assures against loss of cerebrospinal fluid should not be overlooked. Thorburn⁴ calls attention to this fact, saying, "It is in connection with this portion of the operation that its principal dangers—shock from profuse flow of cerebrospinal fluid or interference with nervous structures and meningitis—arise, and great caution should therefore be used to avoid a sudden escape of contents." Further he advises that "the upper end of the sac should be compressed with gauze to prevent a gush of fluid from the spinal cord." In addition to the advantages of the clamp method as just presented, the application of a rubber-covered light clamp greatly facilitates the replacing of the nerve elements in meningocele.

With the neck clamped, the sac is opened by snipping it through the thinnest part, which is usually at the vertex of the tumor. Binnie⁶ advises against opening the sac at this point since in meningocele one is

plished while the clamp is still applied. I have encountered cases in which the spinal canal was not large enough to receive the cord and nerve elements completely and others in which it was impossible to separate the thick ribbons of cord tissue from the sac. It is, of course, well understood, as mentioned previously, that operation in such cases promises little or nothing so far as relief of paralysis is concerned.

After the neck of the sac is tied and the clamp removed, no attempt is made to close the bony defect by an osteoplastic operation. The danger of this step probably offsets the few and doubtful advantages it may provide. I have known of no recurrences of this form of hernia which might be traced to the omission of this step; I have found no record of such an accident, and I believe it must be rare. The muscles are drawn together over the stump of the sac, and the skin wound closed with a continuous suture of fine chromic catgut, either transversely or longitudinally, depending on which is the more easily accomplished. Hemostasis should be complete.

Procedures directed against wound contamination, which were begun by stitching of the rubber dam to the child's back, are now completed. Collodion is

7. Bayer, C.: Ztschr. f. Heilk., Berlin, 18: 405, 1897.

applied over the wound line. Over this a strip of gauze is placed, and its edges glued to the skin with adhesive plaster straps. This gauze and adhesive plaster are then painted with the collodion solution, after which the rubber dam protective is drawn up and laid flat on the back, and its three remaining margins are glued to the skin, as was the underlying gauze, by adhesive plaster straps. Next a small triangular piece of adhesive plaster is so applied that a sharp point passes downward between the buttocks, with the base of its triangle overlying the straps of adhesive plaster securing the lower border of the rubber dam. The adhesive plaster is then covered with collodion so that the zone of operation is sealed against infection by excreta.

In certain rare forms of spina bifida, as in spina bifida occulta, the suggestions offered in this paper are, of course, without value. However, in one rare form, the anterior meningocele, a successful operation for which is reported by S. Roux,⁸ the use of the clamp might remove many inconveniences. In the several forms of meningocele, it is submitted that the application of the light clamp will facilitate and render more safe the additional steps required in the attempt to deal in a radical way with this condition. With the simple meningocele it is believed that the careful application of the technic herein embodied will make the operative mortality of this form quite as low as that in the analogous condition of inguinal hernia.

CONCLUSIONS

1. Spina bifida associated with increasing hydrocephalus is inoperable.

2. Operation should be performed in cases of spina bifida associated with paralysis only for the purpose of preventing subsequent ulceration and rupture.

3. A rubber dam sutured at one margin to the skin below the tumor, adhesive plaster, and plentiful collodion should be used to prevent fecal and urinary contamination.

4. A light, rubber-covered clamp applied to the neck of the tumor is the safest method of preventing the loss of cerebrospinal fluid and also of excluding infection from the cord.

5. The sac can usually be tied off as in inguinal hernia.



Fig. 10.—Rubber dam drawn up over wound and secured at edges with adhesive plaster straps coated with collodion.



Fig. 11.—Inverted position used by Babcock to prevent sudden escape of cerebrospinal fluid.

to wash it away, and at the same time the spasm of the muscles of the eyelids is probably due partly to an effort to expel the foreign body, as well as to protect against further injury.

In endothelial lined cavities or in solid tissue there is an attempt to wash away foreign irritating matter. This is done by the pouring out of serum from the lymph circulation in the neighborhood of the foreign substance, which is accomplished by the reversal of the circulation in the local lymphatics, so as to empty their contents around the irritating material. This is really the chief basis of surgical drainage.

In surgical drainage, mechanical measures that are followed by fortunate results would appear ridiculous if no biologic conditions existed. In preventing infection of a fresh raw surface, or in the so-called walling off of healthy tissue from the products of infection, gauze is often placed over the raw surface or as a coffer-dam in the abdominal cavity, and an abscess is drained through the center of this gauze packing. If we could convert this into a mechanical proposition and imagine that the pus was a solution of methylene blue and that it was flowing over this raw surface which had been covered with absorbent gauze to pre-

SURGICAL DRAINAGE FROM A BIOLOGIC POINT OF VIEW*

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The biologic defenses of the body against disease, trauma and the wear of age are wonderful, but they are not perfect. If they were perfect, man would live forever. Particularly interesting is the manner in which the body protects itself against injurious foreign substances. The epithelial lined body cavities have more or less specialized methods of protection. The stomach, for instance, by vomiting emits food that is spoiled, and many drugs that are irritating or disagreeable to the taste, and sometimes even rejects substances that are thought to be nauseating or noxious even though they are not. The excessive salivation when nausea occurs probably tends to dilute the offensive material, or to protect the walls of the mucous membrane. Vomiting undoubtedly is a habit that was acquired in the early days of evolution. The more refined drugs or poisons that are a result of chemical manufacture have not created a similar defense by the stomach, and are often retained.

Foreign irritating substances in the rectum, the bladder or the larynx are also expelled by muscular action. Irritating matter in the nose causes a profuse secretion, which tends to wash away the offending substance. An irritating foreign body in the eye causes at once a flow of tears in an effort

8. Roux, S.: Rev. méd. de la Suisse Rom. 38: 47 (Jan.) 1918.

Civil Versus Military Syphilis.—All returning Canadian soldiers whose military history sheets bear the record of venereal disease are given the Wassermann test before being discharged. In August, 1918, 2 per cent. of those returning reacted, all tertiary, noninfectious cases, for no primary or secondary cases are permitted to return. The average number of reactions in the civil population is estimated at from 1 to 12 per cent., showing four to six times as much syphilis in the civil population as in the army. It is not the civil population that has to fear the soldier, but the soldier the civil population.—Adami, *Canad. Med. Assn. Jour.*

* Read before the Southern Surgical Association, New Orleans, Dec. 18, 1919.

vent contamination, we know that both the gauze and the wound would be deeply stained. However, this method of protection does act in a beneficial manner, and a clean wound is often by this means kept from septic infection. The drainage of a peritoneal abscess is practically always up-hill and is usually successful. If mechanics were the only principle, how could an appendical abscess ever be drained by putting a tube down to it through the abdominal incision? The whole method of drainage really depends on the reversal of the circulation in the local lymphatics and is chiefly a biologic process. It is nature's effort to extrude a foreign substance.¹

A splinter in the finger which becomes mildly infected will discharge a thin seropus for days. This is nature's effort to expel the splinter. After it has been removed, the wound rapidly closes; and the lymph circulation, which was in part at least reversed in an effort to extrude the splinter, assumes its normal course, and probably in twenty-four hours after the splinter has been removed there is no further discharge.

The peritoneum and its underlying structures in the abdominal cavity constitute an enormous lymph space, and the lymph is here abundantly poured out in response to an irritation. The insertion of a drainage tube causes a reaction in which there is a flow of lymph in an effort to expel the drainage tube. Drainage of the abdominal cavity prevents positive pressure in the septic region, and also the drainage tube is a stimulus for a reversal of the lymphatic circulation. The packing of a fresh wound with gauze causes a similar reversal of the lymphatic circulation; and though pus may flow over this gauze from a deeper focus, the lymphatics, instead of absorbing the pus, pour out lymph into and around the gauze to extrude it. The beneficial action of the cigaret drain, which is soon clogged with coagulated lymph, is comprehensible when we look on it as a stimulus for reversal of the local lymphatic circulation.

In regions of the body in which the lymph supply is less abundant than it is in the abdomen, unless the infected focus is very small it will be necessary to utilize gravity when instituting drainage, because there is not a sufficient flow of lymph to flush the septic cavity thoroughly and constantly, as is the case with abdominal drainage.

Drainage in surgical operations may be classified under three heads:

CLASSIFICATION OF SURGICAL DRAINAGE

1. Drainage of solid tissue or endothelial lined cavities:
 - (a) Drainage of endothelial covered tissues of the abdominal cavity.
 - (b) Drainage of other endothelial lined cavities, as pleura, joints.
 - (c) Drainage of solid soft tissue, as muscle, fascia, fat.
 - (d) Drainage of bone.
2. Drainage of inflammatory products from infected epithelial lined hollow viscera, as the gallbladder and the urinary bladder.
3. Drainage of hollow viscera in order to restore function or to secure physiologic rest.

1. DRAINAGE OF SOLID TISSUE OR ENDOTHELIAL LINED CAVITIES

Considering first 1a, drainage of abdominal abscesses, we find, as has already been stated, that the abdomen has an enormous supply of lymph and that the successful drainage of an abscess in this region

consists, first, of relieving the pressure in the abscess cavity by opening it and inserting a drain; and, second, of inducing a sufficient reversal of the lymph circulation by the presence of the drainage material to cause much of the septic products to be washed away along the drainage track. If the drainage material reaches the abscess cavity so that the pus is not under positive pressure, and if the drainage is sufficient in amount and of the proper kind to act as a stimulus for reversal of the lymphatic circulation, so much lymph is poured out that practically a continuous irrigation is going on from the local lymphatics along the tube or track of the drainage material, and it is a matter of but little importance whether the drainage material is pointed up or down. But in other endothelial cavities (1b), such as the pleura or the joints, where the lymphatic supply is much smaller than in the abdomen or where the configuration is such as to make the drainage difficult, gravity must aid and the problem becomes more mechanical than biologic. Drainage here should be at the lowest point possible.

Drainage carried down to the sutured bowel frequently results in a fistula, particularly if gauze in the form of a cigaret drain is employed. The reversal of the lymphatic circulation in the neighborhood of a recently sutured intestinal wound, which will direct the current of lymph to the drainage, interferes with the normal process of repair in the intestinal wound, causes a weak fibrinous deposit, and diminishes the nutrition of the repairing bowel; consequently, the suture readily break down and a fistula results.

In drainage of muscle, fascia and fat (1c), gravity drainage must be considered, but the biologic problem is also prominent. An abscess in the thigh heals better if gravity drainage is instituted. The drainage material should be sufficient not only to carry off the secretion but also to excite the local lymphatics to reverse their circulation. The local lymphatics, being much less abundant than in the abdomen, cannot usually furnish enough lymph to cause the flushing out of the septic products, as occurs in the abdomen. In rapidly spreading inflammation, wide incisions and drainage are useful in relieving the pressure that is made by the binding fascia or skin, and in reversing the circulation of the lymphatics and so preventing absorption of much of the septic products into the main lymphatic trunk.

The old operation of "fence rail" incisions along the margin of an advancing erysipelas causes the pouring out of lymph from these cuts and the diversion of the lymph current, which would otherwise carry the septic products to further uninfected regions. The undermining of the skin and insertion of tubes or gauze drainage from point to point make the pouring out of lymph along the drainage material even greater than after a simple incision.

That the reversal of the circulation is the chief biologic process by which surgical drainage acts beneficially in solid soft tissue can also be recognized when there is a small abscess in a large amount of inflammatory exudate and it is impossible to locate the small abscess cavity. If a drain is placed in the immediate neighborhood of the abscess, it frequently opens into the drain. It seems probable that this occurs because the lymphatic current attempts to extrude the drain and so the products of the abscess are carried in this direction, and the abscess burrows to the tube.

The drainage of tissues whose lymphatic trunks have been clogged and where, consequently, edema is present depends on an effort to increase the lymphatic circulation.

1. Horsley, J. S.: The Value of Biologic Principles in Surgical Practice, J. A. M. A. 72: 1263-1266 (May 3) 1919.

tion or to create new lymphatic connections. In the operation of Handley in which long threads of silk are placed under the skin in edema of the arm, lymphatic channels form along the threads. In the operation of Kondoleon, the deep fascia of the arm or leg is split in order to promote an anastomosis between the deep and the superficial sets of lymphatics and so to divert the lymph current from the superficial to the deep lymphatic trunks.

Local edemas that are persistent are usually caused by blockage of the lymphatic channels and not by interference with the blood circulation. The edema that sometimes appears in the arm after a radical operation for cancer of the breast in which the axilla is thoroughly dissected is due to the removal of the lymphatics. If this immediately follows operation, it may disappear when the collateral lymphatic circulation is established; but when a late edema results it is frequently because the lymphatics have become plugged with cancer cells; and such an edema is ominous. Resection of the axillary vein if the lymphatics are in satisfactory condition is followed by but little if any swelling in the arm, and that of a temporary nature. A phlebitis causes edema only when the lymphatics around the vein are involved in the inflammation.

Drainage of wounds after radical operations for carcinoma in solid soft tissue should always be done. This is not so much in order to carry off the fluids that may accumulate in the wound, as an effort to reverse the circulation of the lymphatics which may be induced to pour out their contents in the direction of the drainage tube and so to discharge through this drainage cancer cells that have been left in the wound or that may have lodged in the open lymphatics. This is an important step in many radical operations for cancer, as after operations in the neck or on the mammary gland.

Drainage of bone (1 *d*) involves problems of a somewhat different nature, because of the structure of bone. Bone is compact, rigid tissue in which lime salts are arranged in an orderly way. On account of the rigid structure it is impossible for either the blood vessels or the lymphatics to form, or for the lymph current to reverse as readily as in soft tissue. Before drainage can be accomplished or any effective stand against infection can be made, the lime salts must be removed, so converting bone into what is practically soft tissue. For this reason, in areas of inflammation bone is always soft. Around an irritating substance in bone, whether accompanied by infection or not, lime salts are absorbed. When this is accomplished the offending material becomes loose and is prepared for extrusion. If, for instance, a piece of iron, as a screw used in plating bone, is inserted into a bone, the lime salts in the neighborhood of the screw and of the plate are absorbed. The screws, which may have been very tight and firm when inserted, gradually become loose. This induced osteoporosis around the screws and the metal plate is just the reverse of what is desired when a fracture is to be repaired, and it accounts for the frequency of nonunion after the plating of bones.

The numerous so-called abscesses at the roots of teeth are probably often the result of the reaction of the bone in the neighborhood to some material that was used in filling the cavities in the roots of the teeth. Undoubtedly apical abscesses frequently occur, but it is probably equally true that an osteoporosis sometimes interpreted as an apical abscess may be sterile and due

to the reaction of the bone to the material with which the root of the tooth has been filled.

Because of the poor lymphatic supply of bone and its rigid walls which protect its vessels, a bone abscess may be more readily disinfected by means of strong antiseptics, such as phenol (carbolic acid), than if the abscess were in soft tissue. Here, as disinfection can be more thorough, the necessity for full drainage in the milder chronic infections of the bone is not so great if the diseased bone has been removed as it would be in soft tissue. Consequently, "fillings" or "bone plugs" are utilized.

2. DRAINAGE OF INFLAMMATORY PRODUCTS FROM INFECTED EPITHELIAL LINED HOLLOW VISCERA, AS THE GALLBLADDER OR THE URINARY BLADDER

Drainage here involves principles different from the drainage of an abscess that has formed in solid tissue. This drainage not only is for removing the products of infection, but serves a double purpose of also giving physiologic rest to the infected organ. The drainage of a septic gallbladder that may be filled with pus carries off the products of the bacteria and at the same time gives rest to the gallbladder by preventing distention, and this removes both a stimulus for contraction and the tension that would occur on the distended walls. Drainage of this type does not have to be gravity drainage. If a sufficient opening is provided in the general axis of the peristaltic current, it is all that is necessary. In draining an infected urinary bladder, for instance, an opening made at the top of the bladder is as satisfactory in securing results as an opening at the bottom.

When these hollow muscular organs are contracted, a small opening will insure the viscera keeping empty if it is made in due regard to the action of peristalsis. Even in such instances, however, the beneficial action of the drainage is not solely removal of the contents of the hollow viscera or the giving of physiologic rest. It seems highly probable that reversal of the lymphatic current is also of importance here. This appears to be borne out by the results of drainage of the bile tracts in inflammation of the pancreas. It is well known that chronic pancreatitis can best be treated by prolonged drainage of the bile tracts; and drainage of the common bile duct for this affection seems to be particularly effective.

The work of Deaver and Pfeiffer² on pancreatic and peripancreatic lymphangitis is interesting in this connection. They call attention to the anatomy of the lymphatic supply of the pancreas and its ultimate connection with the lymphatics of the bile tracts and gallbladder. They say:

To the objection that infection to be carried into the pancreas must stem the efferent lymph current and force the valves, the answer can be made that every one has seen infection in cellular tissues proceeding in a reverse direction to the lymph current. Thrombolympangitis readily diverts the normal lymph course, and infection easily destroys valves. The force of pathology here, as in so many other instances, perverted the normal function.

If infection of the pancreas can be through the lymphatic supply from the gallbladder or the galltracts, as Deaver and Pfeiffer assert, it seems that the method of relieving this infection is to reverse the lymphatic current and cause it to be diverted toward the drainage tube and the incision in the gallbladder or in the com-

2. Deaver, J. B., and Pfeiffer, D. B.: Pancreatic and Peripancreatic Lymphangitis, *Ann. Surg.* 58: 151-163, 1913.

mon duct, just as the lymph flow is reversed in the drainage of an abdominal abscess. Septic products that would be carried in the lymphatics from the infected gallbladder to the pancreas are thus diverted to the drainage tube in an effort to extrude it. If this diversion can be maintained sufficiently long to permit nature to build up the resistance of the pancreas to the infection and repair the damage already done, the patient may be considered cured. But if the drainage tube is removed too soon, there is no further stimulus for a reversal of the lymph circulation, and the pancreatitis recurs.

Too early resumption of function after drainage of inflamed hollow viscera frequently results in a recurrence of the inflammation. This may be due to one of three causes, or more probably to a combination of these causes: 1. There may be an accumulation of secretion that is not free from the products of the inflammatory process. 2. There is an interruption of physiologic rest. 3. There is a change in the lymph current from that which had been instituted by the drainage.

3. DRAINAGE OF HOLLOW VISCERA FOR PHYSIOLOGIC REST

In enterostomy, the operation may be done to sidetrack the normal contents of the hollow viscera and so to afford less work for the diseased tissue below the point of opening, as in colostomy for disease of the large bowel farther down. Drainage may be instituted to prevent distention of a hollow viscus and so induce rest in order that an operative wound may heal. This principle is put into practice in such operations on the bladder as for vesicovaginal fistula when a self retaining catheter is placed in the urethra, and in the introduction of a tube through the rectum and through the site of resection of the sigmoid or left colon in order to draw off the gas and prevent distention in the region of the operation. This principle of drainage is often utilized after the removal of stones from an uninfected gallbladder.

DRAINAGE MATERIAL

The material for drainage must be considered not only with regard to transporting the products that are to be drained, but also with regard to the biologic influence of the drain on the local lymphatics. Certain substances call for a more pronounced flow of lymph than others. Rubber, for instance, is not so irritating to tissue as gauze. When gauze is placed over a raw surface, the local lymphatics pour into the gauze quantities of lymph. This is nature's effort to extrude an irritating foreign substance. When the lymph has coagulated, the meshes of the gauze become entangled with the wound; and an effort to remove the gauze before this fibrin has softened results in tearing the delicate tissues of the wound and injures its granulations, causing bleeding. An ideal drainage material would be one which, on the one hand, is a pronounced stimulus for the lymph to be poured out along the drain, and, on the other hand, would not be sufficiently attached to the raw surface of the wound to injure it. This material has not yet been found.

Rubber drainage tubes are frequently used, and have the advantage of draining off inflammatory products readily; but they do not provoke such an outpouring of lymph as gauze would. Naturally, however, the larger the tube the greater the irritation, and the more pronounced the stimulus for a reversal of the circulation of the local lymphatics. Consequently, for draining an

abdominal abscess, it is often found that a large tube does better than a smaller one, not because the smaller one is insufficient to carry off the serum or the pus, but because the small tube is not large enough to provoke a sufficient amount of reaction among the local lymphatics. Frequently the advantages of both gauze and rubber are combined by placing a gauze strip inside the tube or by wrapping strips of gauze in rubber tissue or rubber dam, which is called a "cigaret drain," and using this in addition to a tube. In this way the gauze which is exposed at the end of the cigaret drain causes a more pronounced flow of lymph than the rubber tube alone could produce, and the tube drains away the lymph that is thrown out to extrude the gauze and the tube. Drainage material should not remain too long in a wound, else it will act as the infected splinter mentioned above.

Combinations that are effective have been worked out to a large extent empirically. Sometimes strands of catgut, silkworm-gut, or strips of rubber tissue are inserted into a wound in which it is anticipated that there may be a collection of serum or broken down fat on account of the nature of the wound. This foreign substance, the drainage material, directs the current of the lymphatic flow toward itself and so prevents an accumulation in the tissues which might later become a culture medium for bacteria. An opened superficial abscess often needs no drainage material, for the necrotic products of the inflammatory process are a sufficient stimulus for drainage.

ENCAPSULATED FOREIGN BODIES IN THE PERITONEUM

If such foreign materials as gauze or cork are left in the abdominal cavity under sterile conditions, they are rapidly surrounded by a deposit of fibrin, as shown by Hertzler.³ This fibrin, which is coagulated lymph, soon is covered with endothelium and takes on the characteristics of peritoneum. If the gauze is left for a number of weeks or months, it may intrude into a neighboring hollow viscus and be expelled, as this may be the point of least resistance and, consequently, of greatest pressure. Instances are recorded in which gauze that has been accidentally left after a surgical operation has been expelled by the bowel or by the bladder months or years later. Sometimes, however, the gauze is completely encapsulated with a cystlike wall and becomes so thoroughly infiltrated with fibrin that partial organization takes place. Portions of the gauze may be disintegrated and removed by phagocytes, and the connective tissue penetrating the rest of the gauze is so intimate that it may have to be dissected away with much difficulty.

3. Hertzler, A. E.: *The Peritoneum*, St. Louis, C. V. Mosby Company, 1919, 1: 251-253.

Mental Hygiene.—As far as treatment and care of mental abnormals are concerned, it is necessary in each locality to determine the number of feeble-minded, epileptic, insane and psychopathic among the population, to inquire into their individual needs, and finally to provide facilities for scientific care and treatment. In connection with prevention the public must be informed concerning certain salient facts relating to mental disorders and taught through newspaper and magazine articles, leaflets, and public addresses, what is practical in the way of preventive measures. Prevention and treatment are intimately bound together, because when the feeble-minded, for example, are segregated in institutions and farm colonies, they are prevented from reproducing their kind.—C. M. Hincks, *Am. J. Pub. Health* 9:353, 1919.

LATE RESULTS IN THE RADIUM TREATMENT OF CANCER OF THE UTERUS

J. LOUIS RANSOHOFF, M.D.

CINCINNATI

What place shall radium have in the treatment of carcinoma of the cervix? This is a question of vital importance, as it concerns the treatment of a disease of universal distribution, a disease which in spite of the efforts of the world's greatest surgeons continues to take its large annual toll of suffering and death.

Carcinoma of the cervix has long been one of the most fruitful fields for radium treatment. Thousands of cases are annually declared inoperable and must needs be aided by some other means than surgery. Because of its unusual accessibility, radium can be brought into close contact with the neoplastic cervix where it can exert its direct influence.

Radium has long been granted its position as the agent of choice in the treatment of inoperable cervical carcinomas. The question which now concerns us is whether it shall supplant the radical operation in the treatment of so-called operable cancers of the cervix. I say so-called advisedly, as the question of operability depends entirely on the judgment of the individual operator, and in numerous instances cannot be definitely decided until after the abdomen has been opened.

With the publication of an account of the Wertheim operation in 1898, and its adoption by the leading gynecologic clinics of the world, it was thought that a step forward had been taken in the war against uterine cancer; but now, after two decades, the Wertheim operation is still on trial. One of the most distressing phases of carcinoma of the uterus is the low percentage of operability among those patients applying for relief. In a decade, Clark¹ operated on sixty patients and estimated that during the same period more than 300 were refused operation, an operability of only 15 per cent.

In Jacobson's² collection of 5,027 cases, only 1,720, or a little over 31 per cent., were considered operable. In reviewing the statistics of the Wertheim operation it would seem that the higher the percentage of operability in a given series of cases, the higher the percentage of operative deaths. Probably more discouraging than the small percentage of operability is the high immediate mortality. The operative mortality of Jacobson's collected cases was 18.25 per cent. These figures, bad as they are, nevertheless leave too optimistic an impression, as they represent the work of the most skilled gynecologists of the world. In the hands of the great body of operating surgeons, the mortality is undoubtedly far larger.

Peterson,³ in his own cases, had a total primary mortality of 25.4 per cent. In speaking of the operation he says:

Unquestionably added experience has strengthened my belief that the extended operation for cancer of the cervix is an exceedingly dangerous one, always attended by high primary mortality. No one will be more glad to discard the radical abdominal method than will I, if I can be shown that more patients can be ultimately cured by less dangerous methods.

Turning again to Jacobson's statistics, of 1,090 patients operated on that were followed, there were

386 cures, or 35.41 per cent. of the patients that were traced, or only 19.32 per cent. of the entire number of patients operated on; but what is most striking is that only 11.72 per cent. of all those patients applying for treatment were cured.

Clark has struck the keynote of modern opinion of the Wertheim operation. He says:

If an operation or other therapeutic process is to have a permanent place in our armamentarium it must be sufficiently easy to make it available not for a few skilled specialists, but for the great body of surgeons working in every quarter of this and other countries.

In these days of low mortality percentages attending nearly all major operations, no operation can possibly gain headway which combines with it a shockingly high mortality and a large majority of distressing and desperate sequelae. The effect on the lay mind must be taken into consideration, for while one may have over 50 per cent. of ultimate cures among those patients that survive the operation, the effect on the average intelligent citizen is abhorrent, if for this number of survivors there have been twenty-five deaths, and for the other twenty-five a wretched existence attended by repulsive postoperative sequelae, followed by a painful and lingering death. It is possible that when we make a final summary of our combined experiences we may have to accept the conclusion that a less radical operation, even though it saves fewer patients, may be preferable when attended by a low surgical mortality and few or no operative sequelae.

A CONTRAST OF METHODS

Disregarding for a time the end-results of radium treatment of cancer, it is interesting to compare the two methods of treatment from other standpoints. Contrasted with the high mortality of the extensive operation for uterine cancers, there is practically no mortality from the radium treatment. In place of a dangerous operation with its attendant suffering, long stay in the hospital, and distressing postoperative sequelae, there is the simple radium treatment with a few days' stay in the hospital, no danger and little pain.

Again, while less than one third of those patients who present themselves for treatment are fit subjects for the radical operation, radium treatment is available for all classes of cases, no matter how far advanced. The immediate result of treatment, and the palliation of symptoms, the relief from hemorrhage, pain and foul discharge have been too frequently described to warrant further comment.

The conclusions published by Dr. Joseph Ransohoff and myself⁴ in 1916 remain unchanged. That is, in all cases the immediate results have been without exception good. The concern now is, Can radium permanently cure cancer of the cervix? If so, does the percentage of cure equal that of operation? If that is true, the conclusion is obvious.

The pendulum is swinging toward radium as the method of choice in the treatment of operable cervical carcinomas. With the report of later results, its position is becoming more definitely established. As early as 1914, there were some operators convinced that radium should entirely supplant operation. Dobbert⁵ in that year, from an observation of twenty-four cases,

1. Clark, J. G.: The Radical Abdominal Operation for Cancer of the Uterus. *Surg., Gynec. & Obst.* **16**:255, 1913.

2. Jacobson, quoted by Janeway: *Surg., Gynec. & Obst.*, September, 1913.

3. Peterson, Reuben: *Surg., Gynec. & Obst.* **23**:280 (Sept.) 1916; *Am. Gyn. Soc.*, 1916.

4. Ransohoff, Joseph, and Ransohoff, J. L.: *Ann. Surg.*, September, 1916.

5. Dobbert, T.: *Ergebnisse der Behandlung des Gebärmutter-Krebses mit Radium*, St. Petersburg med. Ztschr. **39**:97, 1914.

eighteen inoperable and six operable, concluded that it was justifiable to use radium alone in the treatment of operable cases. Cheron⁶ reported an inoperable case in which radium was used. Two and one-half years after treatment, death occurred from intercurrent disease. Necropsy revealed no trace of cancer.

In 1915, Döderlein⁷ definitely advocated the use of radium in operable cases. Pozzi,⁸ in 1915, had given up the Wertheim operation in borderline cases and treated them with radium alone. In cases which are decidedly in their inception, a simple vaginal hysterectomy is done, followed by prophylactic radium treatment. Flatau,⁹ in 1915, definitely relinquished operation in favor of radium. The title of his article was, "May We Trust Radium Alone in the Treatment of Uterine Cancers?" In the same year, DeGraiss¹⁰ reported both operable and inoperable cases free from recurrence four years after treatment.

A very important contribution is one of Recasens, a Spanish surgeon. In the beginning he used radium only in those cases too far advanced for operation; but later he used radium to the exclusion of operation. He believes that in very early cases, a cure by radium is almost certain.

RESULTS IN THE AUTHOR'S SERIES OF CASES

As Dr. Joseph Ransohoff and I began the use of radium in the treatment of malignant disease in February, 1914, this report represents the results of nearly six years' experience.

On my return after two years in the army, I was interested in the fate of those patients whom I had seen in the three years prior to my entrance into the service. With the exception of the last case, which was two months later, this series includes those cases observed between February, 1914, and April, 1917, a period varying from two and one-half to nearly six years. As far as possible, all patients were traced; those that could not be located were regarded as having succumbed to the disease.

There are in all thirty-two cases. This includes all patients observed, varying from those whose cases were operable to those in a terminal stage of sepsis. There are also included cases in which for one reason or another the treatment was not complete. It is interesting to note that eight of these patients had what was considered an incomplete course of treatment, that is, three or less radium applications. The average number of applications for all cases, healed and fatal alike, was six. There were six recurrent and twenty-six primary cases treated. There were two cases of cancer of the fundus, and thirty of cancer of the cervix, so that this report deals principally with cervical carcinoma.

Of this entire series there were six patients, or 19 per cent., well and free from all evidence of disease at intervals varying from nearly three to five and one-half years after treatment. In the two cases of carcinoma of the body of the uterus, the results have been disappointing. Neither of these cases, however, was operable. Nevertheless, I am of the opinion that these patients when possible should be operated on rather than treated with radium, as the operative mortality is

low and the end-results good. One of these cases is worth reciting in detail:

Miss C. M., aged 34, referred by Dr. Palmer, had been having uterine hemorrhages for eight months. Three weeks before my examination, a curettage revealed an adenocarcinoma of the body of the uterus, which was confirmed by microscopic examination. The first radium treatment was given, July 3, 1914. In July, 1917, the patient was well. During the fall of 1918, she developed a pernicious vaginal hemorrhage, which was controlled by roentgen-ray treatments. Examination revealed what was thought at that time to be a large fibroid. A month before, these hemorrhages had again recurred. A piece was removed for section and proved to be an adenocarcinoma. One reason for the persistence of this tumor was probably the age of the patient, as it is well known that carcinoma is far more malignant in young persons than in those who are older.

Deducting the eight cases in which an incomplete series of treatments were given, we have 25 per cent. relief from symptoms during this period. There has been no definite operable case in which the treatment has not been successful.

REPORT OF CASES

CASE 1.—Mrs. I. F., aged 53, six months before had noticed sudden pains in the lower abdomen and for four months had suffered from bleeding from the uterus. The family history was negative. Examination, April 28, 1914, revealed an ulcerating epithelioma involving the entire anterior lip of the cervix. The uterus, however, was freely movable. A small piece removed for examination revealed epithelioma. The first radium treatment was given, April 28, 1914, and the last radium treatment, Sept. 11, 1914. Hemorrhage ceased after the first three treatments, and there had been no evidence of recurrence. The patient was in perfect health. In July, 1919, examination revealed a normal movable uterus, with no evidence of any ulceration, a freedom from recurrence after five and a half years.

CASE 2.—Mrs. K. H., aged 71, referred by Dr. Bachrach, for seven months had had severe vaginal hemorrhages. Examination disclosed carcinomatous degeneration of the entire cervix. There was a microscopic diagnosis of carcinoma. The uterus, however, was movable. The first radium treatment was given, May 1, 1915, and the last treatment, May 29, 1915. There were in all four treatments. The patient was reported well, April, 1919, a freedom of recurrence after four and one-half years.¹¹

CASE 3.—Mrs. S., aged 45, referred by Dr. Oliver, had been bleeding off and on for eight months. She was very much exsanguinated and was severely emaciated. Examination revealed a cancerous mass filling the vagina. A microscopic diagnosis of carcinoma was made. Under an anesthetic the mass was curetted away, the vagina was cauterized, and 100 mg. of radium were inserted for twenty-four hours. March 20, 1915, the first treatment was given, and the last treatment was given, May 7, 1915. April 25, 1919, examination revealed the patient perfectly well and able to do her work. Her weight was 124½ pounds. Sept. 10, 1919, a rectovaginal fistula developed. Examination under anesthesia disclosed a very small fistula in the posterior vaginal wall, communicating with the rectum. This fistula was situated just above a very dense fibrous stricture. Under an anesthetic, the stricture was stretched and a very careful examination revealed no evidence of cancer. Here the stricture was probably due to the concentration of a large number of treatments in a short time, necessitated by the desperate nature of the case. An examination made a week ago demonstrated the fistula nearly healed and absolutely no evidence of any tissue remotely resembling carcinoma, a freedom from recurrence for four and a half years.

CASE 4.—Mrs. S. S., aged 65, referred by Dr. S. Wolf, had been bleeding for eight months. Examination disclosed the

6. Cheron, H.: Fortschr. a. d. Geb. d. Roentgenstrahl. **21**: 229, 1913.
7. Döderlein, A.: Unsere weiteren Erfahrungen mit der Mesothorium Behandlung des Carcinoms, München. med. Wchnschr. **61**: 225, 1914.
8. Pozzi, S.: Rev. de gynec. et de chir. abd. **23**: 2, 9, 264, 1914-1915.
9. Flatau: Zentralbl. f. Gynäk. **39**: 611, 1915.
10. DeGraiss, P.: Ann. de gynec. et d'obst. **11**, 1915; Surg., Gynec. & Obst. **22**: 298 (March) 1916.

11. Since this article was written, this patient has died of some intercurrent disease, at the age of 76.

cervix entirely replaced by neoplastic tissue. There were a foul discharge and hemorrhage. A microscopic diagnosis of carcinoma was made. The first treatment was given in February, 1916, and the last treatment in April, 1916. Examination, November, 1919, revealed the patient in excellent health. The vaginal vault and the remains of the cervix were covered by smooth, pliable mucosa; there was no evidence of a recurrence, a freedom from recurrence of nearly four years.

CASE 5.—Mrs. J. W., aged 50, referred by Dr. Newfarth, with symptoms present for eight months, had had severe hemorrhage. The site of the cervix was occupied by a crater and cancerous vegetation. It was probably a borderline case. Under gas oxygen anesthesia, a curettage was performed. A microscopic diagnosis of carcinoma was made. The first treatment was given, December, 1916, and the last treatment, July, 1917. Examination, December, 1919, revealed a woman in excellent health, with no evidence of recurrence. There was a small scar in the vault of the vagina covered with normal mucosa, a freedom from recurrence for three years.

CASE 6.—Mrs. B., aged 54, referred by Dr. Aitkin, was operated on for cancer of the uterus two years before. She had had hemorrhage for the past two months. The vagina was narrow, and there was a recurrence in the vault. The first treatment was given in June, 1917, and the last treatment in December, 1917. The patient reported by letter, November, 1919, that she was well, a freedom from recurrence of two and a half years.

COMMENT

We have here 19 per cent. of those patients treated free from recurrence for from two and one-half to five and one-half years; one patient for five and one-half years; two patients for over four years; one patient for three years, and one for two and one-half years. The latter case may perhaps be a little too recent to be definitely called cured. This percentage of cure may seem small, but it compares favorably with that following operation. Deducting the eight cases in which the treatment was incomplete raises the percentage to 25.

The remaining twenty-six patients are either known to have died of the disease, or have at present a recurrence, or could not be traced.

Just a word here as to technic, that is, the question as to whether the radium treatment should be preceded by a curettage or the cautery. From our observation it would seem that the results were the same one way or the other; therefore we have definitely given up both curettage and cauterization as preliminary to radium treatment, and now we depend entirely on the radium.

If the cases were chosen for radium treatment with the same degree of care that they are chosen for operation, I feel confident that the percentage of cures would be very large. This is not, however, the function of the radium workers, who should give an opportunity for relief to every person who seeks treatment.

There is scarcely any case so far advanced that some improvement may not be obtained from radium treatment. In this work it should be the province of all observers not to work for statistics, but to give every patient a chance, if not for a cure, at least for an amelioration of symptoms.

Contrast the results of these thirty-two cases in which there was a 19 per cent. cure, with the Jacobson statistics, in which there was only an 11 per cent. cure. Also remember that there was no fatality from this entire series of treatment. Contrast this with the 18.25 per cent. mortality from the radical operation. Contrast again the economic saving of weeks in the hos-

pital, the postoperative suffering, and the unbearable sequelae. I do not hesitate to state that in my opinion radium treatment should entirely supplant operation, not only in the treatment of inoperable cases, but also in the treatment of operable cases of cancer of the cervix.

Seventh and Race streets.

METASTATIC ABSCESES OF THE THYROID ASSOCIATED WITH HYPERTHYROIDISM

REPORT OF CASE FOLLOWING REPEATED ATTACKS OF SORE THROAT

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The case here reported is of interest because of its possible bearing on the etiology of exophthalmic goiter. In spite of the recent advances made in the study of this disease, its etiology is still unknown. This case directs our attention to the possibility of a bacterial cause. The similarity of symptoms in acute febrile diseases and thyrotoxicosis is well known. It is therefore possible that bacteria, now recognized as the cause, even though remote, of some chronic, so-called degenerative diseases, such as some forms of asthma, nephritis, arteriosclerosis and subacute and chronic arthritis (which until very recently were considered beyond the realm of bacteria) may play an equally important rôle here as well.

REPORT OF CASE

History.—Mrs. B., aged 46, a native of the United States, and a life long resident of New York City, with a negative family history, and with a previous history of scarlet fever at 16, from which she had made a good recovery, with good habits, drinking tea and coffee moderately, had had a goiter for the past twenty years. As far as she recollected, it had come on at about the age of 22. It was small at first and gradually grew until at the time of examination it was quite large (about the size of a small orange). This goiter had not increased in size for the past five years, according to the patient's statement. The menstrual history was negative.

Examination.—The patient first came under my observation about August, 1916, when she had a peritonsillar abscess on the left side. The temperature was 104, and the pulse 100. There were fairly large, irregular, vascular and inflamed tonsils and a peritonsillar abscess, with bulging of the supratonsillar tissues on the left side. Over the thyroid region there was a fairly large tumor, evidently cystic in nature and slightly larger toward the right side. No tenderness was felt over the tumor, and no thrill or bruit. Because of the presence of the goiter a thorough search was made for signs and symptoms of hyperthyroidism, but none were found.

Treatment and Results.—The peritonsillar abscess was incised, and the patient recovered without any complications and without any symptoms referable to the thyroid appearing.

After about six months she was taken ill with a sore throat, and soon developed what clinically looked like a double quinsy. She was quite ill at this time, the temperature ranging between 103 and 105 F., and with a good deal of glandular enlargement in the cervical and submaxillary groups. Both supratonsillar areas were incised, but no pus was obtained; nor was her general condition improved. The redness and edema of the throat, tonsils and soft palate persisted, and the temperature remained at about 105. The patient became very toxic, and I took her to Lebanon Hospital, where she was admitted to Dr. M. Lederman's service.

Dr. Lederman reincised the throat, but obtained no pus. Several throat cultures showed no diphtheria, but did show the presence of streptococci and pneumococci. In view of the

irregular, high temperature and the absence of pus, a diagnosis of streptococcus sore throat was made. During the patient's stay in the hospital, traces of albumin, and hyaline and granular casts were found in the urine. The temperature, however, was reduced by lysis. The kidneys cleared up to a great extent, and she went home in good condition.

About seven weeks after leaving the hospital, she began to complain of some pain over the right side of the neck in the area of the right lobe of the enlarged thyroid, which was quite tender. She also complained of general weakness, some dyspnea on exertion, palpitation, and occasional diarrhea.

Examination revealed a rather striking change in the patient's general appearance. She looked markedly emaciated, had a very decided fine tremor of the hands and tongue, and a rapid pulse, from 150 to 160, but regular. The heart was enlarged; there were ringing sounds, but there was no adventitious sound, and there were no eye signs. The thyroid was larger than it had been, and moderately tender. There was a distinct thrill and, at times, a bruit over the thyroid; the temperature was 100.

A diagnosis of hyperthyroidism was made. The tenderness was thought to be the result of a possible hemorrhage with sudden enlargement and pressure on adjacent nerves.

The patient was put to bed, the diet was regulated and sedatives were given, but no improvement resulted. After about four weeks of medical treatment, I advised an operation, but she refused. Roentgen-ray treatment was, therefore, tried for about three months at Mount Sinai Hospital in the outpatient department, but no improvement was noted. The patient finally decided to be operated on, and she was admitted to the Presbyterian Hospital for operation.

During this period, while under medical and roentgen-ray treatment, she had two attacks of sore throat similar to the ones described, but of a milder character. Both these attacks were treated conservatively, and the patient recovered without incision of the edematous soft palate.

While in the Presbyterian Hospital she was observed on the medical service for several days, and a diagnosis of hyperthyroidism was made by the internists. She was then transferred to the surgical service for operation.

At the operation, which was performed by Dr. McWilliams under gas and oxygen anesthesia, the exposed gland was found to be cystic, especially in the right lobe. This lobe, together with the isthmus and part of the left lobe, was removed.

On sectioning, the gland was found to consist of multiple abscesses filled with a greenish-yellow pus. The report from the laboratory stated that cultures had been made of the pus, and that Type IV pneumococci were recovered. The gland showed areas of acute and chronic inflammation, as well as an increase in glandular material.

The patient's subsequent course in the hospital was rather stormy. After the operation, she developed a parotitis on the left side with edema of the face. She eventually made a good recovery. The pulse rate decreased, and the muscular tremor disappeared gradually. Now, two and one-half years after operation, she is free of all symptoms or signs of hyperthyroidism.

COMMENT

This case of hyperthyroidism appears to have followed repeated attacks of acute peritonsillar and pharyngeal infection. We may, therefore, feel justified in emphasizing these points:

1. Thyrotoxic symptoms may appear in cases of simple goiter, the result of an acute infection.

2. Bacteria may be a factor in the causation of exophthalmic goiter: if not directly so, at least effecting such changes in the physiology of the gland as to make its appearance likely.

3. Suppuration of a thyroid gland should be suspected when there is even slight pain and tenderness over the gland with enlargement, especially when there is a history of a preceding infection.

1220 Grand Concourse.

WORKMEN'S COMPENSATION, WITH ESPECIAL REFERENCE TO LOSS OF VISION

FRANK ALLPORT, M.D.

CHICAGO

Surprise is often expressed concerning inharmonious medical expert testimony. Doubtless dishonest medical evidence is sometimes heard, but most medical opinions expressed in court are honest, and divergent views between witnesses are dependent on varying degrees of knowledge, and personal experience. The human body and its diseases, possessing but little uniformity, can be variably interpreted by a plurality of honest and intelligent observers, especially in borderland cases in which demarcation lines are vague and indistinct.

Long experience in examining plaintiffs for injury cases inevitably produces skepticism and demands for objective indications, as a high percentage of such cases is, more or less, based on fraudulent claims, fostered and nourished by unprincipled attorneys, unwise friends, and the general desire to extract money from wealthy corporations. Employees have themselves to blame, therefore, for having built a structure inimical to their own interests, while employers may be congratulated on a more benevolent attitude toward their employees—even if produced primarily by strikes, unionism, legislation, etc., induced by previous unjust demands on labor by capital. Employers now desire to produce and maintain friendly relations with their employees, and demonstrate such intentions by good wages and working conditions, hospital care, willingness to concede financial awards for honest personal injury claims, etc., whereas union labor, with its bosses and organizations, seems determined to produce conditions as hard as possible for those men endeavoring to conduct the business of our country.

Honest medical expert testimony is, therefore, influenced by various conditions, and as a consequence is frequently inconclusive; and any proper effort toward systematization should fall on receptive minds.

Owing to variable conditions, compensation tables for damages cannot be invariably equitable, and should not be so regarded; they are merely basal conclusions on which to work. An accepted compensation table for monocular visual losses is an unaccomplished necessity; yet it can merely become a steadying foundation for judicial consideration, and medical testimony will always be necessary for learned opinions and interpretations of present and future conditions, such as corneal scars, retinal and optic nerve diseases, and vitreous opacities. State laws and medical opinions differ as to whether vision (after injury) should be estimated with or without glasses, forgetful of the fact that almost all eyes improvable by glasses possess refractive errors antedating the injury. As a rule, therefore, a claimant should be required to accept the visual results obtainable by glasses with the exception of monocular traumatic cataract cases in which the required lens is so strong as to create annoyance, through discrepancy, diplopia, etc. Under such circumstances, the chief advantage of an operation is to demonstrate to the patient the visual capacity of the eye, and to restore actually a seeing eye to the injured that can be used in case of accident to the other eye. This is a valid asset, and should be considered when judgment is awarded, especially when all expenses are paid by the employer.

ESTIMATION OF OCULAR DAMAGES

It has been asserted that the payment of sick bills by employers has no significance, for such and such is the law and there is an end to it. But not all laws are just laws, and the justice of this law is questionable. Why should an employer be held liable for accidents over which he has no control? If he furnishes good tools, good wages, a good shop, well ventilated and lighted, and equipped with accident preventing devices, and an employee through ignorance, carelessness or obstinacy is injured, why should the employer be held liable? For these cogent reasons, legislatures and courts should not deal with employers too harshly; heavy responsibilities have been thrust on them and they should be given all reasonable benefits of doubts, instead of being buffeted and excoriated whenever opportunity presents itself. It therefore seems reasonable and just, first, that ocular damages should be estimated on conditions prevailing at the time of litigation, unless reasonably positive and reliable evidence is obtainable as to future conditions; second, that visual conditions should be estimated with glasses, except, third, after cataract operations, when the visual result might be measured on a 50-50 basis; this means, for instance, that if, after a cataract operation, good vision is obtained of, say, 20/20 or 20/30, by a glass, the vision may be reckoned as about one-half of normal and compensation paid accordingly.

Referring to unjust legislation, how unfair to both employer and employee is the law rendering the employer responsible for the loss of both eyes, when one eye was lost before the employee entered his service, and his remaining eye has been destroyed while working for the employer. The law is unjust to the employer because he was not responsible for the loss of the first eye, and it is unjust to the employee because it renders the securing of work difficult, as many employers dislike the presence of the maimed, and refuse the assumption of unnecessary legal and financial responsibilities, however much they might desire to assist the handicapped. Besides this, a one-eyed man is more likely to be injured than a two-eyed man, because he can see on only one side of him, and also for the reason that if his seeing eye is injured during work by a cinder, etc., he is quite helpless, as he cannot see through the other eye. Thus a law intended to benefit the laboring man is obstructive to his prosperity, as it often legislates him out of work. The law should be changed and the employer should be held responsible only for the loss of the eye injured during his own service. The employee cannot even legally give the employer a written document releasing him from responsibility concerning the first eye if the second eye is lost during his service. This is almost, if not quite, unconstitutional, as it debars the employee from exercising the right of personal privilege.

Among the very frequent causes of personal injury litigation are the varying losses of vision in one eye, necessarily followed by estimations concerning visual impairment. This produces discrepant expert testimony, leaving the court in mental uncertainty, usually resulting advantageously to the plaintiff—he being the poor unfortunate, and the employer representing what is called corporate wealth.

As Snellen's test types represent to ophthalmologists varying degrees of vision, it has been assumed that Snellen's fractions must also represent varying losses of vision, and that, for instance, 20/40 indicates 50 per cent. of visual loss, 20/30, 33⅓ per cent. of visual

loss, etc. Such conclusions are erroneous and misleading, for Snellen and his followers never intended these fractions to indicate visual insufficiencies—they were merely an international language interpreting ocular refraction, and I am confident that Snellen himself would be astonished and amused at the absurd use of his fractions in our courts, in the awarding of damages to ocularly injured plaintiffs.

It must be evident to all who intelligently and impartially consider this subject that 20/40 does not indicate 50 per cent. loss of vision, nor 20/30, 33⅓ per cent. loss of vision. Indeed, 20/30 is practically no loss of vision at all, and does not reduce a man's earning capacity one cent a year. Technically, it represents a small visual loss and should be so regarded; but practically, the loss is almost negligible. Why, then, should courts continue such erroneous calculations, entailing great and unjust financial losses on employers, accident insurance companies, etc.? The mistake was natural, especially as it received partial ophthalmologic sanction; and once begun, the custom prevailed, particularly as no saner or more accurate method endorsed by ophthalmologists was proposed. If ophthalmologists will propose and endorse a fair and simple table of compensation for visual losses, of reasonable accuracy, there can be little doubt that our courts will adopt such a table, thus removing at least one element of doubt and discord from our tribunals. It must be remembered, however, that such a table must be exceedingly simple, and devoid of all technicalities, as otherwise it will never be even considered by our courts.

While various compensation tables have been proposed by which to estimate monocular visual losses, no table has as yet been suggested on which all interested factions seem to unite, although they all arrive at about the same financial conclusions; and meanwhile the courts continue delivering unjust decisions, guided by palpably erroneous deductions. In the interest, therefore, of fairness, simplicity and brevity, I submit a table, recently adopted by the Chicago Ophthalmological Society, which it is hoped may be universally and uniformly adopted. In constructing a compensation table for monocular visual losses in working men, three points must be considered:

1. What constitutes industrial blindness in one eye?
2. What is the maximum legal compensation for such blindness?
3. What are fair and diminishing percentages of visual losses from the maximum to the minimum?

Concerning industrial blindness, many opinions are possible. Real blindness in its last analysis means a loss of light perception. I consider an individual industrially blind whose vision is insufficient for ordinary work. The injured may be unable to continue a habitual avocation; but if sufficient vision remains to perform ordinary work by ocular assistance, industrial blindness does not exist. What, then, constitutes "industrial blindness"? The answer must be more or less arbitrary. After consulting with many ophthalmologists, lawyers, industrial commissioners and insurance managers, the Chicago Ophthalmological Society arbitrarily concluded that vision worse than 20/200 constitutes industrial blindness. This opinion is, of course, open to discussion, but it is not remote from a fair conclusion to both employer and employee. Let this view, therefore, be tentatively assumed, and let it be said for the purpose of progress that vision worse

than 20/200 represents industrial blindness or 100 per cent. loss of vision, entitling the injured to the maximum compensation for monocular blindness allowed by the state law. This varies in different states, but in Illinois it entitles the injured to 100 weeks of compensation at \$12 a week, or \$1,200. The minimum to be paid for the total loss of one eye is \$6 a week. In case the maximum or \$12 a week is paid, the amount is increased \$1 a week for each child of the applicant under 16 years of age, up to and including three children. In case the minimum or \$6 a week is to be paid,

COMPENSATION TABLE FOR VISUAL LOSSES OF ONE EYE

20/20 indicates	100%	of visual efficiency and	no	loss of vision
20/30	94.5%	" " " "	5.5%	" " "
20/40	89.0%	" " " "	11.0%	" " "
20/50	83.5%	" " " "	16.5%	" " "
20/60	78.0%	" " " "	22.0%	" " "
20/70	72.5%	" " " "	27.5%	" " "
20/80	67.0%	" " " "	33.0%	" " "
20/90	61.5%	" " " "	38.5%	" " "
20/100	56.0%	" " " "	44.0%	" " "
20/110	50.0%	" " " "	50.0%	" " "
20/120	41.0%	" " " "	59.0%	" " "
20/130	36.5%	" " " "	63.5%	" " "
20/140	32.0%	" " " "	68.0%	" " "
20/150	28.5%	" " " "	71.5%	" " "
20/160	23.0%	" " " "	77.0%	" " "
20/170	18.5%	" " " "	81.5%	" " "
20/180	14.0%	" " " "	86.0%	" " "
20/190	12.0%	" " " "	88.0%	" " "
20/200	10.0%	" " " "	90.0%	" " "

the amount is increased 50 cents a week for each child of the applicant under 16 years of age, up to and including three children.

Two points in the construction of a compensation table may be said to be now finished, namely, the meaning of industrial blindness, and the maximum compensation payable for this misfortune. The latter, it must be remembered, is definitively settled by most states and we have nothing to say about it. Individuals desiring personally to assume financial responsibility for expensive accident insurance are at liberty to do so; but when insurance is assumed and paid for by the employer, \$1,200 is the maximum amount payable for the loss of one eye in Illinois. The last step to be taken in constructing a compensation schedule is fairly and equitably to grade down the percentages and compensations, to accord with the amount of vision that is lost. This has been attempted in the accompanying Chicago Ophthalmological Society table.

EXAMINATION OF APPLICANTS BEFORE EMPLOYMENT

Before the subject of compensation for monocular visual deficiencies is dismissed, it seems desirable to suggest to employers of labor a simple method for extensively reducing the frequency of claims for personal injury, not only for ocular damage, but for all other accidents as well. Reference is here made to the skilful physical examination of applicants before assignment to employment. Perfunctory examinations should be discountenanced, as errors in either direction may lead to unfortunate results. Eye and ear examinations, for instance, should be performed by competent specialists, that correct ocular and aural conditions may be ascertained. Two instances will demonstrate the necessity for such examinations before employment:

CASE 1.—A man received a slight head blow three weeks after obtaining employment. Shortly after he claimed blindness in one eye. Examination disclosed old chronic simple glaucoma with atrophied disk.

CASE 2.—A man was struck on the head by a piece of coal; no wound was produced. In five weeks he complained of

deafness and discharge from one ear. Examination disclosed an old chronic otorrhea, necrosis, foul discharge, and tympanic polypi.

In spite of convincing medical testimony, both men recovered damages. If these men had been properly examined before employment, both these diseases would have been detected, and litigation would probably not have been begun, but if begun would have been unsuccessful. The proper examination before employment of applicants for work is an economical necessity, but it is useful only if properly performed by skilful and conscientious physicians. In this way physical records are established that are bound in many instances to save, in the aggregate, enormous sums of money—much more, in fact, than the cost of proper medical examinations. Besides this, many employees have unknown physical infirmities which, when disclosed, can be cared for, and perhaps cured, to the great satisfaction of the employees themselves. Finally, when bodily imperfections are understood by both employer and employee, such knowledge can make employers more considerate of the afflicted, and inspire them to offer suitable occupation for individual needs. Some labor leaders demand the abandonment of physical examinations, thus clearly disclosing their sinister intentions, and ignoring the fact that such examinations should be welcomed by both honest employers and honest employees. Nor can the idea be ignored that, if employers are to be held liable for accidents, they certainly have a right to know the physical conditions of their employees before they assign them to work.

7 West Madison Street.

ENDOTHELIOMA OF THE PLEURA

REPORT OF CASE

P. J. McDONNELL, M.D.

Major, M. C., U. S. Army; Chief of Medical Service

SCRANTON, PA.

AND

E. S. MAXWELL, M.D.

Captain, M. C., U. S. Army; Pathologist, Base Hospital No. 79, A. E. F.

CHICAGO

This case is reported not only because of the rarity of the occurrence of the condition, but also because of the interesting conditions which prevailed throughout the course of the illness.

REPORT OF CASE

History.—A white man, aged 31, first reported at sick call, Oct. 29, 1918, and was sent to a field hospital, where a diagnosis of ileocolitis was made. From there he was immediately transferred to a base hospital. There he gave a history of having had diarrhea for two weeks previously. He was suffering from headache, and incontinence of feces, but he had no fever; mentally he was stupid and somnolent. November 9, on the discovery that the right side of the chest was partially flat, 500 c.c. of serosanguineous fluid were removed. Apparently no pus cells nor organisms were found in the fluid. As the mental condition grew worse, and definite auditory hallucinations were present, a diagnosis of a hebephrenic type of dementia praecox was made.

December 22, the patient was sent to the psychiatric department at Bazoilles, where examination disclosed that his memory was poor, that he had persecutory delusions, and that he was confused and disoriented. After physical examination the diagnosis of fluid in the right chest, with possible empyema, was made. The mental condition was then

ascribed to the toxemia and exhaustion, and the patient was transferred to the medical service. There the chest was explored with a needle, but no fluid was obtained; something solid, however, was encountered. Over the flat area, tactile and vocal fremitus were lost, and breath sounds were distant. Above the flat area there were coarse moist râles, and the breathing was only faintly heard. The mediastinal dullness was noted as widened, and the heart impulse as outside the nipple line. A needle had been inserted at numerous times and by different surgeons but no fluid had been found, and on each occasion the impression of solidity was obtained. At the time of this examination there was some bulging of the right chest, and the patient began to complain of pain in the right upper abdominal quadrant. The leukocyte count was continually around 60,000, with 94 per cent. polymorphonuclears; the temperature would often rise to 102 F. The roentgenologist consistently reported fluid in the right chest.

February 1, the patient with others was taken over by our hospital. He was unable to sit up, although he would continually ask to be allowed out of bed. His body was emaciated, and the face had a hectic appearance. He showed marked mental deterioration, with the talk and manner of speech of a boy. He was emotional, crying easily and usually begging to be sent home. He was well acquainted with his present surroundings and with all in attendance. His movements were coordinate, and there was no spasticity. He usually lay on his back, but he could easily move about in bed. The chest examination disclosed that the cardiac dullness was not increased, and the apex beat was but slightly outside the normal position. The left chest was negative. The right chest was markedly larger than the left, and at one place, anterior and just above the costal margin, bulged somewhat into a solid rounded bump. Everywhere there was absolute flatness. Percussion below the fifth rib anteriorly was like striking a board. Over the lower and midlobes, breath sounds were but faintly heard and at a great distance. They were much louder at the apex and along the spine. However, everywhere they were of transmitted quality, distantly tubular. No râles were heard. Fremitus was abolished. With the history of 500 c.c. of serosanguineous fluid having been obtained early, of the numerous dry taps with the needle meeting strong resistance later, of the wooden percussion note, of the uneven breath transmission along the spine, of the right-sided shadow on the roentgenogram, and especially of the absence of cardiac displacement, the diagnosis of a new growth was made. Opposed to this diagnosis were the disconcerting features of a very high leukocytosis with the increase in polymorphonuclears, and a consistently moderate rise in temperature. It was thought that perhaps there might be a degenerated area in the tumor mass with abscess formation. However, there were no rigors nor high elevations of temperature. The expectoration was not profuse, nor at any time blood stained, nor of bad odor. Even the urine was albumin free.

The patient was observed from almost every angle as he progressively grew weaker. One had to bear in mind that perhaps there was present a condition which could be relieved by operation. The roentgenologist could not definitely diagnose the lesion with plates, and the horizontal screen was not in good working order. Tubercle bacilli were never found. The Wassermann reaction was negative. The blood picture showed no atypical cells. The sputum typed Group IV pneumococci. The pain in the right upper abdominal quadrant came oftener and grew more intense. There were no paralyses, nor stupor, nor loss of consciousness up until the patient's death, which occurred March 14, 1919, five months after the first symptoms were noticed. Because of the patient's age and the absence of recognized signs of metastases or lung infiltration, the tumor growth was thought to be probably of connective tissue origin. Death came without any new signs appearing except in the last few days, when there was an impairment of the good lung.

Necropsy Findings.—The anatomic diagnosis was malignant tumor of the right pleura and lungs with extension into the liver, chest wall and left pleura, and metastasis into the brain and peritoneum.

The right chest, just external to the nipple line at the seventh rib, showed a distinct bulging which was slightly nodular. On removal of the skin and muscles, several grayish white nodules were found adherent to the chest wall. The right pleural cavity was obliterated by a nodular, grayish white, friable tissue from 1 to 3 cm. in thickness, being thinnest at the apex and thickest near the mediastinum. It was firmly adherent to the lung and chest wall. The diaphragm was replaced by the same tissue, which extended deeply into the liver. The left pleural cavity contained 200 c.c. of clear fluid. A few adhesions were present. Posteriorly the parietal and visceral pleurae were covered by numerous firm white tubercles, varying in size from that of a pinhead to that of a large bean. A few appeared anteriorly.

The right lung was firm, and on section appeared dry with a marked increase in interstitial tissue. In the upper lobe the bronchi were surrounded by a white fibrous tissue. Occasionally a distinct nodule of this fibrous tissue was seen. All lobes were somewhat atelectatic. The left lung was soft and air-containing, but somewhat nodular. On section the nodules were found to be white with definite strands of fiber visible. The neck organs and cervical lymph glands were not remarkable.

The peritoneum was smooth and glistening, and the cavity contained no fluid. The upper and external surface of the liver was adherent to the peritoneum with a comparatively firm, friable adhesion in which were many grayish white nodules of varying sizes. A few isolated grayish nodules, the size of a pea, were scattered over the visceral and parietal layers. The liver was pushed downward about 4 cm. Its surface, especially the upper anterior and external aspects, was covered by the same nodules. On section, the advance of the tumor was seen to extend from 2 to 5 cm. into the liver substance. The advancing margin was composed of small, round tubercles which seemed to coalesce with age.

In the intestine, about 1 meter below the beginning of the ileum, there was a gray nodule which involved the entire thickness of the intestinal wall. It was surrounded by a zone of hyperemia. On the cecum, near the appendix, there were two nodules, 1 cm. in diameter, but they seemed to involve only the peritoneum.

The spleen was moderately enlarged and the capsule was wrinkled and thickened. On section, a smooth surface the color of grape juice was presented. The right suprarenal was somewhat enlarged, and near its center there was a nodule the size of a pea and similar to those just described. The left suprarenal was not remarkable. The kidneys were small and pale. The capsule stripped easily, and the cortex and medulla were well defined. The stomach, pancreas, bladder and genitalia showed nothing of note.

The meninges were clear. The brain on section showed a cavity, 3 by 3 by 6 cm., above the left lateral ventricle. The wall of this cavity was composed of a layer of brownish red tissue, 1 cm. in thickness, and distinctly nodular. The cavity was filled with an amber fluid containing numerous cholesterol crystals and a small amount of granular debris. Several smaller cysts similar to this were seen in the white matter throughout the brain sinuses.

Microscopic Diagnosis.—Thickened Pleura: The bulk of the tumor consisted of fibroblasts and connective tissue cells. These were arranged in many bands which communicated freely with one another. In certain areas these cells were nucleated and showed active growth. Usually, however, no nuclei were demonstrated. Between these strands of cells were many nests of cells. Near the center of the thickened pleura these nests were small, and the cells markedly distorted. Near the periphery the cells were more plentiful and the connective tissue much less conspicuous. There was a marked variation in the size and in the staining characteristics of these cells. Some were large and polygonal and stained densely; others were large with pale staining protoplasm, while still others were small and pyknotic. The cells were formed in groups, and in some places had a slight glandular arrangement. Karyokinesis was seen in many cells.

Liver Metastasis: The liver cells were cloudy, and many contained fat globules. The fat was especially noticed in

the cells surrounding the central vein. The line between the tumor cells and the liver cells was marked by a thin zone of scattered round cells with an occasional polymorphonuclear. Usually this line was cleancut and distinct. Occasionally tumor cells extended beyond it. The tumor cells were identical in appearance and arrangement to those in the tumor of the pleura. There was, however, very little connective tissue in the liver tumors.

Metastatic Nodules in Left Pleura: The cells were identical to those described above. Those in advance filled the alveoli of the lung, and in many cases were limited to a given alveolus. Deeper in the tumor, however, the alveolar wall was represented only by a thin line of connective tissue.

Right Suprarenal: The tumor was identical in every way to those just described. Its extending margins were clear and distinct.

Metastasis into Brain: Here the cells were arranged in a more orderly manner. Many definite papillae were present. The margin invading the brain substance was somewhat more irregular, and frequently the cells extended deeply into the brain. However, the general characteristics of the tumor cells were the same as those of the pleura.

The microscopic diagnosis was endothelioma of the right pleura with metastasis into the liver, left pleura, suprarenal, peritoneum and brain.

COMMENT

Most likely the first symptoms in this case were produced by the metastases in the brain, as no history of the chest condition was obtained until later. The diarrhea, noted at first as incontinence of feces, the stupor, and the psychosis were the outstanding signs and the ones that caused the patient to come under medical observation. The growth proper was not detected early because it produced no painful symptoms and invaded no tissue that gave any local reaction. The pleural effusion was the first sign noticed in the chest, and this was some time after the mental symptoms had appeared. The metastases were doubtless of a blood vessel type, and those in the brain were probably the first given off. Neither the motor nor the sensory areas were attacked, but apparently the parts associated with thought activity were greatly disturbed. The nodules in the intestine may have produced the diarrhea. The liver was invaded directly through the diaphragm. The latter lost its identity on the right side and was replaced by the advancing growth. The necropsy findings in no way explained the consistently and extremely high increase in white blood cells. The metastatic areas in the brain were sterile and showed no inflammatory reaction. The fever was no doubt due to toxic resorption. The growth began in the right pleura at the mediastinum and extended along the diaphragmatic and later the costal portions, compressing the lung upward in its course. Death was the result of asthenia.

The Geographic Distribution of Diseases.—L. R. Grote declares that not enough statistics and other data have been accumulated as yet for what he calls nosogeography. This is a science of the future, to be based on geographic, climatic influences, racial differences, social and economic conditions, the biology of the causative agents, and the effect of human efforts at prophylaxis. He reiterates that there is no part of the world absolutely free from any of the constitutional diseases, or where the infectious diseases cannot get a foothold when the causal agent is imported. In discussing these five elements of nosogeography in the *Geographische Zeitschrift* 25, No. 7, 1919, he cites a number of puzzling facts, such, as the high tuberculosis death rate and the low cancer death rate—only 4 per ten thousand—in the Münster region, while the reverse prevails in the East Sea provinces, the cancer rate being 14 while the tuberculosis rate is among the lowest.

THE PRODUCTION OF AN ACUTE RESPIRATORY DISEASE IN MONKEYS BY INOCULATION WITH *BACILLUS INFLUENZAE*

A PRELIMINARY REPORT *

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AND

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Many attempts have been made to produce influenza in animals, or to transmit it experimentally from man to man by inoculation of the secretions, both filtered and unfiltered, from the respiratory tract in cases of influenza, by direct exposure of the subject to patients with influenza, and by inoculation with cultures of *Bacillus influenzae* isolated from patients with the disease. In large part, the results obtained have been entirely negative. In the few instances in which successful transmission of the disease has been reported, the methods employed and results obtained by different observers have been to a considerable extent inconsistent.

During the course of an investigation of experimental pneumonia in monkeys produced by the intratracheal injection of pneumococcus and *Streptococcus hemolyticus*, a further series of experiments with *B. influenzae* was undertaken in the hope of throwing some light on the relation which this organism bears to epidemic influenza and to the pneumonia which so frequently complicates it. The results obtained have been of such interest that it seems desirable to present a brief preliminary report at this time. The work will subsequently be reported in detail with full protocols.

Two species of monkeys were used: *Macacus syrichtus* from the Philippine Islands, and *Cebus capucinus* from Central America. All were fresh stock and had not previously been kept in captivity in this country. No preliminary procedures to lower resistance or to injure the respiratory tract before inoculation were resorted to. The strain of *B. influenzae*¹ employed was originally isolated from a case of influenzal pneumonia in a child. When received it had been in subculture on blood agar for a period of six weeks, and was found to possess no virulence for white mice. Since it was well known that the pathogenicity and virulence of *B. influenzae* are extraordinarily labile and very rapidly lost on subculture on artificial mediums, it was deemed necessary to raise the virulence of the strain to a considerable extent if successful results were to be obtained. This was accomplished, in brief, by successive animal passages, first through a series of eleven white mice, and then through a series of thirteen monkeys. These animals were inoculated intraperitoneally, the attempt being made always to give a sufficiently large dose to kill the animal within from twenty-four to forty-eight hours. Presumably because of individual variation in resistance, the desired result was not always obtained. In order, therefore, to avoid delay and possible loss of virulence because of this circumstance, fluid was withdrawn from the peritoneal cavity of the inoculated animals from eight to ten hours after injection, when the bacteria were still

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1. We are indebted to Dr. T. M. Rivers of the Johns Hopkins Medical School, Baltimore, for the strain of *B. influenzae* used.

actively growing in the peritoneum, and cultures were prepared to be used for inoculation of a fresh animal on the next day in case the previously inoculated animal failed to succumb. By this means the virulence of the strain of *B. influenzae* employed was sufficiently raised so that 0.01 c.c. of a sixteen-hour blood broth culture injected intraperitoneally killed a white mouse within forty-eight hours.

It was then considered probable that the organism had attained sufficient virulence to warrant testing the effect of inoculating monkeys in the respiratory tract. Accordingly, a series of twenty-two monkeys were so inoculated. The material used for inoculation may be divided into three groups: (1) first or second subculture on blood agar or in blood broth of *B. influenzae* recovered from the peritoneal exudate or heart's blood of monkeys dying of *B. influenzae* peritonitis and septicemia; (2) first or second subculture of *B. influenzae* recovered from the respiratory tract of monkeys killed during the acute stage of the pneumonia produced by intratracheal injection of the organism, and (3) the peritoneal exudate of monkeys dying of *B. influenzae* peritonitis, the exudate being controlled as to its purity by microscopic examination of stained films and by culture on blood agar plates.

Two modes of inoculation were employed, and for convenience the experiments may be divided into two groups according to the method used. In one group, in order to determine whether *B. influenzae* would initiate an infection of the upper respiratory tract, and if so, what the characteristics of the disease produced might be, the material to be inoculated was introduced into the nose and mouth either by application with a sterile cotton swab or by instillation with a pipet. In the second group, the material was introduced into the lower respiratory tract by direct intratracheal injection with a Luer syringe; the needle of which was inserted into the lumen of the trachea between the tracheal cartilages just below the larynx, the special purpose of this series of experiments being to determine if possible the pathologic characteristics of *B. influenzae* pneumonia.

In the majority of the experiments, the monkeys were held under preliminary observation for a period of from three to seven days before inoculation, during which time morning and evening temperatures (rectal) were taken, and daily total and differential leukocyte counts were made. The methods of study after inoculation consisted in the observation and recording of clinical symptoms, in the taking of morning and evening temperatures (rectal), daily total and differential counts of the leukocytes, and blood cultures at irregular intervals. Since the disease produced did not prove fatal, most of the animals were killed and necropsies performed at varying intervals during the acute stage of the disease or immediately after recovery.

THE EFFECT OF INOCULATING MONKEYS IN THE NOSE AND MOUTH WITH BACILLUS INFLUENZAE

Twelve monkeys received inoculations of *B. influenzae* in the nose or in the nose and mouth, with the successful production in every instance of an acute respiratory disease which appeared to be identical with influenza in man. The amount of culture or peritoneal exudate inoculated varied from what could be introduced by the single application of a cotton swab previously dipped in the culture up to 1 c.c. in each nostril and in the mouth.

Clinical Course and Symptoms.—The onset occurred from three to six hours after inoculation, the first symptom being a variable degree of prostration, often extreme, the animals in many cases lying prostrate on the floor of the cage, eyes closed and very stuporous. This was accompanied by an abrupt rise in temperature varying between 103 and 106 F. in some cases, with only moderate or no febrile reaction in others. Symptoms of upper respiratory tract infection soon followed, frequent sneezing, blinking of the eyes and rubbing of the nose being the prominent initial manifestations. The subsequent course of the disease showed some variation, but in general it was that of a self limited respiratory disease of from three to five days' duration. In most cases, by the end of from twenty-four to forty-eight hours, the infection had spread to the lower respiratory tract, as shown by the development of a racking cough. A variable amount, usually scanty, of mucoid or mucopurulent nasal secretion appeared in which *B. influenzae* might or might not be found. The temperature reaction varied greatly and showed no constant type of curve, being analogous in this respect to the variable types of febrile reaction seen in influenza in man. The leukocyte counts showed during the active stage of the disease either a definite degree of leukopenia or no significant variation from the normal, leukocytosis occurring in only three cases on the third or fourth day of the disease coincident with the development of a complicating purulent sinusitis.

Complications.—Five monkeys developed an acute purulent sinusitis of the antrum of Highmore from which *B. influenzae* in pure culture or mixed with some other organism was recovered at necropsy. Two animals developed pneumonia on the third and fourth days, respectively. The onset of pneumonia was insidious, and the presence of the disease was suspected only because of a rise in temperature and moderate acceleration of the respiratory rate. Both animals were killed during the early stage of the pneumonia, *B. influenzae* being recovered from the lungs in pure culture in both cases.

Pathology.—Nine animals were killed, and necropsies with bacteriologic examination were performed. Those killed during the active stage of the disease all showed rhinitis, with purulent sinusitis of the antrums in five cases. Cultures from the antrums showed *B. influenzae* in abundance in three cases, moderate numbers in a fourth, and none were recovered in the fifth. In two cases, *B. influenzae* was present in pure culture; in two, other bacteria also were found. Six cases showed a tracheitis or tracheobronchitis. *B. influenzae* was recovered from the trachea or bronchi in all of these: in two cases, in pure culture; in four, mixed with other bacteria (*Staphylococcus albus*, nonhemolytic streptococcus, or a gram-negative micrococcus). Two animals showed a fairly extensive bronchopneumonia involving the right upper and lower lobes, and the left upper lobe in one; the left lower, middle and upper and right upper lobes in the other. This pneumonia, in brief, was characterized by extensive hemorrhage, peribronchial areas of consolidation with an exudate of leukocytes, mononuclear cells and desquamated alveolar epithelium and thickening and infiltration of the alveolar walls, absence of pleurisy, and considerable patchy emphysema of the peripheral lobules. *B. influenzae* was recovered in pure culture from the lungs in both cases.

THE EFFECT OF INTRATRACHEAL INJECTION OF
BACILLUS INFLUENZAE IN MONKEYS

Ten monkeys received intratracheal injections of *B. influenzae*, in amounts varying from 1 to 5 c.c. of culture or peritoneal exudate, with the successful production of pneumonia in seven instances. Two monkeys showed only a tracheobronchitis; one showed no evidence of infection. The symptoms of prostration and cough, temperature and leukocyte reactions were the same as in the preceding group. In addition, the respiration was accelerated. In two cases, the infection spread to the upper respiratory tract with the development of coryza and frequent sneezing. In one case, a general infection with *B. influenzae* septicemia and pericarditis ensued. In no case did the disease prove fatal. It seems probable, however, that death would have occurred in the monkey that developed septicemia and pericarditis had it not been killed.

Pathology.—Of the seven monkeys developing pneumonia, three were killed during the active stage of the disease with the recovery of *B. influenzae* in pure culture in all; four were killed immediately after recovery, cultures made at necropsy being sterile. In the two cases in which only a tracheobronchitis developed, cultures from the trachea at necropsy yielded *B. influenzae* in pure culture in one, and no growth in the other.

Two types of pneumonia were encountered: a widespread, patchy pneumonia with extensive hemorrhage and edema, little cellular exudate or infiltration, and patchy emphysema; or a bronchopneumonia with extensive bronchitis and bronchiolitis, thickening and infiltration of the alveolar walls with swelling, proliferation and desquamation of the epithelial lining, and areas of peribronchial consolidation in which the alveoli were filled with mononuclear cells, polymorphonuclear leukocytes, red blood corpuscles and desquamated epithelial cells in varying proportions. Fibrin was very scanty or entirely wanting, and the pleural surface was rarely involved. One animal showed bronchiectasis. These two types of pneumonia appear to be essentially identical with the types of pneumonia in man that have been ascribed to infection with *B. influenzae*, when uncomplicated by secondary invaders.

SUMMARY

Twelve monkeys inoculated in the nose or in the mouth with a strain of *B. influenzae* originally isolated from a case of influenzal pneumonia in man and subsequently raised in virulence by animal passage developed an acute, self limited respiratory disease of from three to five days' duration, characterized by sudden onset with profound prostration; the development of rhinitis and tracheobronchitis, with sneezing, cough, and the outpouring of a scanty mucoid or mucopurulent exudate; a variable febrile reaction, and either a leukopenia or no significant change in the leukocyte count. This disease was complicated in five instances by the development of a purulent sinusitis, in two by the development of a fairly extensive hemorrhagic pneumonia with areas of peribronchial consolidation. *B. influenzae* was recovered at necropsy from lesions of the disease either in pure culture or in association with organisms that are normal inhabitants of the upper respiratory tract of monkeys. The disease produced appears to be identical with influenza in man in its course, symptomatology, complications and pathology.

Of ten monkeys injected intratracheally with the same strain of *B. influenzae*, seven developed pneu-

monia, two developed tracheobronchitis without pneumonia, and one resisted infection. The general symptoms of the disease produced were the same as in the preceding group, that is, sudden onset, prostration, a variable febrile reaction, and leukopenia or no significant change in the leukocyte count. The disease was accompanied by a severe cough and accelerated respirations; and in two cases, infection of the upper respiratory tract ensued. *B. influenzae* was recovered in pure culture from the lungs, bronchi or trachea in those animals killed during the active stage of the disease. The pneumonia produced presented the same pathologic picture as that which was found in the two animals developing influenzal pneumonia following inoculation of *B. influenzae* in the upper respiratory tract, and appears to be essentially identical with that ascribed to pure influenza bacillus infection of the lungs in man.

CONCLUSIONS

1. *Bacillus influenzae* can initiate in monkeys an acute infection of the upper respiratory tract which may be complicated by acute sinusitis, tracheobronchitis and bronchopneumonia.
2. This disease appears to be identical with influenza in man.
3. *B. influenzae* when injected intratracheally will produce in monkeys a tracheobronchitis and bronchopneumonia, the pathology of which appears to be essentially identical with that which has been ascribed to pure influenza bacillus infection of the lungs in man.
4. In view of these facts and the constant association of *B. influenzae* with early uncomplicated cases of influenza, it seems reasonable to infer that *B. influenzae* is the specific cause of influenza.

SIMPLIFIED TREATMENT OF THE
ORDINARY VARICOSE ULCER

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Ulcer of the leg is by far the most common type of ulcer with which the medical practitioner has to deal, and its treatment is generally most unsatisfactory. The reasons for this lie in the fact that the patient will not consent to take the necessary time for the rest essential to successful treatment, until the ulcer becomes painful; or the physician contents himself with the application of some ointment and allows the patient to gain the impression that there is little else to be done. Many of these patients suffer for years from this extremely annoying condition, thinking that there is no help for it.

When these cases first come under observation, the surface of the ulcer is denuded, with a ragged, overhanging edge, while the base is filled with gray granulation tissue accompanied by a continuous discharge. There is usually more or less edema and a brawny condition of the surrounding skin, and if the ulcer lies over bone, there may be a secondary periostitis which stimulates the patient to seek relief. Bacterial absorption from the ulcer plays an important rôle in the causation of the local edema; usually this clears up following the healing of the ulcer, in spite for the fact that there may be more or less varicosity.

During the past few years, I have evolved a technic which seems to me very simple and applicable in most cases with the minimum loss of time to the patient.

The mode of procedure is as follows: The ulcer is first cauterized with fused silver nitrate, and the leg elevated for twenty-four hours, to clear the edema. Then a dressing, after the formula of Unna, is applied: gelatin, two parts; zinc oxid, one part; glycerin, three parts, and water, from four to six parts (depending on the consistency desired). These are mixed in a water bath and the paste is applied warm with a spatula to the entire leg from the ball of the foot to the knee, leaving the heel free. A roller bandage is immediately applied over this so that the paste penetrates the first layers of the bandage; if applied smoothly and evenly this makes an ideal supporting bandage and prevents a return of the edema when the patient is again ambulant. Forty-eight hours after cauterization, a small window is cut in the dressing over the ulcer. The slough is cleaned away with a sharp curet until the surface is clear, clean and easily bleeding; the edges will be found somewhat undermined.

With curved scissors the edges of the ulcer are rimmed away, removing a barrier to epithelization from the periphery of the wound. The tissue thus removed is placed on a piece of gauze moistened with physiologic sodium chlorid solution, and with a piece of dry, sterile gauze gentle pressure is made on the ulcer until all oozing has stopped. The edge is then coiled in the crater of the ulcer, and over this is placed a perforated piece of rubber to assist in drainage, and the whole is covered by a sterile dressing and a snug roller. Elevation of the limb should be continued for three days, when the wound should be dressed, after removing the rubber drain, with gauze impregnated with a 5 per cent. scarlet red ointment. The patient is now allowed to be up and about, but is cautioned to remain quiet for a few days longer or until epithelization of the wound is complete. The paste dressing is left on the leg for two weeks and is then reapplied if continued support is desired.

In sensitive patients, the area may be blocked with a per cent. solution of procain.

GALLBLADDER DISEASE

SUMMARY OF FOUR HUNDRED AND TWENTY-FIVE CASES
TREATED AT THE HARTFORD HOSPITAL FROM
1914 TO 1918

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This report is based on 425 admissions to the Hartford Hospital from 1914 to 1918 in which a gallbladder or gallduct disease was suspected or found during treatment. The hospital records have been studied in some detail, and a personal letter was sent to 350 patients who left the hospital, of whom 148 filled in and returned the questionnaire. I have tried to group some of the more important notations for analysis. These patients, both ward and private, for the greater part were admitted to, or transferred to, the surgical service for treatment. Each staff surgeon's work is represented, also a liberal sprinkling of private work done by nonmembers of the hospital staff.

I have arranged this report somewhat after the model of an individual history as taken by the house officer. As regards family history, there seems to be little of importance. Occasionally there was an interesting coincidence; for example, one patient, a physician's

wife, wrote me that she, her husband and their son were each recently operated on for cholelithiasis.

For convenience the ages are divided into decades, from 10 to 20 to 71 to 80 (Table 1). Complications and associated pathologic conditions have not been noted here.

TABLE 1.—AGE GROUPS

Age	Cholelithiasis No.	Cholecystitis No.
From 10 to 20	1*	6
From 21 to 30	41	17
From 31 to 40	83	18
From 41 to 50	92	20
From 51 to 60	80	17
From 61 to 70	32	6
From 71 to 80	9	3
Total	338	87

* A girl of 18.

There were eighty-three males and 342 females who came under observation, a ratio of about 1:4.

TABLE 2.—NATIONALITY*

	No.	Per Cent.
Americans	229	53.8
Russians	49	11.5
Swedish	18	4.2
German and Austrian	21	4.9
Polish	20	4.7
Italian	26	6.1
Armenian	6	1.4
Greek	1	

* Fifty-five histories did not state the nationality, but no marked disproportion is evident.

TABLE 3.—OCCUPATION*

	No.
Housework	273
Labor	24
Shop	28
Sedentary	36
Nurses	5

* Fifty-nine histories did not state the occupation.

Under previous illnesses (Table 4) are noted the more important ones, not including the contagious diseases of childhood, one or more of which was recorded in nearly every case.

TABLE 4.—PREVIOUS ILLNESSES

	No.	Per Cent.
Marked constipation*	166	39
Recurrent attacks of tonsillitis	46	10.8
Typhoid fever	43	10.1
Scarlet fever	38	8.9
Pneumonia	31	7.8
Appendicitis	29	6.8
Rheumatism	25	5.8

* This not being mentioned in the other histories.

Of the 342 women, 151, or 44.1 per cent., had had children, and twenty-three, or 6.7 per cent., were unmarried.

Pain of some sort was almost a constant symptom, it being described in 84 per cent. of cases. Practically all patients had repeated attacks; many of them could ascribe an attack to some particular cause. Probably the most common cause in those having had children was labor. Not a few patients suffered an attack shortly after delivery.

Indiscretion in diet would precipitate an attack in many. A few patients could almost certainly expect

an attack following an alcoholic debauch, while constipation figured frequently.

The time of onset was not mentioned in most of the histories, but from those in which it was stated, about 50 per cent. were nocturnal.

The duration of gallbladder disease as determined by pain seemed to be of considerable interest when considered with the complications, the difficulty experienced at operations, and the advanced age of many of these patients when they eventually came to operation.

A few of the younger patients, and particularly those who had a cholecystitis, were admitted during the initial attack. The duration in the 283 cases in which this was stated is given in Table 5.

TABLE 5.—DURATION

Duration Years*	No.	Per Cent.
From ½ to 1	118	41.7
From 1 to 2	38	13.4
From 2 to 3	29	10.2
From 3 to 4	14	4.9
From 4 to 5	14	4.9
From 5 to 30	70	24.7

* In a few the duration was even longer than thirty years.

TABLE 6.—LOCATION OF MAXIMUM PAIN

Location	No.	Per Cent.
Right upper quadrant	179	50.5
Epigastrium	130	36.7
Right lower quadrant	27	7.6
General to abdomen	18	5
Radiation to back or shoulders	159	44.9
Colicky	148	41.8

The maximum pain as located in 354 cases is given in Table 6. The character was not definitely described in about half the cases. Other symptoms frequently mentioned were indigestion and vomiting, which were noted in 215, or 50.5 per cent. of cases. In 120, or 28.2 per cent., jaundice appeared, and loss of weight in fifty-three, or 12.4 per cent. The maximum point of tenderness as noted in 270 cases was located 177 times in the right upper quadrant; forty-eight times in the right lower quadrant, and forty-five times in the epigastrium. It was not localized in 155 examinations. On palpation, the gallbladder could be felt in forty-nine cases, the liver in six, and the pancreas in one.

A roentgen-ray examination of the stomach or gallbladder was made in seventy of the cases, with the reports given in Table 7.

TABLE 7.—ROENTGENOGRAPHIC REPORTS

Condition	Diagnosis	No. of Cases
Cholelithiasis	Adhesions about the pylorus	10
Cholelithiasis	Gastroptosis	8
Cholecystitis	No evidences of cholelithiasis	7
Cholelithiasis	Gastric or duodenal ulcer	8
Cholelithiasis	New growth	6
Cholelithiasis	Stomach and gallbladder appeared normal	17
Carcinoma of gallbladder with cholelithiasis	Gastric carcinoma	1
Cholelithiasis	Poor plates	5

Gallstones were demonstrated in two cases. In six cases gastric or duodenal ulcer was demonstrated in which cholelithiasis was also present.

Of the 425 patients under discussion, thirty-five, or 8.2 per cent., had previously been operated on for

cholelithiasis, a drainage of the gallbladder having been done; fifteen of these had recurrent cholelithiasis; three had stones in the common duct; fourteen suffered from cholecystitis and adhesions, and three from biliary sinuses. In two other cases the gallbladder had previously been removed; these patients returned with symptoms of stones in the common duct.

In all, 331 cases came to operation. Ninety-four patients either refused operation or were advised not to be operated on for some sufficient reason. Cholecystostomy was performed in 171, or 51.6 per cent., of cases; cholecystectomy, in 139, or 42 per cent. Adhesions about the gallbladder were broken up in twelve cases. There was primary closure of the gallbladder after removal of stones in four cases. No pathologic condition about the gallbladder was found in three cases, and in two cases the small bowel was opened for the removal of gallstones causing intestinal obstruction.

ASSOCIATED PATHOLOGIC CONDITIONS

The appendix was found to be definitely diseased and was removed in thirty-nine cases; cancer of the gallbladder in four; ruptured gallbladder and general peritonitis in four; gastric ulcer in three; duodenal ulcer in four; a perforation of the gallbladder into the duodenum in two, and a perforation of the gallbladder into the stomach in one. There was one case of acute pancreatitis with fat necrosis and there were twelve cases of chronic pancreatitis.

One patient had a painless jaundice of six months' duration, with congestion of the liver and marked loss of weight. A large stone was removed from the common duct, following which she made a complete recovery and is now well, four and a half years following operation.

TABLE 8.—AGE OF PATIENTS WHO DIED

Age, Years	No. of Patients
Between 61 and 70	7
Between 51 and 60	10
Between 41 and 50	13
Between 31 and 40	3
Between 20 and 30	2

MORBIDITY, CONVALESCENCE AND MORTALITY

The average length of time spent in the hospital following cholecystostomy was twenty-three and a half days, as against twenty-two and a half days for cholecystectomy. Of 148 replies to the circular letter, sixty were from cholecystectomy patients, of whom three, or 5 per cent., had recurrent pain since operation. Seventy-four were from cholecystostomy patients, of whom nine, or 12.1 per cent., had recurrent attacks of pain. Four were from patients who had adhesions about the gallbladder broken up; two, or 50 per cent., of these had recurrent attacks of pain. In one of the four primary closures the patient had recurrent attacks of pain.

Nine patients who were discharged without operation replied. Convalescence was recorded as satisfactory in 271 cases and as stormy in twenty-nine, while thirty-one patients died. Of these there were eleven cholecystectomies, one carcinoma of the gallbladder, in which nothing more than exploration was done, and nineteen cholecystostomies. It is a fact, however, that the more desperate cases, including one carcinoma with stones and four ruptured gallbladders with general peritonitis, were among the cases with drainage.

The operative mortality, excluding the four cases of general peritonitis and the one case of carcinoma in which the patient lingered on and died before leaving the hospital, is 7.8 per cent. Deaver, in 1916, reported 1,031 cases with a mortality of 7.2 per cent. Twenty-five New York hospitals reported a series of cases with a mortality of 8.3 per cent. Mayo reports 4,000 cases with a mortality of 2.75 per cent.

TABLE 9.—DURATION OF GALLBLADDER DISEASE IN PATIENTS WHO DIED

Duration Years	No. of Patients
40	3
55	1
25	1
6	2
From a few days to 3 years	22*

* Three of these patients had previously been drained.

TABLE 10.—CAUSES OF DEATH

Myocarditis and general arterial changes	9
Pneumonia	6
Postoperative hemorrhage	5
Peritonitis	4
Pulmonary embolism	2
Fecal fistula	2
Typhoid fever	1
Acute nephritis	1
Abscess of liver	1

SUMMARY

It will be noted that when patients with gallbladder disease pass the 50-year mark, the operative mortality rises very abruptly, as out of the seventy-one patients admitted between 50 and 60 years, thirteen, or 18½ per cent., died. Of thirty-eight between 60 and 70, ten, or 26½ per cent., died; of twelve between 70 and 80, seven, or 68½ per cent., died, while out of 278 under 50, five, or 1.8 per cent., died.

When we consider the fact that the vast majority of cases develop before the age of 50 years, it would seem that we should try to prognosticate the eventualities and at least advise early operative procedures.

Of previous diseases, constipation is the most striking and of undoubted significance.

The addition to the twenty-nine previous appendectomies of the thirty-nine chronically inflamed appendixes removed at the time of gallbladder operation makes a total of sixty-eight, a rather large coincidence.

Of the acute infectious diseases in this series of cases, typhoid fever was not noted as frequently as recurrent attacks of tonsillitis, and only slightly more frequently than was scarlet fever, pneumonia or rheumatism.

When we add to the eighty-three males the twenty-three unmarried females and the 168 married women who did not give a history of childbearing, we get a total of 274 cases occurring independently of childbirth; and when it is recalled that the age of gallbladder disease in all patients coincides pretty closely with that of gestation, it does not seem that the latter is of unusual significance. (Undoubtedly there were some cases of pregnancy not noted.)

Indigestion without typical gallbladder pain was one of the most difficult symptoms to solve, and delayed the accurate diagnosis for a long time in many cases.

The comparative results of cholecystostomy and cholecystectomy in this series of cases show forty-four successful drainages against five unsuccessful ones.

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Therapeutics

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AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Continued from page 104)

THE CATHARTIC SALTS

EFFECT ON URINE

That portion of the saline which is absorbed is chiefly eliminated by the urine, producing a diuretic action in inverse proportion to the cathartic effect. Generally, of course, owing to abstraction of water by way of the intestine, there is a diminution in the urinary secretion for about twelve hours. This is followed by increased secretion of urine for perhaps the next twenty-four hours. Very dilute, as well as very concentrated solution, and also very small doses, or antagonizing the cathartic action by remaining in bed after taking the dose or by the use of morphin, all bring out the diuretic action at the expense of the cathartic effect.

The curious observation has been made that magnesium sulphate increases acidity and ammonium in the urine, while sodium sulphate decreases urinary acidity. The reason for this lies in the different degree of absorbability of the various ions yielded by these salts in the intestine. The magnesium ion is more slowly absorbed than the sulphate ion. Hence, more magnesium remains in the bowel, while the acid ion, in passing through the system, abstracts alkali and acidifies the urine. With sodium sulphate, the reverse is the case. The sodium ion is more rapidly absorbed than the sulphate ion. Hence, an alkaline wave passes through the system and into the urine. This might cause sodium sulphate to be preferred to magnesium sulphate in conditions of acidosis or when it is desirable to keep urinary acidity low.

CHOICE AND ADMINISTRATION

The cathartic salines differ among themselves in potency and palatability, as well as in details of action, all of which determine their choice.

The mildest and most inoffensive of the group is *magnesium oxid*, which, in the form of "milk of magnesia" (magnesia magma), is the only cathartic saline admissible in the presence of vomiting. The preparation is so mild in action that it is chiefly suitable as a laxative for infants, with whom 1 or 2 teaspoonfuls added to milk or other feeding daily may suffice as a temporary expedient. To the adult, tablespoonful doses may have to be given repeatedly before laxative effect is obtained. Magnesium oxid is likewise rather feeble in cathartic action, and is more useful as a gastric antacid than as a laxative, especially in view of the reputed danger of formation of intestinal con-

* This is the fourteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

cretions, when it is used for a time in the large doses required for cathartic effect. When magnesium oxid is prescribed by the teaspoonful, its lightness should be borne in mind. Even the "heavy magnesium oxid," the only form that should be employed internally, does not weigh much more than 1 gm. (15 grains) per teaspoonful. True, 2.5 gm. (40 grains) are equivalent in magnesium contents to 15 gm. (240 grains) of magnesium sulphate; but the oxid is much feeble in action, as it lacks solubility and, of course, the sulphate ion. To children, magnesium oxid might be given in the following dosage:

For 6 months old, from 0.30 to 0.60 gm. (5 to 10 grains)
For 18 months old, from 0.60 to 1.30 gm. (10 to 20 grains)
For 3 years old, from 1.30 to 2.00 gm. (20 to 30 grains)
For 5 years old, from 2.00 to 3.00 gm. (30 to 45 grains)

The subjoined prescription yields a palatable administration form for this drug:

R Magnesium oxid15 gm.
Fennel oil-sugar30 gm.
M. Label: One half of level teaspoonful two or three times daily.

Sodium phosphate is undoubtedly, next to magnesia, the least offensive of the cathartic salines. The taste is sufficiently like that of cooking salt to permit its administration in salt-free broth without the knowledge of the patient. It can thus be readily administered to a child. For bottle-fed infants, a dose of from 0.12 to 0.25 gm. (2 to 4 grains) may be added to each bottleful of milk. Dosage for children might range as follows:

For 6 months, from 0.30 to 0.60 gm (0.5 to 10 grains)
For 18 months, from 0.60 to 0.90 gm. (0.10 to 15 grains)
For 3 years, from 0.90 to 1.30 gm. (0.15 to 20 grains)
For 5 years, from 1.30 to 2.00 gm. (0.20 to 30 grains)

For a child 3 years old this salt may be prescribed in the form of the following solution of actually delicious taste:

	Gm. or C.c.	
R Sodium phosphate	12|0	3iii
Syrup of raspberry.....	20|0	3v
Orange flower water to make.....	60|0	3ii

M. Label: Teaspoonful with water every two hours until evacuation is obtained.

As this is a fairly saturated solution, increase in dosage would be obtained by having the patient take a larger spoonful. For an adult, the dose of this solution would be a tablespoonful. However, adults take it readily in doses of from 2 to 8 gm. ($\frac{1}{2}$ to 2 drams) in a teacupful of water, as hot as can be borne. Such a dose might be administered once, twice or thrice daily, half an hour before meals; or else the effervescent sodium phosphate may be taken by the dessert-spoonful in half a tumblerful of cold water or lemonade.

For the bitter cathartic salines, cold effervescing solution is the best administration form. The effervescence diminishes their taste: chiefly, perhaps, in a physical manner. Innumerable gas bubbles are formed the instant the cold fluid charged with carbon dioxid comes in contact with the warm surface of the mouth. The tasteless gas, taking the place, to a large extent, of the salty liquid, protects much of the gustatory surface against excitation. Furthermore, carbon dioxid as well as coldness have a depressing effect on the excitability of the gustatory nerve endings. Imparting

effervescence to the dose is also of advantage for its effect on the stomach, chiefly because it expedites the passage of ingested material out of the stomach.² The sedative effect of the carbon dioxid on the gastric mucosa also lessens the nauseating tendency of these salts. These considerations enable one to understand why effervescent preparations are so prominent among the administration forms for soluble salines. It seems self-evident, however, that the administration of carbonated drinks should be avoided in patients with flatulent distention of the abdomen and in those suffering from dyspnea. Likewise is administration in effervescing form contraindicated in patients with cardiac enfeeblement. It is particularly obnoxious in dropsical patients with ascites.

All four available means of imparting effervescence to pharmaceutical products are made use of in the administration of these bodies.

In the preparation of the *Solution of Magnesium Citrate*, the most pleasant administration form for soluble cathartic saline, there is added to the sweetened and flavored fluid containing magnesium citrate and an excess of citric acid, just before inserting the stopper, a sufficient quantity of crystallized potassium bicarbonate to neutralize the acid. The stopper, having been securely fastened, retains the liberated carbon dioxid under pressure, so that on removal of the stopper, copious effervescence ensues. The dose of this solution for a vigorous adult is a bottleful (360 c.c., or 12 ounces). For persons presumably easily acted on, one half of the contents of the bottle may be given, and the balance kept in a cool place and well stoppered, to be administered in two or three hours if the first dose has not produced the desired result. Larger children will take a wineglassful of this solution with relish; and this dose may be repeated every two hours until a satisfactory evacuation has been obtained. Small children or infants should not be given this or any other effervescent medicament, as the unaccustomed appearance of the "spots" in the fluid frightens and repels them.

"*Seidlitz Powders*" (*Compound Effervescing Powder*) represent an ingenious method of obtaining an effervescing preparation of excellent keeping qualities. The effervescing ingredients (sodium bicarbonate and tartaric acid) are simply kept separate by being wrapped in powder papers of distinctive color—white for the acid, blue for the alkaline powder—to the latter of which are added 8 gm. (2 drams) of sodium and potassium tartrate. Just before taking, they are mixed in half a tumblerful of water. By having the water ice cold, and adding lemon juice and sugar to it, the dose may be made fairly palatable. One pair of powders is a rather mild aperient. Two pairs may be taken at one time, if required; or the dose may be repeated every three or four hours until the desired effect is obtained. A patient who is nauseated will probably not retain the whole dose given at once; but, when each of the powders is divided into fourths and this given in half a wineglassful of water every fifteen

2. This is the reason, for example, for the popularity of "soda water" during hot weather for water quenches thirst only while it is in the mouth and after it has left the stomach.

minutes, one may succeed in "settling" the stomach and producing an evacuation of the bowel at the same time.

Effervescent purgative salts are nothing more or less than a mixture of sodium bicarbonate and tartaric acid with the purgative saline—preferably sodium phosphate. All that is required for fair keeping qualities is that the ingredients be dry and be kept dry. Granulation is nonessential.

Finally, the saline may be added to carbonated water from a siphon bottle. In this manner, *magnesium sulphate*, the cheapest, most powerful, and most widely used of the salines, may readily be administered in its best disguise, namely, in form of ice-cold effervescing lemonade made without sugar, for the bitter-sweet taste is even more obnoxious than the bitter. Thus, a tablespoonful of Epsom salt may be mixed in a tumbler with a tablespoonful of lemon juice, a little cold water added for solution of the salt, and then the glass be half-filled with ice-cold carbonated water. Sucking a little lemon before, and drinking a large tumblerful of cold water immediately afterward are still further helpful in overcoming the disagreeableness of a dose of bitter salt.

In view of this abundance of satisfactory administration forms for salines, what justification is there for prescribing proprietary fancy-named products, whose only merit lies in clever advertising? An example of the result of the thoughtless recommendation of nostrums by physicians is "Sal Hepatica."³

MINERAL WATERS

Mineral waters are closely akin to nostrums in the manner in which many of them are exploited. For example, "Pluto Concentrated Spring Water," for which claims are made which in mendacity almost rival those of "patent medicines" in their palmiest days, owes its activity to Glauber's salt, 50 per cent.; Epsom salt, 31 per cent.; cooking salt, 2.5 per cent., with calcium sulphate nearly 3 per cent., and a trace of magnesium carbonate.⁴ Does any rational-minded physician believe that he will get better or different results from this combination than he would from an analogous amount of either sodium sulphate or magnesium sulphate? Then why make the patient pay so much more for his "dose of salts"? Whenever physicians are as lavishly supplied with samples as they are with "Sal Hepatica" and "Pluto Water," let us remember that, aside from many other objections to them, somebody will have to pay a great deal more for the stuff than it is worth and resolve that it will not be our patients.

Experience, forced on us by the war, has shown that we can get along just as well—and, in point of fact, a great deal better—without such world-famed mineral waters even as "Hunyadi" or "Carlsbad."

While taking a mineral water at the springs adds the benefit of climatotherapy to that of pharmacotherapy, it is surely indisputable that whatever virtue is inherent in a mineral water taken at home is innate

in its constituents. An artificial combination of these cannot fail to be just as good. Indeed, it is much better; for the physician can then control the constituents in such a way as to make them more suitable to the individual for whom they are intended. For example: Carlsbad salt is a combination of approximately the following composition: sodium chlorid, 1 part; sodium bicarbonate, 2 parts; sodium sulphate, 4 parts. The combination of alkali with cathartic saline must be admitted to have peculiar virtues. For one thing, it is better borne by the stomach of most dyspeptics than is the simple saline. Furthermore, the alkali has certain therapeutic indications, the consideration of the details of which would lead us beyond the scope of this article, which at times, might well be met in a constipated individual by simultaneous administration of a purgative. The advantage of the possibility of varying the proportions in the salt combination to meet the special indication of these different cases is sufficiently obvious to require further discussion. More than this can, however, be accomplished. There is no reason to suppose that it is impossible to improve on "nature," which, in this case, is nothing but the fortuitous presence of certain salts in the strata of earth through which the water happened to pass. In case of the Carlsbad salt combination, for instance, a great improvement in taste can be secured by substituting sodium phosphate for the sodium sulphate, and sodium citrate for the sodium chlorid, as in this prescription:

R	Sodium citrate	Gm.	
	Sodium bicarbonate	15|0	℥ss
	Sodium phosphate	30|0	℥i
		60|0	℥iii
M.	Label: Teaspoonful in a cupful of hot water half an hour before meals.		

This salt formula has secured as good results as have been obtained in suitable cases from Carlsbad salt, natural or artificial. A most important thing to be remembered in prescribing the salts of mineral waters is that the chief ingredient of mineral water is the water.

(To be continued)

Campaign Against Child Labor.—How hundreds of communities throughout the country have organized against child labor and illiteracy is told in a bulletin "Every Child in School" just issued by the Children's Bureau of the U. S. Department of Labor. This bulletin describes the methods and results of the "Back-to-School" and "Stay-in-School" campaigns carried on last year by forty-four states and the District of Columbia under the auspices of the Children's Bureau and the Council of National Defense. A larger proportion of these states have continued their efforts to stamp out child labor. As a result school time has been prolonged in many communities for boys and girls who might otherwise have had their education cut short. The "Back-in-School" and "Stay-in-School" campaigns have shown that in many places school attendance and child labor laws are not enforced. Many children of school age are in factories because there was not a sufficient number of attendance officers and factory inspectors to keep them in school and out of industry. In a single district an inspector reported 1,700 children as not having had a day of schooling. In many rural districts the children attend school only about half the time, and the hours for rural schools are very short. It is conditions such as these, the bulletin points out, that make the United States eighth instead of first on the list of civilized countries with regard to the proportion of literacy among its citizens.

3. Sal Hepatica, J. A. M. A. 62: 472 (Feb. 7) 1914.

4. Pluto Concentrated Spring Water, J. A. M. A. 60: 1013 (March 1913).

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SATURDAY, JANUARY 17, 1920

RECENTLY DISCOVERED ASPECTS OF THE CAPILLARY BLOOD VESSELS

Recent investigations are conspiring to invest the blood capillaries with unexpected powers and correspondingly increased importance. Most of us have been taught to regard them as plastic vessels that permit the passage of waste or nutriment, as the case may be, through them by diffusion or other physicochemical processes. The capillaries, being devoid of a musculature such as is responsible for the changes in the caliber of the arteries, were assumed to be incapable of independent alteration of size, although they evidently respond passively to the greatly unlike volumes of blood driven into them at different times by the varying condition of the other parts of the circulatory system. Thus the capillary is well filled or empty, dilated or collapsed, according to the different masses of blood that reach it.

What has long been suspected regarding the motility of the capillaries in a few locations in the body has latterly become likely for many or all of them. These structures are known to have a formerly unsuspected nerve supply, which might be regarded as at least one prerequisite for independent contractile power. The existence of motility in nonmuscular cells, such as leukocytes, is familiar; hence, as Bayliss¹ has recently remarked, the absence of a muscular coat in the case of the capillaries does not warrant a denial of the possibility of active changes in caliber in the latter.

Professor Krogh² of Copenhagen has summarized considerable evidence which contravenes the prevailing conception that the blood is continuously flowing through the capillaries at rates that are determined solely by the state of contraction or dilatation of the corresponding arterioles. Under the old hypothesis, the dilatation of an arteriole will cause a rise of pressure in the corresponding capillaries, which will become passively expanded, to contract again by their own elasticity when the pressure is reduced. Today we seem, rather, forced to admit that these smallest vessels contain contractile elements of some sort within them-

selves and that they function especially in the direction of active dilatation. Thus the significance of a "capillary tone" can be understood.

The assumption of independent motility of the capillaries helps to explain the enormous variations in permeability that may be exhibited somewhere in the capillary region quite independent of any corresponding or coincident changes in general blood pressure, which have often been regarded as the impelling forces in the exchanges thus going on. In certain types of shock, for example, changes in the volume and concentration of the blood cannot be satisfactorily correlated under the older theories with the alterations of pressure in the circulation. The demonstration of independent activity on the part of the capillaries makes it easier to understand how blood may, as it were, disappear from the circulation. The capillary effect represented by the actively dilating vessels may actually overcome the usual effect of the contracting arterioles. Hereafter, therefore, it will be essential to know how and what substances act on the capillary mechanism, as well as their behavior toward the heart or the vessels equipped with contractile musculatures.

CARCINOMA OF THE APPENDIX

An English surgeon, Adams,¹ has recently commented on the fact that carcinoma of the appendix seems to be much less common in Great Britain than it is in the United States. He bases this statement on the observation that only four cases have been recorded among the 7,000 appendectomies that have been performed at St. Thomas' Hospital in London in the past seventeen years. This would give carcinoma of the appendix an incidence of only 0.05 per cent. in Great Britain, as contrasted with American figures which vary between 0.13 and 0.49 per cent.

Adams calls attention again to certain peculiarities of carcinoma of the appendix that distinguish it from most other forms of carcinoma. The explanation for the discrepancy between his figures and the American figures is quite clear, for he states in his article that routine microscopic examinations of the appendixes removed at operation were not made. This brings out the most important fact concerning carcinoma of the appendix, namely, that it is practically always an accidental finding. Figures such as those which have been published from the Mayo Clinic showing that nearly 0.5 per cent. of the appendixes removed were carcinomatous are due entirely to the fact that careful routine examination of all specimens is carried out. The fact that carcinoma of the appendix is usually an accidental discovery is due to certain peculiarities of the disease, the most important of which are the extreme slowness of its development and its comparative benignity. As a matter of fact, carcinoma of the appendix has practically never been diagnosed except on the operating

1. Bayliss, W. M.: The Capillary Circulation, Science Progress, October, 1919, p. 272.

2. Krogh, A.: The Supply of Oxygen to the Tissues and the Regulation of the Capillary Circulation, J. Physiol. 52: 457 (May 20) 1919.

1. Adams: Proc. Roy. Soc. Med. 12: 37, 1919.

able or in the necropsy room. When symptoms are present, they are the symptoms associated with appendicitis.

The condition is interesting on account of the questions that it raises. Carcinoma of the appendix is perhaps the best illustration we have of the fact that the microscopic structure of a neoplasm is not always a safe indication of clinical malignancy. It emphasizes a point of view that is sometimes forgotten—the division of neoplasms into benign and malignant neoplasms is, after all, an arbitrary one. There are not a few instances of tumors that are structurally benign causing metastases and presenting other characteristics of malignant growths. There are instances of new growths with the microscopic structure usually associated with malignancy which fail to metastasize and even fail to invade neighboring structures. Carcinoma of the appendix also brings up another question, namely, whether vestigial structures are more likely to be the seat of neoplasm than organs that are still of value to the body. It is, of course, notorious that regenerative changes take place in the appendix with great frequency, particularly the so-called obliterative appendicitis, and it has been suggested that carcinomas of the appendix are associated with this obliterative appendicitis. Some pathologists, indeed, have doubted whether many of the so-called neoplasms of the appendix were true neoplasms. They have held that the changes which occurred were in the nature of an atypical epithelial growth, such as may occur with many inflammatory chronic conditions, rather than true malignant neoplasms. The subject is worthy of further and more careful investigation.

THE METABOLISM OF THE NERVOUS SYSTEM

Recent years have witnessed a marked change in the views held with respect to the metabolism of the nervous system. Formerly this tissue was not regarded as an active participant in those types of chemical change in the body for which the muscles have been preeminently noted. The products of such metabolism are excreted in the body in the respiratory gases and, to a far smaller degree, in the urine. Augmented muscular activity is promptly followed by an increased output of carbon dioxide and water that is rarely so small as to escape detection. In all the experiments which have been conducted to discover analogous increments of waste products incident to the activity of the nervous system, only negative results have been recorded by the same method of investigation. When dietary factors and muscular performance have been essentially unchanged, the vigorous exercise of the higher nervous system, so far as this is possible by the conscious rebration of intellectual effort, has never been observed to alter the metabolism of matter and energy in the body as a whole.

This is not strange, however, if the small bulk of the nervous system in comparison with the ever-functioning muscular tissues is taken into account. Small increments of output may fail of appreciation in the larger aggregate of waste from other sources. The conventional methods of study have left us in the lurch in the study of the possible metabolism of the small, yet highly valuable portion of the body represented by the brain and its nervous appendages. Here the study of the isolated tissue, particularly by micro-analytic methods, has thrown new light on the functioning of those structures which were scarcely believed to exhibit the same order of energy transformations and material changes that are the conspicuous accompaniments of activity in muscles and glands. The investigations of Tashiro, in particular, at the University of Chicago, have demonstrated that nerve fibers have a metabolism as active as that of any tissue in the body. Ganglions appear to have a somewhat higher rate than the nerve fibers. Such estimations as have been made of the oxygen consumption of the brain—an index of its chemical exchanges—place it at a figure decidedly greater than that of skeletal muscle.

Evidently, then, the nervous tissues are not devoid of a vigorous "internal respiration." For the activity of the muscles, carbohydrates are now looked on as the preferred source of energy. Recent studies by Hirschberg and Winterstein¹ at Rostock have shown that the nervous system likewise can utilize sugars if one may judge from their disappearance from solutions brought into intimate contact with surviving nerves. There may also be some metabolism of nitrogenous components detectable even in the small portions of tissue that have been examined in this way by these observers.²

Even more unexpected, however, is the evidence presented for the metabolism of the lipid components of nerves in the presence of oxygen.³ This disintegrative change can be retarded by the presence of sugars, which seem to exert a "sparing" action on the lipoids. The products of the oxidative breakdown of the nerve lipoids is not yet known. This evidence of the possible involvement of the lipoids in nerve metabolism is in harmony with the contention of Mathews,⁴ who regards the medullary sheath as probably nutritive. He has pointed out that the brain contains no glycogen or neutral fat. Since the nerve cells must have a good supply of raw material for such active metabolism as the experiments on tissue respiration indicate them to have, there is no apparent reason why the abundant lipoids should not be drafted into use.

1. Hirschberg, Else, and Winterstein, H.: Ueber den Zuckerstoffwechsel der nervösen Zentralorgane, *Ztschr. f. physiol. Chem.* **100**: 185, 1917. Hirschberg, E.: Der Umsatz verschiedener Zuckerarten im Stoffwechsel der nervösen Zentralorgane, *ibid.* **101**: 248, 1918.

2. Hirschberg, Else, and Winterstein, H.: Ueber den Stickstoffumsatz der nervösen Zentralorgane, *Ztschr. f. physiol. Chem.* **101**: 212, 1918.

3. Hirschberg, E., and Winterstein, H.: Ueber den Umsatz von Fettsubstanzen in den nervösen Zentralorganen, *Ztschr. f. physiol. Chem.* **105**: 1, 1919.

4. Mathews, A. P.: *Physiological Chemistry*, New York, 1915, Chapter XIII.

RENAL GLYCOSURIA

Interest in the subject of so-called renal diabetes has been greatly increased since estimations of the sugar content of the blood have become more commonly and easily carried out. The current conception of the condition referred to involves a glycosuria that occurs when the blood sugar is not significantly increased in amount, that is, when hyperglycemia cannot be demonstrated. The analogy of experimental phlorizin diabetes in which there is likewise a liberal renal output of sugar without any increase in the percentage content of sugar in the circulating medium of the body has frequently been referred to. In either case it has been assumed that the anomaly leading to the "renal glycosuria" resides in the kidneys, and that the disease is of renal rather than general metabolic significance.

A careful student of the subject has stated that "clinically, it is dangerous to make a diagnosis of renal diabetes until the patient has been under observation for several years."¹ This can scarcely be true in those instances in which the examination of the patient is controlled and supplemented by accurate and adequate laboratory data. Otherwise we should hesitate to refer to cases of "renal glycosuria" studied with exceptional care by Allen² and his co-workers in U. S. Army General Hospital No. 9 at Lakewood, N. J., where a diabetic service was instituted. Observation of three cases of the renal type as compared with thirty-seven cases of true diabetes in military service, and the increasing number of reports in the literature, as the determination of blood sugar content increases, led the army investigators to conclude that "renal" glycosuria is not as rare as once supposed, and probably is much commoner than other anomalies, such as pentosuria or levulosuria. It has by no means been definitely established, however, that the excreted sugar in "renal" glycosuria is in every instance identical with the common diabetic sugar, glucose.

As has been noted in earlier cases, no fixed relations were observed between the sugar in blood and urine. The renal excretion does not necessarily serve to maintain a low level of blood sugar. The output is not always higher with high than with low blood sugar. According to Allen's observations, the sugar excretion seems to be determined by the supply of available carbohydrate, especially preformed, but also to less degree by the potential carbohydrate of protein. The fat ration and total metabolism, which are important in true diabetes, are probably without influence.

No hypothesis that has been suggested thus far serves to explain satisfactorily the genesis of a condition of glycosuria apparently independent of hyperglycemia. As Allen and his co-workers point out, it is not yet proved that the abnormality lies in the kidney,

or that it consists merely in a lowering of the normal threshold of sugar excretion. It is possible that cases differ in kind as well as degree, and that a group of anomalies have heretofore been included under this name. Fortunately, however, the prognosis in the persistent condition described is very favorable, thus standing in striking contrast with what so commonly obtains in true diabetes mellitus. Perhaps "renal" glycosuria will be found to represent only an exaggerated instance of the "glycuresis" which Benedict has described as occurring in normal man and leading to a minute though commonly present content of sugar in the urine.³ In any event, now that the greater frequency of a relatively harmless renal glycosuria is appreciated, it will henceforth be more essential than ever before to make a differential diagnosis with the utmost accuracy that present clinical methods permit. One type of glycosuria may benefit greatly by suitable dietary restrictions, whereas the other rarer form does not require comparable personal sacrifices.

SOME ASPECTS OF WAR EDEMA

The people of the United States were fortunate, during the past five years, in averting more than one disaster that has overtaken the inhabitants of some European countries. They have escaped the dangers of various infections; they have been far removed from the nervous depression and accompanying harm; and however restricted they may have been in diet, real physiologic deprivations of necessary food have not been felt to any considerable extent. Hence we must look abroad for direct evidences of the diseases that unusual deprivations have created or brought into prominence. "War edema," known in Napoleon's campaigns and sometimes observed in institutions in which restrictions in living conditions are enforced, was emphasized as a disease entity of widespread distribution in the last three years of the war.

The pathologist is wont to dwell on the special or immediate causes of edemas, on cardiac or renal factors, on inflammatory involvements, on neuropathic and even hereditary features that precede the symptoms. The phenomena of war edema must be related to antecedent causes which still need to be recognized clearly and determined with scientific accuracy before the complete etiology can be written. An unusually comprehensive investigation reported by Schittenhelm and Schlecht⁴ of Kiel, as the result of elaborate studies amid an abundance of German cases, may assist in clearing up some of the disputed points. Aside from the somewhat differing symptoms of pain, fatigue, skin

1. Joslin, E. P.: *Treatment of Diabetes Mellitus*, Philadelphia, 1917, p. 64.

2. Allen, F. M.; Wishart, Mary B., and Smith, L. M.: Three Cases of "Renal Glycosuria," *Arch. Int. Med.* **24**: 523 (Nov.) 1919.

3. Glycuresis versus Glycosuria, editorial, *J. A. M. A.* **72**: 1772 (June 14) 1919. *J. Biol. Chem.* **34**: 195 (April) 1918.

4. Schittenhelm, A., and Schlecht, H.: Ueber die Oedemkrankheit I, Klinik und pathologische Anatomie der Oedemkrankheit, *Ztschr. f. exper. Med.* **9**: 1 (July) 1919; II, Das Oedem, *ibid.*, p. 40; III, Chemische Untersuchungen von Blut und Oedemflüssigkeit bei der Oedemkrankheit, *ibid.*, p. 68; IV, Stoffwechsel der Oedemkranken, *ibid.*, p. 75; V, Die Pathogenese der Oedemkrankheit, *ibid.*, p. 82.

sorders, localized edema, etc., there is unanimity in the finding of a greatly lowered condition of general nutrition. The subcutaneous adipose tissues are always entirely depleted; the musculature may be reduced to an exquisitely atrophic state, and the vigor of the subject is correspondingly diminished. Resistance to infectious invasions of the skin naturally decreases, leaving all sorts of cutaneous and subcutaneous disorders in its wake.

The recent tests in many illustrative cases show that the excretory capacity of the kidney for water and salt is not essentially decreased; hence it appears that edema of this type is not of renal origin. Not only this fact, but the entire symptomatology suggests that war edema presents an involvement of the entire organism in which the edematous features are only a single manifestation. The blood plasma has been found to be greatly diluted, as if there were a decided depletion of protein in the body. The restoration of the blood in respect to protein content is accordingly one of the early manifestations of feeding albuminous foods to edema patients.

Depletion of the body's reserves of nutriment furnishes the keynote to the pathogenesis of war edema. For a long time this loss of substance may not be apparent, because edema fluids replace the losses and, in keeping up the weight and contour of the body, simulate satisfactory nutrition. Chemical investigations tell the real story. Fats, lipoids and glycogen diminish; the blood is poorer in protein—not merely diluted with water; the composition of its corpuscles is altered. Everywhere there is depletion; but this by no means implies that loss of calories per se is impossible. Here we come into the domain of controversy. Is war edema to be regarded as the outcome of severe undernutrition in general, or is it the expression of a specific deprivation, such as a lack of protein, fat or vitamins? At present it cannot be gainsaid that all of these factors may be involved. The admittedly specific deficiency diseases, such as beriberi, frequently include manifestations of edema, but it must be borne in mind that lack of vitamins is not infrequently associated with diminished food intake in general and with consequent depletion of other body reserves. Whether the organism requires a minimum of fat as truly as a quota of protein below which nutritional disaster is sure to be encountered remains to be seen. Aron⁵ has lately contended that fats as such furnish constituents, aside from so-called fat-soluble vitamins, indispensable to the body. In the past much has been said about overfeeding of protein. The diet of war-time shortage abounds in carbohydrate which forms the basis of the intake of those compelled to live on restricted rations. May there not be an ill effect from undue increments in starch and sugar—an excess of carbohydrate?

These and other questions vigorously present themselves for consideration in connection with the mysterious war disease. As for the edema itself, we may quote the suggestion of Schittenhelm and Schlecht that scanty and one-sided diets may lead to imperfect make-up of the tissues—which includes that of the capillaries wherein the anatomic cause of the edema is to be sought. Arguing that even the war-time diets are not likely to be so utterly devoid of vitamins as to lead to the specific deficiency diseases classed as avitaminoses, the German clinicians are rather inclined to incriminate shortage of other food factors or overabundance of carbohydrate or both combined. Such dietary conditions are known to lead to comparable nutritive disorders, for example, the "Mehlnährschaden," in children. At any rate, the fact that it is possible for large masses of men to live and carry out their normal employment—as happened in Germany—on a much scantier diet than that to which they were accustomed can no longer be cited in support of the once widely quoted statement that "this state of economical nutrition seems to be without danger to health even when extended over several months."⁶

Current Comment

LEST YOU FORGET—"A REMINDER"

Three weeks ago a green slip, to be used in remitting subscriptions and Fellowship dues for 1920, was inserted in *THE JOURNAL*. This slip was circulated in place of statements addressed to individual subscribers and Fellows. A large number have returned the slips with their remittances, and their cooperation has resulted in a large saving for the Association in postage. For the convenience of those who have not yet made the remittance, another slip is inserted in this issue. Moreover, it will remind those who may have made use of the previous slip that they may take advantage of the clubbing offers announced on the colored insert in the front advertising section of this number.

PUPILLARY CHANGES IN SYPHILIS

Stress has been placed for many years on the importance of pupillary changes in the detection of latent syphilis and of certain diseases of syphilitic origin, such as locomotor ataxia and general paresis. These pupillary changes have usually been described as symptomatic of the late stages of the disease. Recently Nicolau⁷ has called attention to the fact that pupillary changes are common in the early stages of syphilis. Thus, inequality of the pupils particularly may occur even before the appearance of the skin manifestations of secondary syphilis. Nicolau associates it with the early changes in the central nervous system which are

6. Report on the Food Requirements of Man and Their Variations According to Age, Sex, Size and Occupation, Food (War) Committee, Royal Society, London, Harrison & Sons, March, 1919, p. 16.

7. Nicolau: *Ann. de dermat. et syph.* 7: 283, 1919.

evidenced by changes in the cerebrospinal fluid obtained by lumbar puncture. He recognizes the well known fact that pupillary inequalities are not infrequent in normal persons, and states that approximately 3 or 4 per cent. of normal persons show such changes. He maintains, however, that syphilitic persons show pupillary inequalities in the early stages of the disease in a much higher percentage of cases. At least 10 per cent. of early syphilitics were found to have marked pupillary inequality, and 70 per cent. showed slight pupillary inequality. While the value of these observations is somewhat impaired by the comparative frequency of pupillary inequality in normal persons, they are not without interest, and the sign will doubtless be of some value in conjunction with other signs. In doubtful cases of any disease the diagnosis is usually reached by combining many symptoms and signs which in themselves may be trifling.

COLD STORAGE TESTIMONIALS

The law which limits the length of time that food products may be kept in cold storage could with advantage have its scope extended to include "patent medicine" testimonials. Physicians recently received through the mails—at a time when the mails were frightfully congested with Christmas business—a sixteen page pamphlet sent out in a plain envelop as First Class Matter. The caption of the pamphlet reads: "Cough and Its Treatment in Pulmonary and Laryngeal Tuberculosis: By Henry Levien, M. D., While Medical Director and Physician-in-Charge of the Liberty Sanitarium, Liberty, N. Y. From the *Buffalo Medical Journal*." The pamphlet is devoted to the alleged virtues of that dangerous and widely advertised nostrum, "Glyco-Heroin (Smith)," whose more recent and less descriptive name is now "Glykeron." Physicians might assume, and doubtless will assume, from the pamphlet that this reprint represents a recent pronouncement on the subject with which it deals. The facts are that the "Liberty Sanitarium" has, apparently, been out of existence for at least fifteen years, while the article itself originally appeared more than eighteen years ago—September, 1901. One of many physicians who sent in the copies received, called attention to the fact that he had left the address to which the pamphlet was directed, more than six years ago. Even at that, the mailing lists of the concern that sells this heroin-containing nostrum are more than twelve years ahead of its "clinical reports."

Medicated Soaps.—Medicated soaps are for the most part a snare and delusion so far as any increased germicidal action is concerned. In fact, the addition of carbolic acid, bichlorid of mercury, and other substances which have the property of combining chemically with the soap seems actually to diminish the disinfecting value of the substance. As a rule a very small quantity of the disinfecting substance is added to the soap, and when we call to mind what an exceedingly small quantity of soap is generally used for the ordinary washing of the skin and the further dilution of this small amount by the water used it is easy to understand that medicated soaps as ordinarily applied cannot have an energetic disinfecting action.—Rosenau, "Preventive Medicine and Hygiene."

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Child Hygiene Bureau Established.—The Birmingham Health Department, December 1, established a bureau of child hygiene. This bureau will undertake to teach child culture and to act in an advisory capacity to parents and to the other branches of the health department.

Infirmery to Be Remodeled.—A permit was issued, November 17, for the Fraternal Hospital, Birmingham. The present building of the McAdory Infirmery is to be remodeled and additions made until the capacity of the institution will be 152 beds. Dr. Willington P. McAdory, Birmingham, is president, and Dr. John H. Stephens, Hendersonville, secretary of the new hospital organization, which is capitalized at \$125,000.

Personal.—The Bureau of Venereal Disease Control of the State Board of Health has arranged with Dr. Hugh L. Appleton, Gadsden, to conduct a cooperative clinic in Gadsden.—Dr. Lloyd Noland, Birmingham, superintendent of health of the Tennessee Coal and Iron Railroad Company, was the guest of honor at a banquet, held December 13, in Birmingham, tendered by the district physicians and other officials of the department of health as a tribute to the achievements wrought by Dr. Noland in the organization of that work. Dr. Grosbeck Walsh, Birmingham, presided as toastmaster.

New Officers.—The Mobile Medical Society at its meeting, December 6, elected Dr. Alfred E. Maumenee, president; Dr. William H. Oates, vice president; Dr. Willis W. Scales, secretary, and Dr. Edly W. Cawthon, Plateau, treasurer.—At the annual meeting of the Jefferson County Medical Society in Birmingham, December 3, Dr. E. Marvin Mason, Birmingham, was elected president; Dr. Robert E. Cloud, Ensley, vice president, and Dr. Gaston W. Rogers, Birmingham, secretary-treasurer.—Montgomery Medical Society at its annual meeting elected Dr. Milton B. Kirkpatrick, president; Dr. Frederick F. P. Boswell, vice president; Dr. Abraham Tumper, secretary, and Dr. Forney C. Stevenson, treasurer.

CALIFORNIA

Orthopedic Hospital School to Be Established.—To meet the physical, educational, and vocational needs of crippled children, an orthopedic hospital school is to be established by the Los Angeles Orthopedic Foundation. The site for the proposed institution has been donated to the foundation by John Bruckman, in addition to which \$60,000 has thus far been donated.

New Officers.—At the annual meeting of the San Diego County Medical Society, held December 9, Dr. Lyell C. Kinney was elected president; Dr. J. Perry Lewis, vice president; Dr. George B. Worthington, secretary, and Dr. Mott H. Arnold, secretary-treasurer, all of San Diego.—Sonoma County Medical Society at its annual meeting, held at Petaluma, December 11, elected Dr. Fred O. Butler, Eldridge, president; Dr. William C. Shipley, Cloverdale, vice president; Dr. Nils R. H. Juell, Santa Rosa, secretary, and Dr. Reuben M. Bonar, Santa Rosa, treasurer.

Lecture on Psychology and Health.—Prof. George M. Stratton of the University of California is giving a series of lectures during January and February on psychology and health. The lectures are being given in Emanu-El Auditorium, 1337 Sutter Street, San Francisco, on successive Friday evenings, beginning, January 9. The lectures will deal with the modern aspects of the relation of psychology and the principles of health and practice of medicine, with diseases of the mind, insanity, hypnotism, and with multiple topics on personality and other subjects. They will be scientific in essence, but will not be technical in character.

Personal.—Dr. Eugene A. Hensel, San Diego, is under treatment in St. Joseph's Hospital.—Dr. Henry P. Newman, San Diego, who has been ill for several weeks, has recovered.—Dr. Paul W. Newcomer, Pomona, has been elected president of the Pomona Valley Medical Association, and Dr. William H. Eaton, Pomona, secretary.—Dr. Henry G.

Brainerd, Los Angeles, has been elected president of the Psychological Association of California.—Neal Naramore Wood, Major, M. C., U. S. Army, has been appointed first assistant superintendent of charities and medical director for the department of charities of the county of Los Angeles.

DISTRICT OF COLUMBIA

New Building for Society.—It is announced that during the next few weeks ground will be broken on a lot which has been purchased on M Street near Connecticut Avenue for the new building for the Medical Society of the District of Columbia.

Personal.—Dr. J. Ward Mankin, resident surgeon of Emergency Hospital, Washington, for two years, has resigned.—Dr. John F. Rooney, United States Public Health Service, was shot three times by a former soldier and patient at Providence Hospital. Although the wounds are serious, Dr. Rooney is expected to recover.

New Officers.—The Medical Society of the District of Columbia, at its meeting, December 4, elected the following officers: president, Dr. Francis R. Hagner; vice presidents, Drs. Virgil B. Jackson and A. Frances Foye; recording secretary, Dr. Henry C. Macatee; corresponding secretary, Dr. J. Russell Verbryke, Jr., and treasurer, Dr. Edward G. Leibert.

GEORGIA

New Officers of Medical Board.—At the annual meeting of the state board of medical examiners, Dr. Jarrett W. Palmer, Ailey, was reelected president; Dr. Alfred F. White, Marietta, vice president, and Dr. Charles T. Nolan, Marietta, secretary-treasurer.

Personal.—The office of Dr. Amos C. Smith in the First National Bank Building, Elberton, has been destroyed by fire.—Dr. William E. Wood, Dalton, has been elected mayor in a hotly contested race with Dr. Jesse G. McAfee.—Dr. Taylor Lewis, Americus, sustained serious knife wounds of the abdomen and face in an affray recently.

Hospital Notes.—The Cheston King Sanitarium, Atlanta, has been secured by the United States Public Health Service which will use the institution as an emergency hospital and clearing house for soldiers, sailors, marines and civilian employees of the government, through which patients will be sent to the various public health hospitals in the Southeast.

ILLINOIS

Personal.—Dr. Charles B. Caldwell, assistant superintendent of the Peoria State Hospital, South Bartonville, has been appointed superintendent of the Lincoln State School and Colony, succeeding Dr. Thomas H. Leonard.—Dr. Bradley B. Reid of the University of Chicago was elected president of the National Council of the American Physical Education Association at its annual meeting in New York City, January 1.

MAINE

New Officers.—At the annual meeting of the Penobscot County Medical Society, held in Bangor, the following officers were elected: Dr. William E. Fellows, president; Dr. Travis B. Wood, vice president, and Dr. Harry D. McNeil, secretary-treasurer, all of Bangor.

New Hospital Wing Under Construction.—A new wing to the Augusta General Hospital is being built, and will be ready for occupancy in March. The new building will be three stories and a basement in height, of steel and tile construction, 96 feet long and 40 feet wide, and will have three operating rooms on the third floor.

MARYLAND

Accident to University President.—Dr. Frank J. Goodnow, president of Johns Hopkins University, who suffered a fracture of the leg, January 11, is reported to be resting comfortably.

Whisky to Hospitals.—Every hospital and charitable institution in Baltimore will be given a generous quantity of whisky by Mrs. William Lanahan, owner of the wholesale liquor house of William Lanahan & Sons, who has announced that the entire stock in the warehouse will be distributed among hospitals and institutions.

Vaughan on Sanitation.—At a lecture before the members of the Johns Hopkins University School of Hygiene and Public Health, Dr. Victor C. Vaughan, professor of hygiene

and physiologic chemistry at the University of Michigan, Ann Arbor, spoke at length on the influenza epidemic of 1918 and sanitation, expressing the belief that the limit of modern sanitation had been reached.

In Memory of Dr. Osler.—A joint meeting of the Medical and Chirurgical Faculty and the Book and Journal Club of the faculty was held at Osler Hall, January 13. This meeting was called in memory of the late Sir William Osler, and addresses were made by Dr. Lewellys F. Barker, Dr. Harry Friedenwald, Dr. John Ruhräh, all of Baltimore, and Dr. Francis R. Packard, Philadelphia.

Personal.—Dr. Robert H. Riley, Cumberland, has been appointed to the state board of health as chief of the bureau of communicable diseases of the state department of health. Dr. Riley was formerly chief bacteriologist of the health department of Oklahoma, and his affiliation with the local health department came as a result of a trip he made here to study public health administration methods.

Pathological Building Burns.—The Pathological Building of the Johns Hopkins Hospital group, the professional workshop of Dr. William H. Welch, was wrecked by fire, January 12. It is said that none of the valuable specimens was lost, nor were any of the records of research work damaged. The fire necessitated the removal of twenty colored women patients from Ward O, but the patients in the maternity ward remained in their beds. Great credit is to be given to the nurses and physicians for their presence of mind in this emergency.

War on Social Evil.—To carry on active warfare against social evils and diseases, the Maryland Social Hygiene Society has opened headquarters in the Hoen Building, Baltimore. Dr. Hugh H. Young, Baltimore, has been elected president of the society and the other officers and the board of directors include many of the leading men of Baltimore. Legislation, law enforcement, thorough investigation of existing conditions, protective measures, urging the proper disposition of offenders by means of probation, commitment to institutions or custodial care, recreation, education and medical attention are among the activities planned by the organization. The association, which is the fusion of all the unofficial organizations of the state which have been combating social disease, will act as a clearing house in diffusing knowledge on social health and in conducting vigorous attacks on vice.

Raid on "Associated Doctors."—Through an exposé in the *Evening Sun*, the offices of the "Associated Doctors" which were raided by detectives and all paraphernalia used by them, including the widely advertised intravenous injection outfit and the fluoroscope and roentgen-ray apparatus, found to be imitations, were sent to detective headquarters. J. Newbold Kirk and G. G. Payne escaped arrest only because they had left the city, following the exposé in the newspaper. The attention of the police board was directed to the "Associated Doctors" by Dr. Herbert Harlan, Baltimore, president of the state board of medical examiners. Subsequent investigation showed that most of the work in the office was done by a registered physician, after an extensive door-to-door advertising campaign had been made. It is intimated at police headquarters that criminal action will be brought against the "Associated Doctors."

New Hospital Opposed.—Protests have been issued by persons interested in the South Baltimore General Hospital to the people of South Baltimore, Brooklyn, and Curtis Bay against the establishment of a competing hospital in the section from which the South Baltimore General Hospital draws its patronage. The protestants set forth that to care for the medical and surgical cases developing in the industrial district of South Baltimore, Brooklyn and Curtis Bay, the South Baltimore Eye and Ear Hospital was reorganized as the South Baltimore General Hospital and was thoroughly equipped to care for all kinds of injuries and diseases, supplied with a staff of trained physicians and nurses and is prepared to give this industrial district every possible advantage of modern hospital service. If the patronage of this territory is divided and the field occupied by a competing institution, it is apparent that instead of one institution being an assured success and constantly improving, two institutions could barely keep their heads above water.

Southern Sociological Congress.—The Southern Sociological Congress, which has headquarters in Washington, D. C., held its annual conference at the Medical and Chirurgical Faculty Building, Baltimore, January 6 and 7. The program for the opening session included as speakers Henry E. Jackson of the United States Bureau of Education and

Congressman S. D. Fess of Ohio; the subject under discussion was American citizenship. Judge Joseph A. McCulloch presided at the conference. Three sessions were held on January 7, and these were followed by a dinner at the City Club. The aim of the congress is to promote health, justice, patriotism, and training for citizenship, and to teach the sacredness of law both as to person and property, as well as to foster loyalty to home, church and government. It also aims to unite the religious, educational, civic and industrial factors of the South in a general movement to promote the welfare and conservation of human life. Its plan has been to accomplish the coordination of church and school so that the greatest benefit may be derived from both.

MASSACHUSETTS

Physician Decorated.—Dr. Charles S. Butler, Boston, has received from the French government the Cross of the Legion of Honor in recognition of his service to wounded French soldiers.

New Hospital.—A new building is to be erected for the Baptist Hospital, Boston, at a cost of about \$500,000. The funds for the new building came from the estate of Mrs. Samuel N. Brown.

Personal.—Dr. Irwin H. Neff, formerly superintendent of the Foxboro State Hospital and for the past five years superintendent of the Norfolk State Hospital, Boston, has been made head of the Oak Grove Hospital, Flint, Mich.

Society Offers Reward.—The Essex South District Medical Society, December 27, offered a reward of \$1,000 for information leading to the arrest and conviction of the person or persons who assaulted Dr. Hamlin P. Bennett, Lynn, December 24.

Banquet to Cabot.—The trustees of the New England Baptist Hospital gave a farewell banquet at the Hotel Vendome, Boston, January 3, to Dr. Hugh Cabot, head of the surgical staff of the Baptist Hospital for twenty years, who had accepted the post of head professor of surgery in the University of Michigan, Ann Arbor. Tributes to Dr. Cabot were paid by Col. Edward H. Hackett, Dr. George S. C. Badger, Boston, and Walter I. Badger, Albert H. Curtis, and others.

Honor to Sargent.—In recognition of his fifty years of continuous service in the physical training field, a banquet was given by the Sargent School Alumni Association to Dr. Sargent at the Hotel Vendome, Boston, December 27, at which many prominent educators, including Dr. Charles W. Eliot, professor emeritus of Harvard University, gave testimony that the untiring efforts of Dr. Sargent had resulted in making educational leaders throughout the world realize the value of physical education for children and college students. At the close of the evening a testimonial volume containing articles written in eulogy of his work was given Dr. Sargent.

Committee on Public Health.—This committee of the Massachusetts Medical Society has recently initiated several important movements in promoting the activities in the interest of which it was created. In addition to furnishing to the county medical societies speakers on subjects of preventive medicine, hygiene and public health, it has each year conducted a convocation on public health in which it has secured the cooperation of the United States Public Health Service, the Massachusetts State Department of Health, and the Massachusetts Association of Boards of Health. Two of these health convocations have been held in Boston, and recently a third was held at Springfield. The program for the Springfield convocation shows a wide range of subjects, including the state health program, personal and school hygiene, industrial hygiene, diet, special disease problems, and sanitation. The registration at these meetings has averaged about 225 people from over fifty cities and towns. These conferences have been attended not only by physicians, but also by health officials, public health nurses, and others professionally interested in public health. This committee consists of Dr. Enos H. Bigelow, chairman; Dr. Annie Lee Hamilton, secretary, and Drs. Edmond F. Cody, Victor Safford and Roger J. Lee.

NEW YORK

Personal.—Dr. Edward F. Brush has retired from office after serving eight terms as mayor of Mount Vernon.—Dr. Edward W. Mulligan, Rochester, was chosen director of reorganized Base Hospital No. 19, December 15.

New Officers.—At the annual meeting of the Monroe County Medical Society held in Rochester, December 16, Dr. Emory W. Ruggles was elected president; Dr. George H. Gage,

vice president; Dr. Benedict J. Duffy, secretary, and Dr. Irving E. Harris, treasurer, all of Rochester.

State Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held in New York City, March 23 to 25. The house of delegates will meet at the New York Academy of Medicine, 17 West Forty-Third Street, March 22. The scientific sessions will be held on the second floor of the Waldorf-Astoria, and the third floor of the Hotel McAlpin. A section on neurology and psychiatry will be inaugurated on March 23. There will be an open meeting of the society at the Hotel Pennsylvania, March 23, which will be followed by the president's reception. The annual banquet will be given, March 24, in the ballroom of the Waldorf-Astoria.

Governor Smith Advocates Public Health Centers and Industrial Insurance.—Governor Smith, in his annual address to the legislature, recommends liberal provision for the department of health and redistricting the state so that each community can support a proper health administration. He expresses the view that the time has come when there should be some plan of reorganization within the counties themselves under the supervision of the state authorities. He urges the establishment throughout the state of an adequate system of public health centers, in conjunction with local health activities, where the necessary public health supervision can be provided for all classes of the population. He believes the state should subsidize local health efforts and thus bring about a coordination of public and private health facilities so that every health center could command the services of a full-time health officer and the necessary public health nurses. He reiterates his belief in the principle of compulsory health insurance for industrial workers. He says that legislation carrying this principle into execution can be so drawn as to safeguard the interests of the medical profession.

New York City

Harvey Society Lecture.—The sixth lecture of the Harvey Society Series will be delivered, January 24, by Dr. Carl Voegtlin, professor of pharmacology, United States Public Health Service, on "Recent Work in Pellagra."

New York's Banner Health Year.—Dr. Royal S. Copeland, Health Commissioner, announces that the death rate for 1919 is the lowest recorded in the fifty-three years that the Health Department has been organized. The death rate for the year 1919 was 12.39 per 1,000 population, as compared with a rate of 16.71 for 1918, and 13.94 for the five-year period from 1913 to 1917, inclusive.

Personal.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research was elected an associate member of the Société de pathologie exotique, December 10; of the Société royale des sciences médicales et naturelles, December 1; and of the Société belge de biologie, December 6; and was also made a corresponding member of the Bataafsch Genootschap der Proefondervindelijke Wijsbegeerte, of Rotterdam, December 22.—Dr. Phoebus A. Levene of the Rockefeller Institute for Medical Research was elected an associate member of the Société royale des sciences médicales et naturelles, Brussels, December 1.—Dr. Joshua H. Leiner has been appointed adjunct attending neurologist to Lebanon Hospital.

Scabies in New York.—The health department reports that in certain parts of the city there has been a slight increase in the prevalence of scabies. Investigation shows that in a number of families in which cases have been found there have been returning soldiers and it is thought that this may account for the infection. The average number of cases reported for the year 1918 is much lower than for the preceding five years, while the total for the first three quarters of 1919 is within 194 cases of the total for 1918. The reports of all cases of scabies among schoolchildren are being carefully verified, and home visits are made by the school nurses for the purpose of ascertaining conditions and giving advice. Patients with scabies not under effective medical treatment are excluded from school.

Health Department Regulates Heating of Buildings.—At a meeting of the board of health, in December, 1919, Section 225 of the Sanitary Code was amended so that it shall be the duty of every person who has contracted or undertaken to furnish heat for any building or portion thereof, occupied as a home or place of residence of one or more people, or as a place of business, to furnish heat for every occupied room in such building so that a minimum temperature of 68 F. may be maintained therein at all times between the hours of 6 a. m. and 10 p. m. In the absence of a contract the owner, agent or lessee is deemed to have contracted or

ound himself or herself to furnish heat in accordance with the provisions of this section.

Association for the Prevention and Relief of Heart Disease.—This organization, recently installed in its new headquarters at 325 East Fifty-Seventh Street, is engaged in furthering the establishment of dispensary classes in many of the city hospitals for workmen with crippled hearts. It also seeks the opening of more convalescent homes for patients with the milder types of heart disease and the founding of institutions for the continued care of permanent invalids from the same cause. The association has recently issued a pamphlet showing that there were, according to the statistics of the health department, 10,682 deaths from heart disease in this city in one year, while during the same period tuberculosis in all its forms caused 9,622 deaths and cancer 4,702. This serves to call attention to the importance of heart disease as a cause of disability and death. The pamphlet states further that not less than 25,000 schoolchildren in this city have permanently damaged hearts. The association is endeavoring to disseminate in popular form some of the facts with reference to heart disease and the need of treatment as has been done in regard to tuberculosis.

NORTH CAROLINA

Personal.—Dr. Sylvester Utter, Crab Creek, is reported to be in a critical condition at the Patton Memorial Hospital, Hendersonville, as the result of a gunshot wound accidentally received while hunting.

Malaria in Goldsboro.—A recent survey has shown that approximately 25 per cent. of the population of Goldsboro is suffering from malaria in some form, and the city with the assistance of the state and federal health authorities is beginning an antimalarial campaign.

OHIO

Trachoma Surveys.—The schools of Hamilton are being surveyed for trachoma. When the schools closed for the Christmas holidays, about 3,900 pupils had been examined and 4 cases of trachoma had been found. When the survey is completed a clinic will be held by the U. S. Public Health Service and the state department of health. The survey of schoolchildren of Ross County for trachoma has been completed. The work was done by Dr. Rose Hopkins, assistant epidemiologist, state department of health, in cooperation with the local chapter of the Red Cross. Arrangements are now being made for a trachoma clinic to be held in Chillicothe some time in January.

Personal.—Dr. William G. List, Cincinnati, assistant superintendent of the Cincinnati General Hospital, has been appointed superintendent of the Minneapolis City Hospital, succeeding Dr. Herbert O. Collins, resigned. Drs. James Parker and Carl R. Knoble have been made members of the Sandusky board of education. Dr. John E. Mongor, Columbus, state registrar of vital statistics for four years, has resigned and has been succeeded by Dr. Ulysses G. Arrell, Wilmington. Dr. Willard C. Rank, Newark, who has been ill with septicemia in Mount Carmel Hospital, is reported to be convalescent. Dr. William R. Keller, Dover, has been elected commander of the Dover Post, No. 205, American Legion.

Legislature Amends Hughes Health Act.—The same legislature which adopted the Hughes act during the first part of its 1919 session has reconsidered its action and replaced it by the Griswold bill, which has now passed both houses and awaits the signature of the governor to become a law. The Supreme Court of Ohio, in a decision affecting another case, decided that the cities of Ohio could not be classified for purposes of legislation. This decision rendered it necessary to amend the Hughes act, as it classified cities as over 25,000 population. The legislature further amended it by removing the civil service provisions, by providing for full or part time health commissioners, and by making the employment of nurses optional. Under the provisions of the new bill, cities may employ any one as a health officer, but in general health districts the health commissioner must be a licensed physician. The bill still permits counties and cities to have real health organizations and to do effective health work, and is a considerable advance over the old township and village law. The opposition to the Hughes act came largely from the rural districts and was based on the expense of the new system. Two hundred and seventy-six delegates from twenty-five states took the state civil service examination for district health commissioners under the

Hughes act. Candidates were just about to be called to Columbus for a personal interview when the examination was called off on account of the action of the legislature.

PENNSYLVANIA

Tuberculosis Home Opened.—The Hackett Home, the new building for tuberculous women at Norristown State Hospital, was dedicated, January 7. This building, containing wards, private rooms, special observation rooms and sun parlors, was erected at a cost of \$15,000. Dr. Jessie M. Peterson, Norristown, is in charge and under her is a staff of thirty nurses. The building will accommodate about 200 patients.

Personal.—Dr. Claude P. Brown, Ambler, Major, M. C., U. S. Army, has been made commander of Post 125, American Legion, Ambler. Dr. Albert H. Wilkinson, Wilkes-Barre, has been elected medical superintendent of the Roper Hospital, Charleston. Dr. Samuel B. Horning, Coolegeville, has announced his retirement from the practice of medicine, and will spend the rest of the winter in Florida. Dr. Joseph Scattergood has been appointed local surgeon of the Pennsylvania system at West Chester, succeeding Dr. Percy C. Hoskins, deceased.

Philadelphia

Food Demonstration at Dietetic Center.—January 6, the dietetic center connected with the Jefferson chest department for nurses and social workers held an open demonstration of cooking and nutritious foods for mothers of the district.

Health Department Advisory Group Named.—Director Clinton L. Furbush of public health and charities, January 9, announced the appointment of a general advisory council for the department of health, and named eight committees, composed of prominent men and women of the city, to act as auxiliaries to the regularly employed officials of the department.

New Officers.—Physicians' Motor Club of Philadelphia: president, Dr. S. Leon Gans; vice presidents, Drs. John J. Robrecht, Charles R. Haig, Jr., and J. Torrance Rugh; secretary, Dr. Howard A. Sutton, and treasurer, Dr. Lewis H. Adler, Jr. Philadelphia Association of Industrial Medicine: president, Dr. Mervyn Ross Taylor; vice president, Dr. Lorne E. Hastings; secretary, Harry M. Gay, Camden, N. J., and treasurer, Dr. Robert Perry Cummins. West Philadelphia Medical Association: president, Dr. Henry B. Kobler; vice president, Dr. D. Clinton Guthrie; secretary, Dr. Henry G. Munson, and treasurer, Dr. Edmund L. Graf. Northern Medical Association: president, Dr. Mulford K. Fisher; vice president, Dr. James H. McKee; secretary, Dr. Robert Boyer, and treasurer, Dr. John W. Millick. West Branch Medical Society: chairman, Dr. Collin Foulkrod; vice chairman, Dr. D. Randall MacCarroll, and clerk, Dr. Ralph Getelman.

SOUTH CAROLINA

Work Against Trachoma.—Dr. Joseph L. Goodwyn, United States Public Health Service, has commenced his work in Lexington, and has already operated on and treated about fifty patients with trachoma.

Medical Society Meeting.—The annual meeting of the Charleston County Medical Society was held in Charleston, December 8, and the following officers were elected: president, Dr. Robert Wilson, Jr.; secretary, Dr. George F. Heidt, and treasurer, Joseph H. Cannon, all of Charleston.

Faculty Changes.—Dr. John Van de Erve, Milwaukee, has been elected professor of physiology in the Medical College of the State of South Carolina. Dr. Lane Mullally, who resigned as professor of obstetrics on account of ill health, has been elected emeritus professor of obstetrics and has been succeeded by Dr. G. Fraser Wilson. Dr. John F. Townsend, Charleston, has been elected assistant professor of ophthalmology and otology. Dr. Julius C. Sosnowski, Edward H. Sparkman, Jr., and Joseph S. Rhame, Jr., have been elected assistant professors of surgery.

VIRGINIA

Preventable Disease Commission Named.—Governor Davis has announced the appointment of Drs. N. Thomas Ennett and A. Murat Willis, Richmond; J. Hoge Ricks, Richmond; Lindsay Gordan, Louisa, and A. F. Thomas, Lynchburg, as members of the division of preventable disease authorized by the last session of the general assembly.

Hospital Items.—Buxton Hospital is building a new nurses' home, which it hopes to have completed by about

April 1, 1920.—A budget of \$350,000 has been submitted to the governor by the Hospital College of Medicine of Virginia. This includes the funds necessary to complete and equip the new negro hospital and the Dooley Hospital for contagious diseases and to maintain the three hospitals for one year.—Plans have been filed for an addition to the Stuart Circle Hospital, Richmond, to cost \$132,000. The new addition will be six stories in height and of fireproof construction.

Personal.—Dr. W. F. Rudd of the department of chemistry of the Medical College of Virginia, Richmond, has been elected president of the American Conference of Pharmaceutical Faculties.—Dr. Herbert Mann, Richmond, has been elected surgeon of the Virginia Penitentiary for a third term of four years.—Dr. John H. Crum, Louisa, has been placed in charge of the local station of the United States Public Health Service.—Dr. Howard Armstrong, Edom, has been elected city health officer of Harrisonburg.—Dr. Elisha L. McGill, Petersburg, has been appointed coroner of Dinwiddie County, succeeding Dr. William H. Crockford, Jr., deceased.

New Officers.—Lynchburg and Campbell County Medical Society, at its annual meeting in Lynchburg, December 21, elected Dr. John W. Carroll, president; Dr. Bernard H. Kyle, vice president, and Dr. Edward F. Younger, secretary-treasurer.—At the annual meeting of the medical faculty of Petersburg, the following officers were elected: president, Dr. Edwin J. Nixon; vice presidents, Drs. Fletcher J. Wright, Petersburg, and George Reese; secretary-treasurer, Dr. John M. Harwood, Richmond, and corresponding secretary, Dr. William C. Powell, Petersburg.—Prince George County Medical Association, at its annual meeting held in Hopewell, elected Dr. William D. Daniel, Disputanta, president.—At the annual meeting of the Richmond Academy of Medicine and Surgery, the following officers were elected: president, Dr. J. Garnett Nelson; vice presidents, Drs. Ramon D. Garcin, George C. Woodson, and William B. Porter; secretary, Dr. Mark W. Peyser (reelected); assistant secretary, Dr. Emmett H. Terrell (reelected), and Dr. Howard Urbach, treasurer (reelected), all of Richmond.

CANADA

New Montreal Hospital.—A bill has been introduced into the Quebec legislature for the incorporation of the St. Mary's Memorial Hospital in Montreal. The institution is intended to make up for the shortage of hospital accommodation in that city.

Public Health Statistics.—There were almost 2,000 fewer deaths from communicable diseases in Ontario in 1919 than in 1918. The great falling off is due to the absence of the influenza and pneumonia scourge which swept the province in the latter part of 1918. There were more tuberculosis fatalities in 1919, the total number being 1,722 as against 1,359 in 1918.

Public Health at Ottawa.—The public health department of the Canadian Conservation Commission at Ottawa has been placed under the new federal department of health. Dr. Charles A. Hodgetts, Ottawa, who has been for many years medical adviser to the conservation commission, takes office in the new department and is given charge of statistics, information, publication, library and circulation.

Smallpox.—The total number of smallpox cases in Toronto at the present time, January 8, is 449, eighteen new cases occurring a day. The epidemic seems to be declining. Altogether there have been about 2,000 cases.—The Provincial Board of Health of Ontario will take no further action toward compulsory vaccination in Toronto. The board recently applied to the court of appeal to compel the city to order general compulsory vaccination, but the order was refused by the judges, who stated the Ontario Vaccination Act had not been properly drawn.—Certificates of vaccination are no longer satisfactory to United States border authorities for Canadians entering that country. It must be shown that the operation has been successful.—The entire province of Quebec is now in a state of quarantine against Ontario. Even residents of Quebec who visit in Ontario will not be allowed to reenter their own province unless provided with a vaccination certificate.

GENERAL

Proctologists to Meet.—The American Proctological Society will hold its annual meeting in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia.

Bill for Marine Hospital in California.—Julius Kahn of California has introduced a bill appropriating \$600,000 for the erection of a marine hospital on the present marine hospital site at San Francisco and to remove the present structure.

Child Labor Day.—The National Child Labor Committee announces that child labor day will be observed by churches on January 25, by synagogues, January 24, and by schools and clubs, January 26. On these days, the needs of children are to be discussed, viewing the subject in the higher moral aspects and urging the furtherance of child welfare activities.

Medical Men Needed for Overseas Service.—Brig.-Gen. Robert E. Noble, M. C., U. S. Army, makes an appeal for fifty medical men for Red Cross service overseas, for a period of at least one year. Practitioners are desired who have had military experience. The salary will be that of their previous rank in the military service with the 10 per cent. addition for overseas service and a liberal commutation allowance.

Joint Resolution for Control of Malaria.—Senator Harris of Georgia has introduced a joint resolution "to enable the Public Health Service to cooperate with states in the investigation and control of malaria." It provides for carrying on measures for the control of malaria through the respective state boards of health and the Federal Public Health Service. Five hundred thousand dollars were appropriated for the work, but no expenditures are to be made in any state until an equal sum shall have been appropriated by the legislature of a state or county or by individual contribution for malaria control work.

Committee on Industrial Dermatoses.—The National Safety Council, 168 North Michigan Avenue, Chicago, through a special committee is undertaking a survey of the relation of occupational factors to the production of skin diseases. The committee has issued a questionnaire designed to elicit information regarding the prevalence and distribution of industrial dermatoses, including any abnormalities of the skin or appendages that result from special manufacturing processes. The council proposes to compile the data, and to act as a clearing house for information on methods of control and treatment of industrial skin diseases.

Specialists Convene.—The Federation of Societies for Experimental Biology held its annual meeting in Cincinnati, December 29 to 31. This meeting would have been held in Toronto but for the smallpox quarantine. This federation includes the American Physiological Society, the American Bio-Chemical Society, the American Society of Pharmacologists, and the Society for Experimental Pathology. At the closing session of the American Bio-Chemical Society, Dr. Stanley J. Benedict, Ithaca, N. Y., was elected president; Dr. Victor C. Meyers, secretary, and Howard Bradley of the University of Wisconsin, Madison, treasurer.—Dr. William H. Park, New York City, was elected president of the Society for Experimental Pathology; Dr. Warren P. Lombard of the University of Michigan, Ann Arbor, president of the American Physiological Society, and Dr. Arthur S. Loevenhart, Madison, retiring president of the federation. president of the American Pharmacologists' Society.

Different Types of Botulism.—The department of animal husbandry of the University of Illinois for some years has been particularly interested in the subject of botulism and has made a serum for combating the disease. Specimens of the olives that were responsible for the outbreak of botulism in Detroit were sent to the department, which has reached the conclusion that this outbreak was due to a different strain of *Bacillus botulinus* than that heretofore isolated from contaminated food of animal or man. We have received the following statement on the subject from the university:

The Animal Husbandry Department of the University of Illinois in studying a disease of animals commonly called forage poison, has apparently brought out the close relation of this disease to botulism in man. Experimental serum developed for the prevention of the disease in horses and mules has, in addition to veterinary use, been furnished on request to physicians for emergency treatment of botulism in man. In the light of our present knowledge, the immune serum to be effective, must possess the highest degree of potency and should be used before symptoms appear or in the early stages of the disease.

A bacteriologic examination at the university of poisonous olives recently implicated as the causative factor of the fatal food poisoning recognized as botulism in Detroit, has disclosed the fact that the strain of *Bacillus botulinus* encountered in the olives is a different and probably distinct type than heretofore isolated from contaminated food of animal or man, in our experience. This information is highly important to the veterinary and medical profession, in view of the more frequent recognition of this disease in recent years. In preliminary studies of botulism in animals, more frequently designated as forage

poisoning, all outbreaks studied to date occurring in the Mississippi valley proved to be associated with a common strain of *B. botulinus*, in view of tests recently conducted, it appears that more than one type of this disease may prevail.

It is obvious that if more than one type of poisonous micro-organisms the botulinus type produce distinct and separate varieties of poisoning, antitoxin need be prepared against each disease producing strain if a consistent and high degree of efficiency is to be attained prophylactic treatment. It is also reasonable to presume that the favorable results recorded in the laboratory may be gradually applied to natural outbreaks of this disease in animals, with a fair degree of success and bid fair to curtail the tragedy of botulism in man.

FOREIGN

Prize Awarded to Escomel.—Among the prizes distributed by the Paris Académie de Médecine at its recent annual publication meeting was one to Dr. E. Escomel of Arequipa, Peru. The Monbigne prize of 1,500 francs was divided between him and H. Velu of Casablanca.

Physicians as Aldermen.—The *Journal de médecine* of Bordeaux relates that the recent local elections resulted in our physicians being elected to the *Conseil municipal*, Professors Arnoz and Sigalas, the latter the dean of the university; Moure, the ear and throat specialist, and Lamarque.

Deaths in the Profession Abroad.—Dr. D. Bocciardo, professor in pathology at the University of Genoa, serving at the front during the war as radiologist, aged 44.—Dr. Rainaldi of Narni, Italy, author of works on neuro-pathology and forensic medicine, aged 63.—Dr. A. Werner, professor of chemistry at the University of Zurich, recipient of the Nobel prize in chemistry in 1913.

The Crisis in the Medical Journals.—Under this heading the *Policlinico* of Rome, the leading medical journal of Italy, comments on the lack of appreciation of the scientific press on the part of the authorities. They make no efforts to smooth the rocky path for the medical journals. In France, conditions are the same; a recent editorial in one was entitled "agonie des journaux scientifiques." The *Policlinico* states, "the daily press in Italy is allowed to buy paper at reduced rates and various other concessions are accorded the lay press, while the medical journals—which aided so materially in the winning of the war and in the maintaining of the public health at all times by the prompt dissemination of every progress in treating the sick and wounded and in preventive medicine—the medical press is allowed to be crushed by the high prices of paper and labor." The *Policlinico* compares with this disregard of the scientific press the opposite system in Germany, the privileges granted the leading medical journals in Germany. "During the war and since the war they have been able to get their paper much as usual at reduced rates and their subsidies from the state have not been allowed to lapse. . . . And we victorious Latins showing ourselves more barbarian than the barbarians!" The few "Zeitschriften" and "Archivs" that have reached America, published in 1918 and 1919, have the same paper, the same typographical appearance and the same size as the numbers issued before the war. The weeklies also compare favorably with the before-the-war issues except that the paper is of a slightly poorer grade.

LATIN AMERICA

Personal.—Dr. M. J. Wunderlich, Guatemala City, is now visiting in this country with his family.

Prophylactic Institute in Paraguay.—Under the direction of Victor Idoyaga a prophylactic institute has been organized recently in La Asunción.

Pasteur Institute in Nicaragua.—Recently a Pasteur Institute has been inaugurated at Managua, Nicaragua, presented to that country by the president of Mexico. The institute has therefore been named Instituto Antirábico Carranza.

New Sanitary Regulations in Santo Domingo.—A recent amendment to the sanitary code of Santo Domingo divides the towns for sanitary purposes into four groups according to their population: namely, of less than 1,000 inhabitants; from 1,000 to 5,000; from 5,000 to 10,000, and over 10,000.

Public Health Association in Colombia.—There has been organized at Bogotá an association under the name Sociedad Sanitaria de Bogotá, which will have for its purpose the cleaning of the city in order to eradicate all infectious diseases having for their cause impure water supplies and personal uncleanness.

Congress of Practitioners.—The Sociedade de Medicina e Cirurgia of Rio de Janeiro has taken the initiative in organizing a Congresso dos Medicos Praticos to be held in con-

nection with the Pan-American Medical Congress on the occasion of the celebration of the centenary of the independence of Brazil. The Practitioners' Congress will have five sections: public hospitals and other charities; public health and preventive medicine; social medicine; practice of the profession, and medical education. The *Brazil-Medico* gives the five to ten different topics appointed for discussion in these five sections. Among the topics to be discussed in the section on medical education are the limitation of the number of medical students; national graduate courses, and study trips to other lands. This section is in charge of Prof. Miguel Couto.

Government Services

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CONNECTICUT	NEW YORK
New Haven—Rapoport, F. H.	Brooklyn—Gastineau, F. M.
INDIANA	New York—Jablons, A.
Vevay—Shadday, A. A.	Klapper, H.
MICHIGAN	PENNSYLVANIA
Detroit—Van Volkenburgh, V. A.	Nesquehoning—Griffith, R. S.
OHIO	Philadelphia—McGlinn, J. A.
Dover—Shaweker, M.	WASHINGTON
	Seattle—Cole, T. O.

Personnel of the Medical Corps

For the week ending January 9, the Medical Corps contained 2,153 medical officers; the Medical Reserve Corps contained 4,348 officers, an increase of 99 over the previous week.

Legislation in Interest of Reserve Officers

A bill has been introduced by Congressman S. R. Sells of Tennessee which provides that allowances of officers in the Medical Reserve Corps of the Army shall be computed in accordance with the time served by them as contract surgeons. This bill would give longevity pay allowances as contract surgeons in addition to the time they are in the regular service.

New Legislation for Army Medical Corps

January 9, Senator Wadsworth of New York, chairman of the Committee on Military Affairs, introduced the Army reorganization bill in the Senate. Section 33 of this bill relates to the medical service of the Army, and will create a large number of vacancies in the Medical Corps in the grades of major, lieutenant-colonel and colonel. This is due to the fact that the bill fixes certain age limits in promoting medical officers now in the Army, and few present officers can qualify. For instance, this section provides that "commissioned officers shall be promoted to the grade of captain on completion of three years' service: major fourteen years, lieutenant-colonel, twenty and colonel twenty-six years' service." Vacancies thus created will be filled by appointment, on due examination, from "persons under the age of 50 years who shall have served as officers in the Medical, Dental or Veterinary Corps in the U. S. Army between April 6, 1917 and Nov. 11, 1918." The Wadsworth bill also contains a provision for commissioning the Army Nurse Corps. The bill substantially adopts the so-called Riker-Jones bill, which has been before Congress for several months, and will make Army nurses commissioned officers. Nurses who act as superintendents will have the relative rank of major; assistant superintendents, directors and assistant directors, the relative rank of captain; chief nurses, the relative rank of first lieutenant, and nurses the relative rank of second lieutenant. Nurses will wear insignia to indicate their rank as may be prescribed by Army regulations. The Wadsworth bill will become the committee bill because Senator Wadsworth is chairman of the Committee on Military Affairs, and it is quite likely that this bill will be the basis of all military legislation at the present Congress. The bill contains provision for a system of universal military training for youths between 18 and 21, the recognition of the National Guard of the United States in each state and the maintenance of the Reserve Officers' Training Corps.

Foreign Correspondence

LONDON

Dec. 17, 1919.

The Number of New Practitioners Registered

At the General Medical Council, the president, Sir Donald Macalister, delivered an address in which he stated that two years ago he predicted that in 1919 the number of new physicians registered would be far below the average. The registrations to date proved the truth of his prophecy, although some compensation had been afforded by the addition of 400 British practitioners to the colonial list of the register. The province of Alberta in Canada had now legislated in favor of medical reciprocity with the United Kingdom. Only one province of the Dominions, British Columbia, now remained outside the agreements concluded between the United Kingdom and the British Empire beyond the seas. The number of registered medical and dental students for 1919 are, as was also foreseen, greatly in excess of former records. They are filling the schools to overflowing. Some schools, indeed, have had to postpone all fresh admissions until next April. Apparently in a few years the professional ranks will be more than replenished. In some minds the expected influx is causing anxiety least the new practitioners may not all find employment when they reach the register. But the wastage of war has been great and the openings for skilled men and women would be multiplied by the increased activities of the new authorities concerned with the conservation of the health and physical welfare of the people. There would, in fact, be many new demands which no doubt would ultimately match the new supplies.

Representatives of the National Board of Medical Examiners of the United States recently visited this country with the object of studying and reporting on the methods employed here for the testing of candidates for medical qualification and for the control of their registration as practitioners. The registrar was instructed to place at their disposal the fullest information which the office possessed. By courtesy of the licensing bodies the representatives attended a number of the qualifying examinations. They stated that they derived much valuable knowledge from their visit. The influential movement toward the establishment of a high and uniform standard of professional qualification throughout the American commonwealth, of which the National Board of Medical Examiners is the expression, might have issues of importance extending beyond the United States.

Tribal Ties in Modern Nations

Prof. Arthur Keith delivered the Boyle lecture before the Junior Scientific Club at Oxford on this subject and threw a philosophical light on problems that have proved very thorny for the politicians. He said that the modern problems of race and nationality were due to the struggle between inherited tribal instincts and the conditions of existing civilization. We had broken up or were attempting to break up Nature's ancient tribal machinery, and were striving to replace her designs by others evolved in the minds of modern statesmen and politicians. The United States showed one of the most acute of the struggles that arise whenever races or nationalities came into close contact. Within the frontiers of the States was massed a population of 110 millions. More than 10 millions of these were marked off from the rest by a frontier, a color line, as sharply defined and jealously guarded as the frontiers of a kingdom. Across that racial frontier all legitimate social traffic was barred, the custodians of the frontier line being those who stood on the white side. Any attempt to cross produced mob war. While these 10 millions of segregated citizens abode within their racial fence they saw millions arise from Europe and pass freely through the national and social gateways which for them were barred. In the course of a generation they saw these new arrivals become slowly stripped of their alien outlook and gradually incorporated within a new national mass. In the States, then, a machinery was at work which maintained racial frontiers but broke down all national barriers. In Canada a mechanism was at work which converted immigrants of alien nationalities into loyal Canadians. But the artificial segregation of French Canadians in the province of Quebec might tend to turn a national differentiation into a racial differentiation. On the other hand, on the Pacific Coast there was a tendency to maintain a racial barrier against the Japanese and Chinese. In Spanish America a huge problem had arisen because,

while the Nordic race in North America had maintained its distinctness from Indian blood, in Mexico and South America an Iberian stock of European origin had blended with Indian blood. The Nordic European had preserved a feeling of race caste absent in the Iberian European, more closely akin to African races. A still more potent historical influence was that the Iberian immigrants had originally been male adventurers in whom the sex instinct overcame race instinct, whereas the Nordic immigrants had been of both sexes.

There were two processes of nationalization at work in Europe. All the great nationalities of Europe—France, Germany, Great Britain, Italy and Spain—had been built up by fusion. In these cases the process had been from above downward, from statesmen and rulers to the people. On the other hand, Nature's method was by disruption. The people of Norway and Sweden were of the same racial composition, and union would have given them strength. But a tribal feeling which swept through the people of Norway compelled a disruption. Ireland was another case in which the tribal instinct had flamed up, producing a desire for separation, which had no basis in race or interests. Force would be no response. All that a statesman could do was to provide conditions in which a favorable spirit was most likely to develop and mature.

LIÉGE

Nov. 30, 1919.

Belgian Surgical Congress

THE WILLEMS METHOD

It was appropriate that after five years of war the first meeting of the Belgian Surgical Society, observing the twenty-fifth anniversary of its foundation, should celebrate the most valuable acquisition that the surgery of the war has given us, namely, immediate active mobilization in joint lesions. The treatment that Willems introduced has brought fame to Belgian surgery, and at the present time the Willems method is accepted in principle by all surgeons of the Allies. At the meeting held September 27, Willems described the excellent results secured by his therapeutic method. The indications for this treatment have been extended, and it would seem now that the principle of immediate active mobilization should be applied in all joint lesions, whether simple or compound, and even in the septic complications of purulent arthritis. No doubt there are cases in which the method cannot be applied inflexibly, for instance, in extensive bone fractures, or in lesions of the extensor muscles that forcibly limit the use of voluntary mobilization on the part of the patient himself. However, even in such cases a slight attempt at voluntary movements, supplemented by passive mobilization, will render good service. At this meeting of the Belgian Surgical Society, Willems emphasized especially certain details in the application of the method and the necessity of prolonging the mobilizing treatment over a long period of time. Willems stated that very often the failures reported by certain writers after using his method are due to its incorrect application. Above all, mobilization must be immediate and active. These two conditions must be strictly carried out, and their observance requires a well trained hospital personnel. If proper precautions are taken, it would not seem that treatment by means of mobilization is contra-indicated in any joint lesion; for, even in extensive bone fractures, mobilization in the splint can be begun while at the same time the fracture is being reduced.

A distinction must be made between the elbow and the knee: In the case of the elbow, conservation of mobility; in the knee, of solidity, is the principal thing. In certain cases in which the knee has been kept mobile, it will occasionally be necessary to have recourse to an extra support in order to consolidate a joint that is badly shattered. Willems rejects all primary resections for the reason that they appear to him to rest on a premature decision; to his mind secondary resections are alone indicated.

While paying homage to M. Willems as the inventor of this method during the war, Delrez reported the results that he had secured by the use of the method; he also endeavored to point out the limits of its application. He is more conservative than the author of the method and as a rule refrains from applying it in case the joint wound is complicated by extensive damage to muscles, chiefly through fear of setting up an infection. Aside from this restriction, the treatment recommended by Delrez is identical with that of Willems. We shall not take up again the operative technique that is applicable in joint wounds or the indications for intervention, as these questions have already been discussed; but

Let us note especially in Delrez' report the restorative operations that he had occasion to perform on the war wounded. In wounds of the shoulder in case the deltoid has been severed transversely, causing a linear scar which prevents the elevation of the arm, relief may be secured secondarily by excision of the cicatricial tissue and suturing of the two muscle fragments. The member is kept in abduction for a certain length of time. Delrez referred to several cases of loose shoulder and elbow joints that were treated by suspension, the results of which were very encouraging; also transplant operations in the region of the knee; once of a condyle, another time of a patella, taken from the cadaver and preserved in alcohol.

SURGICAL TREATMENT IN POTT'S DISEASE

The second topic treated at the surgical congress is likewise of great importance. A lengthy discussion arose in regard to the therapeutic treatment of Pott's disease. The American authors recommend immobilization of the vertebral joints in the vicinity of the lesion either by arthrodesis of the arches of the vertebrae and transposition of the spinous processes (Hibbs) or by grafting pieces of bone into the spinous processes (Albee). The French authors (Calvé especially) are opposed to such intervention ordinarily and apply it only in cases of recovery from Pott's disease in order to give greater solidity and make the cure more definite. Calot is of the same opinion; in fact, he goes so far as to claim to be the originator of the Hibbs method, although he combats it.

Maffei has, since 1914, given treatment in fifty-three cases of Pott's disease, in nineteen of which the Albee method of operation was employed. He called special attention to the fact that in 1915 and 1916 the patients operated on recovered much more slowly and with greater difficulty, which he thinks is due to undernutrition consequent on the bad food conditions during the occupation. In seventeen cases a prompt cure was effected. He considers that the Albee operation is conservative, capable of immobilizing the lesions and therefore justified. However, its curative value in Pott's disease is negligible; the evolution of the disease continues.

Lorthioir, who also gave a report, agreed with Maffei that the operation of itself did not effect a cure. It is, he stated, a simple means of fixation which avoids the necessity of immobilizing the patient or of the wearing of a plaster cast or a corrective brace. This was the only consideration (a palliative and not a curative operation) that guided him in the cases in which he operated by the Albee method and used tibial or a costal graft. General statistics on the subject that he has gathered in regard to operative methods and to conservative methods lead him to the rather significant conclusion that the percentage of mortality in cases in which general operative methods were employed was 7.6, and in cases in which conservative methods were used, 7.7. From these facts, Lorthioir added, the conclusion may be reached that the operative method has only minimal influence on the mortality rate in Pott's disease, but that it does exert an influence on the duration of treatment, shortening it to an extent worth while, and also saving the patient the long torture of forced immobilization, either total or partial.

THORACOPULMONARY WOUNDS

The studies of thoracic wounds carried out by Derache and Janssen give a summary of the statistics of the war on the Belgian front. The anatomic study of wounds, the symptomatology, and the complications of pleuropulmonary traumas constitute the principal chapters of these two interesting reports. They take up especially the septic complications of hemothorax and the treatment of pyothorax. The port drain and irreversible drainage by Delagénière's valve are the two best means of draining a pyothorax. Pleural lavage is not often indicated. However, Depage and Joffier secured remarkable results by sterilization of the pleural cavity by means of interrupted irrigations of surgical solution of chlorinated soda (Dakin's solution), which allows early closure of the thorax.

The two essayists spoke highly of Pierre Duval, the great originator of war surgery of the lung. The clearer conceptions in regard to the relatively slight gravity of operative hemothorax opened up at once renewed activity in the whole domain of intrathoracic surgery. The extraction of intrapulmonary projectiles by means of a wide opening in the thorax has caused a revolution in pulmonary surgery that is very hopeful. The technic of this intervention has now been definitely determined. It remains to fix the operative indications. Janssen says in his report that many authors commend systematic intervention and that he feels more and more inclined to coincide with their views. Derache is

less decided; he thinks that many times shell fragments and bullets may be well tolerated. He believes that definite indications for this intervention should be present and that no absolute formula should be set up. The decision may well be left to the surgeon's clinical judgment. Furthermore, certain objective signs will furnish elements that will aid in reaching a decision, for example, repeated slight hemoptysis, sharp pains accompanied by dyspnea, pulmonary congestion, and formation of an abscess.

PARIS

Dec. 11, 1919.

Hospital Ships During the War

Dr. Chevalier, general medical inspector of the Public Health and Marine Hospital Service, recently made an interesting report to the Academy of Medicine on the subject of hospital ships during the war. The part that these ships were to play during the war proved to be quite different from what was anticipated. As there were no great naval combats, they helped transport to the interior the wounded coming from the various battle areas. During the first month of the war they aided in transporting the wounded of the army of Flanders, thus supplementing the inadequate transportation facilities of the railroads. At the beginning of February, 1915, they began to operate in the Mediterranean, bringing home 220,000 wounded and sick from various Mediterranean fronts in the East. Toulon and Bizerta received 147,000 and 64,000, respectively, while in the ports of Algeria 5,000 were debarked. After the first conflicts in the Dardanelles a certain proportion of the sick and wounded were taken to Egypt. The ports of debarkation were informed in advance by wireless of the number of wounded on board the ships. Experience has shown that the hospital ships constitute a most valuable means of evacuating the sick and the wounded. The men are well quartered, well fed and have constant medical care. The rocking of the boat is the only disadvantage, but this is very slight owing to the great size of the steamers, and is at least preferable to the shaking of the railway trains. A great amount of surgical work was done on board. In one instance a single surgeon, during the course of several voyages representing thirty-nine days of hospitalization, treated 1,884 wounded and performed 155 major operations. Another surgeon, in fifteen crossings, performed 968 operations, 300 of which were under general anesthesia. It is to be hoped that in the future, instead of its being necessary in an emergency to use boats that have been remodeled, enough hospital ships will be constructed in advance, according to special plans, and that the medical supplies for these ships will also be on hand in ample quantities in whatever port constitutes their base.

Conference of French and Swiss University Authorities

At the invitation of the University of Geneva, a conference of French and Swiss university authorities was held recently. Delegates from the French universities and from the Swiss universities, including both those of so-called French and of German Switzerland, convened at Geneva and took up the question of establishing proper university relations between the two countries, particularly as regards the exchange of students and professors. The medical faculties were represented at the conference by four Swiss professors and by two French professors, the regretted Lépine of Lyons and Dr. J. Vanverts, professor in the University of Lille. The conference passed a resolution to the effect that French and Swiss medical students holding a baccalaureate degree and provided with a certificate of maturity, whether French or Swiss, may be matriculated in the universities of either country and may receive full credit for work done.

Commemorative Tablet to French Physicians Killed in Battle

At a meeting held December 9, the Academy of Medicine decided to erect a stele in the Hall of Fame in commemoration of the members of the medical corps who died on the battlefield. The execution of the stele will be entrusted to Dr. Paul Richer, professor in the School of Fine Arts and member of the Academy of Medicine.

Departure of the Canadian Red Cross

The Canadian Red Cross, which is about to withdraw from France, gave recently a farewell reception at which a representative of the undersecretary of the army medical corps, as well as M. Justin Godart, the former undersecretary, were present. Without counting the Canadian Hospital, which

has 520 beds and cost 2,000,000 francs, the Canadian Red Cross has turned over 2,000,000 francs to the French Red Cross and to various other welfare societies. A gift of 1,300,000 francs was also made to the president of the French republic in aid of the refugees, so that the Canadian Red Cross has expended in France a total sum of 30,550,646 francs.

Reeducation of Disabled Alsatians and Lorrainers

A decision has been reached that enlisted men and officers residing in Alsace or Lorraine who are suffering from disabilities arising from wounds and diseases contracted or aggravated during the war may secure admission to a special school of reeducation with a view to their being trained and placed in some industry or profession, provided they are of French origin or come within the category of persons permitted by the treaty of peace with Germany to be reclaimed as French nationals, and provided further that those requesting admission to such schools shall have reclaimed French nationality before making their request. The Landesfürsorgestelle für Kriegsinvaliden, which was created, June 3, 1915, under the German administration, has been transformed into the Institut des mutilés, réformés et veuves de guerre d'Alsace et de Lorraine, the purpose of which is to serve as a clearing house for information concerning the action of various administrative and private societies; to encourage and facilitate the reeducation of the disabled; to study into the regulations and legislative enactments that may be of advantage to certain persons interested, and, in a general way, to secure for such persons the help and support that they may need and are their due.

The Closing of a School of Reeducation

The School of Reeducation of Maison-Blanche, located in Neuilly-sur-Marne, department of the Seine-et-Oise, founded in July, 1916, by the Union des colonies étrangères en France en faveur des victimes de la guerre, has just closed its doors after more than three years of labor devoted to the reeducation of war cripples. During this period, this school reeducated more than 3,000 partially disabled men, preparing them for twenty or more different trades or professions. Positions were secured for a large number of these immediately on leaving the school. The funds for the support of this school, amounting to more than a million francs, were furnished entirely by a generous citizen of the United States, Edward T. Stotesbury of Philadelphia.

MEXICO CITY

Jan. 4, 1920.

Yellow Fever

Yellow fever is apparently spreading in this country, since a case has been reported at the port of Salina Cruz on the Pacific Coast far from Yucatan, the focus of the present epidemic. Dr. Noguchi has already begun his efforts to eradicate the disease, employing for this purpose his method of prophylactic vaccination by means of killed cultures of *Leptospira*. It is expected that this vaccine will give good results in view of the fact that yellow fever is one of those diseases that confer complete and permanent immunity and that the germ isolated by Dr. Noguchi is apparently the etiologic agent of this disease.

It is stated here that the sanitary authorities of Washington, having in mind the possibility of this disease spreading to the United States, have designated a commission composed of sanitarians and bacteriologists to come to this country and study the subject.

Noguchi has also presented to the Instituto Bacteriológico Nacional a dozen monkeys which will be utilized to carry out experiments on typhus fever (these animals being sensitive to the virus of this disease) and also to try the curative value which is claimed for a dog serum prepared here by inoculating dogs with the blood from typhus fever patients.

Death Due to Arsphenamin

A few days ago there happened in this town a death in a physician's office, caused by an injection with arsphenamin. The patient, about 24 years of age, was in the secondary stage of the disease with no apparent visceral lesions, and had a good physique. The injection was the third one, and German salvarsan was employed in doses of 30 cg. dissolved in 15 c.c. of distilled water without previous alkalization and being administered with a syringe. Respiratory symptoms occurred almost immediately, and the patient succumbed to acute dyspnea in about five minutes. Necropsy revealed a unilateral suppurating pyelitis and many enlarged blood ves-

sels in both lungs, accompanied by embolisms of the same vessels. The two previous injections were administered at intervals of a week, in the same amount as the fatal one and with the same technic. In this case the death must be attributed to the defective technic and not to the drug, since it was obviously at fault in two respects, the acidity of the solution and the very small amount of the vehicle, which should have been at least 75 c.c. If no accident happened during the first injections, it may perhaps be attributed to the existence at the time of sufficient alkali reserve for the neutralization and redissolution of the arsphenamin.

Campaign Against Syphilis

The municipal council of the city of Puebla has adopted the proposal of Dr. Camarillo, who advocates that the municipal councils of the whole country should unite to formulate a program for a campaign against syphilis, to arrest contagion at its source. His plan is to treat energetically the contagious sores of prostitutes in the hospitals, so that these creatures may receive the benefit of modern arsenical medication. In Dr. Camarillo's opinion, it is criminal to isolate prostitutes and treat them only with mercury, since their lesions reappear afterward. He wants to have street-walkers properly cared for and forbid them to practice their profession, unless in addition to the lack of contagious lesions they give negative Wassermann reactions. For this purpose they will be compelled to have a sanitary card in which will be noted their sanitary condition from clinical and serologic standpoints.

Personal

During the year 1920 the position of mayor of the City of Mexico will be filled by Dr. Luis Coyula, former professor of physiology of the School of Medicine and a prominent journalist.

BUENOS AIRES

Nov. 25, 1919.

Anesthesia

The Association of Surgery has devoted several meetings to discussions on general anesthesia, the consensus being in favor of ether.

Thyroid Disorders

The Medical Society has devoted its special meetings this year to a study of hyperthyroidism and exophthalmic goiter. Drs. Lozano and Kraus discussed the first subject and Drs. Hardoy, Houssay, Escudero, Peralta Ramos and Domínguez the second.

Lecture on War Surgery

Dr. Pedro Chutro, who has just arrived from the United States, has given a series of lectures on war surgery in the School of Medicine.

Surgical Aeroplanes

Dr. Beretervide has declared that he intends to organize a service of aeroplanes to carry all the equipment necessary for surgical operations. In this way there can be performed any emergency operations that may be required in out of the way places.

Professorial Appointments

Dr. Pedro Chutro has been appointed professor of clinical surgery and Dr. B. A. Houssay professor of physiology in the School of Medicine of Buenos Aires. There has been approved the foundation of an institute of physiology which will include chairs of physiology, chemistry and biologic chemistry.

Marriages

ALBERT LEROY BROWN, Captain, M. C., U. S. Army, Douglas, Ariz.; to Miss Vlasta Coffey of Ellsworth, Kan., at Douglas, November 12.

FRED LOWE SOPER, Sao Paulo, Brazil, formerly of Chicago, to Miss Juliet Snider of Fort Scott, Kan., December 27.

ALFRED LEE LOOMIS BELL, Englewood, N. J., to Miss Grace Pauline Seidel of Philadelphia, January 1.

WILLIS CLARENCE KOOLS, Holland, Mich., to Miss Wilma Denabel, at Kalamazoo, in November.

CHAPIN CARPENTER, Wayne, Pa., to Miss Mary Ruth Smyth, at Pottsville, Pa., December 27.

ROBERT SHAFER, to Miss Ruth Hollis Taneyhill, both of Baltimore, December 27.

Deaths

Christian Rasmus Holmes, dean of the Medical Department of the University of Cincinnati, died in the Post-Graduate Hospital, New York City, January 9.

Dr. Holmes was born in Denmark, Oct. 18, 1857. His early education in Denmark and Germany was in civil engineering. At the death of his father he came with his mother to Cincinnati, beginning the study of medicine in the Miami Medical College, graduating in 1886. He became assistant to Dr. Joseph Aub, well known ophthalmologist of Cincinnati, and succeeded him in this specialty.

In 1892, Dr. Holmes became a member of the City Hospital staff. He appreciated the necessity of a city hospital worthy the name, and of the consolidation of the warring factions of the two chief medical colleges in the city. In the attainment of the first object, the establishment of an adequate general hospital in Cincinnati, he spent ten years of arduous labor in the hospitals of the United States and Europe. The result of these labors stands today as Dr. Holmes' greatest monument, the Cincinnati General Hospital. Dr. Holmes aided greatly in the consummation of the merger of the Medical College of Ohio and the Miami Medical College into the University of Cincinnati in 1909. The two colleges were made an integral part of the University of Cincinnati, with Dr. Holmes as dean of the new institution. In order to secure the union of the two colleges, Dr. Holmes helped in framing the charter which made the medical department of the hospital a part of the university whose trustees should have the sole right to elect the staff and supervise the nursing department.

Dr. Holmes was commissioned major, M. R. C., 1917, and placed in charge of the eye, ear, nose and throat department at the base hospital, Camp Sherman, Chillicothe, Ohio, where he remained until the end of hostilities.

Dr. Holmes was a prolific contributor to the literature regarding hospitals and their relation to medical education and to the literature of his specialty. He served as professor of otology in Miami Medical College from 1890 to 1894, as professor of ophthalmology in the Laura Memorial Medical College and Presbyterian Hospital from 1892 to 1903, and as professor of otology and dean of the University of Cincinnati since 1904. He was ophthalmologist and otologist to the Cincinnati Hospital from 1888 to 1899, and has been consulting ophthalmologist to the institution since 1908. He was third vice president of the American Medical Association in 1902-1903, chairman of the Section on Otolaryngology and Otology in 1904 and 1905, and of the Section on Ophthalmology in 1905-1906. He was president of the American Academy of Ophthalmology and Oto-Laryngology in 1901 and 1902, of the American Ophthalmological, Otolological and Otorhinological Society in 1908-1909, and of the Cincinnati Academy of Medicine.

Dr. Holmes was an idealist and enthusiast, and worked with untiring energy, sacrificing health and fortune to the accomplishment of the great plans which he had conceived.

Henry Marvel ♂ Atlantic City, N. J.; second vice president of the American Medical Association; died January 8, after a surgical operation. Dr. Marvel was born in Dover, Del., 1868, and received his medical degree from the University of Pennsylvania, Philadelphia, in 1895; he was a member of the American Association of Obstetricians and Gynecologists, and of the New York Academy of Medicine. Dr. Marvel made a specialty of surgery and was surgeon to the Atlantic City Hospital, consulting surgeon to the Jewish Home, and had been physician to St. Michael's Children's Hospital, Atlantic City. Dr. Marvel in addition being vice president of the Association has been a member of the House of Delegates; he was always an active worker in the many annual sessions of the Association held in Atlantic City. Last year he was chairman of the committee on arrangements; those who were present at the session will testify to the splendid executive ability he displayed at that time.

Charles McIntire ♂ Easton, Pa.; University of Pennsylvania, Philadelphia, 1883; aged 72; secretary of Northampton County Medical Society from 1878 to 1897 and president in 1900; president of the Lehigh Valley Medical Association in 1901; secretary of the American Academy of Medicine from 1901 to 1902, and from 1903 to 1915, president in 1902 and 1903, and treasurer since 1915; a specialist in ophthalmology;

indicates "Fellow" of the American Medical Association.

assistant in chemistry from 1868 to 1870, adjunct professor of chemistry from 1870 to 1874, and lecturer on sanitary science from 1880 to 1905, in Lafayette (Pa.) College; editor of the *Lehigh Valley Medical Association Journal* for several years, and of the *Bulletin of the American Academy of Medicine*, since 1896; died January 4.

Lorenzo P. Gibson ♂ Little Rock, Ark.; Jefferson Medical College, 1877; aged 62; demonstrator of anatomy in the University of Arkansas from 1878 to 1903; acting assistant surgeon United States Marine Hospital Service since 1892; vice president of the American Medical Association, 1890-1891; president of the Arkansas Medical Society in 1895-1896; ex-president of the College of Physicians and Surgeons, Little Rock Medical Society and Pulaski County Medical Society; editor of the *Journal of the Arkansas Medical Society* for fifteen years; formerly secretary of the Arkansas State Board of Health; died December 29, from pneumonia.

Lucien F. Salomon, New Orleans; Tulane University, New Orleans, 1872; aged 69; a member of the Louisiana State Medical Association; a well known expert on yellow fever and typhoid fever; secretary of the Louisiana State Board of Health from 1886 to 1894; acting assistant surgeon U. S. Army in 1884 during the yellow fever epidemic; who investigated sanitary conditions in Jamaica in 1885 and in Porto Rico in 1898 for the United States government; for two terms president of the New Orleans Medical and Surgical Association; died December 31, from heart disease.

William Edward Grant, Louisville, Ky.; Jefferson Medical College, 1886; Kentucky School of Medicine, Louisville, 1887; aged 74; a member of the Kentucky State Medical Association; health officer of the city of Louisville from 1909 to 1917; professor of medical life insurance and dean of the University of Louisville, Medical Department, from 1911 to 1914, and at the time of his death registrar of vital statistics for Jefferson County; died from angina pectoris, January 3.

Andrew Nelson Lerskov, Claremore, Okla.; University of Nashville, Tenn., 1907; aged 35; a member of the Oklahoma State Medical Association; formerly secretary of the Rogers County Medical Society and superintendent of health of Rogers County; First Lieutenant, M. R. C., U. S. Army, and honorably discharged Dec. 7, 1918; died in Kansas City, Mo., in November, from tuberculous peritonitis.

Charles S. Harle, Clifton, Ariz.; University of Louisville, Ky., 1892; aged 49; a member of the Arizona Medical Association; who practiced for several years in Chihuahua, Mexico, and spent ten years in prison, following his conviction for complicity in the murder of several men for their life insurance, and was afterward surgeon-general of Villa's armies, died in Abilene, Texas, December 30.

Warwick Miller Cowgill ♂ Lincoln, Neb.; University of Louisville, Ky., 1883; aged 62; who limited his practice exclusively to diseases of the eye, ear, nose and throat; for many years ophthalmic and aural surgeon for the Louisville and Memphis divisions of the Illinois Central System, at Paducah, Ky.; died in St. Elizabeth's Hospital, Lincoln, December 29, from nephritis.

Neidhard Hahnemann Houghton ♂ Boston; New York Homeopathic Medical College, New York City, 1887; aged 58; associate professor of diseases of the nose and throat in the medical department of Boston University; died in the Massachusetts Homeopathic Hospital, Boston, December 26, from injuries received when struck by a streetcar in Brookline, a short time before.

John F. Glover, Evansville, Ind.; University of Illinois, Chicago, 1888; aged 64; a member of the Indiana State Medical Association; for many years assistant superintendent of the Southern Indiana Hospital for the Insane, Woodmere, Evansville, and secretary of the Evansville Board of Health; died December 28, in the Walker Hospital, Evansville, from heart disease.

William Harold Townsend ♂ Sac City, Iowa; State University of Iowa, Iowa City, 1897; aged 50; assistant surgeon of the Fifty-Second Iowa Infantry, U. S. V., during the war with Spain; once mayor of Sac City and for sixteen years coroner of Sac County; died December 24 from carcinoma.

Thomas Estill Holland ♂ Hot Springs, Ark.; Missouri Medical College, St. Louis, 1874; aged 70; formerly president of the Medical Association of the Southwest; formerly Lieut.-Col., M. C., Mo. N. G.; a member of the staff of the Ozark Sanitarium; died December 21.

John D. Cope, Negley, Ohio; American Eclectic Medical College, Cincinnati, 1882; aged 70; was thrown from his

buggy in a runaway accident near his home, December 22, sustaining a fracture of the skull and other injuries from which he died ten hours later.

Oliver Tracy Logan, Changteh, Hunan, China; Medical College of Indiana, Indianapolis, 1895; aged 49; for twenty-three years a medical missionary of the Presbyterian Board in China; died December 7 in China as the result of an accidental gunshot wound.

Willard Clyde Foster ♂ Casper, Wyo.; University of Minnesota, Minneapolis, 1902; aged 42; formerly local surgeon of the Colorado Fuel and Iron Company and the Colorado Midland Railway at Gulch, Colo.; was killed in an automobile accident, recently.

Edward C. Ellerbrock, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1896; St. Louis College of Physicians and Surgeons, 1902; aged 64; died in the St. Louis City Hospital, December 25, from accidental poisoning by bichloride of mercury.

Benjamin Franklin Archer, Sweet Water, Texas; Tulane University, New Orleans, 1861; aged 85; surgeon of a Mississippi regiment in the Confederate service during the Civil War; representative in the state legislature from 1872 to 1874; died December 14.

Elva A. Cram, Great Falls, Mont.; Kentucky School of Medicine, Louisville, 1903; aged 42; a member of the Kentucky State Medical Association and for several years a practitioner of Peach Grove, Ky., died December 26, from pulmonary tuberculosis.

Mary Caroline Hollister, Chicago; Northwestern University Woman's Medical School, Chicago, 1882; aged 59; a member of the Illinois State Medical Society; a specialist on diseases of the eye and ear; died at her winter home, Lake Worth, Fla., January 2.

Walter Ralie Francis, Bowling Green, Ky.; Cincinnati College of Medicine and Surgery, 1881; aged 63; a member of the Kentucky State Medical Association; died in St. Joseph's Hospital, Bowling Green, December 24, from pneumonia.

Marcus H. White, Roseburg, Ore.; Keokuk, Iowa, Medical College, 1891; aged 76; a veteran of the Civil War; for twenty-five years a practitioner of Portland; died at the Oregon Soldiers' Home, Roseburg, October 23, from paralysis agitans.

Robert M. Foster ♂ Russellville, Ind.; Kentucky School of Medicine, Louisville, 1903; aged 48; died in the L. L. Culver Union Hospital, Crawfordsville, Ind., December 29, from peritonitis two weeks after an operation for appendicitis.

Corydon S. McClain, Springfield, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; aged 76; formerly one of the editors of the *Springfield Advertiser*; was found dead, December 22, from gas asphyxiation.

Benjamin Davis, New Carlisle, Ohio; Medical College of Indiana, Indianapolis, 1879; aged 73; president of the Clark County Health Board; died at the home of his daughter in Osborn, Ohio, December 23, from heart disease.

Peter C. Guinan, Rochester, N. Y.; University of Buffalo, N. Y., 1887; aged 64; a member of the Medical Society of the State of New York; died in the Rochester General Hospital, January 4, from cerebral hemorrhage.

James Pittman, Cincinnati, Ark.; St. Louis College of Physicians and Surgeons, 1898; aged 48; a member of the Arkansas Medical Society; died in the City Hospital, Fayetteville, Ark., December 18, from appendicitis.

Joseph William Little, Washington, D. C.; George Washington University, Washington, D. C., 1872; aged 76; a member of the Medical Society of the District of Columbia; died December 28, from myocarditis.

Cephas L. Carroll, Taylorville, Ill.; Detroit Medical College, 1870; aged 83; died in St. Vincent's Hospital, Taylorville, December 26, a few hours after an operation for the removal of stones of the bladder.

Rachael Swain, Indianapolis; Northwestern University Woman's Medical School, Chicago, 1882; aged 80; who had been spending the winter in Long Beach, Calif., died December 31.

Benjamin Griffiths Beddoe ♂ Scranton, Pa.; Jefferson Medical College, 1890; aged 64; a member of the staff of the West Side Hospital, Scranton; died December 24, from pneumonia.

Harry J. Garber, Essexville, Mich.; Homeopathic Hospital College, Cleveland, 1889; aged 53; died in Grace Hospital, Detroit, December 17, from carcinoma of the esophagus.

William Rutherford Young ♂ Long Beach, Calif.; State University of Iowa, 1893; aged 51; for many years a practitioner of Ansley, Neb.; died December 22, from heart disease.

Edmund Gerrish Dearborn, Antrim, N. H.; Harvard Medical School, 1904; aged 40; a member of the New Hampshire Medical Society; died in Nashua N. H., November 30.

Martin F. Moore ♂ Ottumwa, Iowa; Keokuk, Iowa, Medical College, 1898; aged 44; died December 27, at the Ottumwa Hospital from heart disease, after a sinus operation.

John Thomas Strode, Maysville, Ky.; Jefferson Medical College, 1862; Pulte Medical College, Cincinnati, 1879; aged 81; died December 24 from cerebral hemorrhage.

Walter Louis Havens, Chester Depot, Vt.; College of Physicians and Surgeons in the City of New York, 1885; aged 58; died December 7, from tuberculosis.

Paris Garner Clark, Unadilla, N. Y.; Bellevue Hospital Medical College, 1868; aged 74; for many years a member of the local school board; died December 21.

William A. Brown, Louisville, Ky.; Meharry Medical College, Nashville, Tenn., 1892; aged 58; a colored practitioner; died October 19, from cirrhosis of the liver.

James L. Holden, Zanesville, Ohio; Medical College of Ohio, Cincinnati, 1882; aged 61; mayor of Zanesville in 1901 and 1902; died December 20, from nephritis.

Duane P. Andrus, St. Louis; American Medical College, Eclectic, St. Louis, 1883; aged 69; was found dead in his room, December 16, from gas asphyxiation.

Marion Cooper Geiger, Polytechnic, Texas; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; aged 66; died December 26, from heart disease.

Ella Ridgway Ziegler ♂ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1874; aged 74; died December 30, from cerebral hemorrhage.

Thomas M. Dromgold, Ottawa, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 71; in Ryburn Hospital, Ottawa, December 21, from cerebral hemorrhage.

William Delay ♂ Rome, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881; died at Selma, Ala., December 7, from cerebral hemorrhage.

Levi N. Smith, Western, Neb.; Kentucky School of Medicine, Louisville, Ky., 1881; aged 65; died December 19, as the result of an automobile accident.

Davis A. Hogue ♂ Altoona, Pa.; Jefferson Medical College, 1875; aged 65; died in Mercy Hospital, Altoona, December 18, from pulmonary embolism.

John Franklin Bradshaw, Lincoln, Neb.; Rush Medical College, 1879; aged 63; also a druggist; died December 19, from gangrene of the lungs.

Helen Grant Winn Zimdars, San Francisco; Cooper Medical College, San Francisco, 1897; aged 50; died December 25, from angina pectoris.

William E. Robinson, Rapid City, S. D.; Louisville (Ky.) Medical College, 1894; aged 48; died December 3, from pulmonary tuberculosis.

Sylvester Bronson Moon, Wilmington, Ohio; Miami Medical College, Cincinnati, 1872; aged 84; died December 21, from senile debility.

Andrew P. Davis, Los Angeles; Rush Medical College, 1867; Pulte Medical College, Cincinnati, 1877; aged 84; died December 19.

John F. Finley, Palmyra, Ind. (license, Indiana, 1897); aged 72; a practitioner for forty years; died December 25, from heart disease.

Stanley Wheelock, Quincy, Ill.; Kentucky School of Medicine, Louisville, 1893; aged 48; died November 22, from endocarditis.

Elisha J. Graham, Hodgenville, Ky.; University of Louisville, Ky., 1866; aged 80; a veteran of the Civil War; died December 24.

T. F. Donaldson, Knoxville, Tenn. (license, Tennessee, 1889); aged 70; died December 15 from pulmonary hemorrhage.

John Loomis, Jeffersonville, Ind. (license, Indiana, 1897); aged 99; a practitioner since 1860; died December 22.

David Norwood, Esperance, N. Y.; Albany (N. Y.) Medical College, 1867; aged 86; died November 24.

Jeremiah Roberts, Holton, Ind. (license, Indiana, 1897); aged 81; died November 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SINGLETON'S EYE OINTMENT AND OTHER NOSTRUMS

The letter quoted below, from a layman in Oregon, is typical of those received by the Propaganda department from the general public. It is reproduced and answered because, in the answering, certain facts may be brought out that may be of interest to the medical profession.

"In looking over and re-reading your valuable work 'Nostrums and Quackery' I see no mention made of the alleged three-hundred-year-old British eye remedy, 'Singleton's Eye Ointment' nor 'Congreve's Elixir for Consumption.' Neither is the analysis of Swift's S. S. S. Remedy given nor 'Absorbine'; not a word about the remedies of Dr. Miles of Elkhart—his 'Nervine,' 'Anti-Pain Pills' and 'Heart Cure'; nor the 'Dr. Blosser Catarrh Remedy Company' of Atlanta, Ga. I should like to know the composition of the above mentioned remedies.

"How much I would like to see you organize a great campaign and print large bills exposing these frauds and have them on bill-boards in cities and your information distributed in form of pamphlets from house to house.

"In 'Nostrums and Quackery' you do not mention the 'Enk Tissue Remedies' nor 'Bon Opto' for the eyes. What is the composition of 'Tanlac' put up by the Cooper Medicine Company and 'Yellow Minyol' for the scalp put out by the Blackburn Products Company"

"Singleton's Eye Ointment" is not dealt with in "Nostrums and Quackery" because the stuff has but a limited sale in the United States; it is a British nostrum. It was analyzed by the chemists of the British Medical Association in 1909 who reported it to be essentially a mixture of lard, Japan wax and purified cocoanut oil with 4 per cent. of beeswax and 7.4 per cent. of red mercuric oxid. This analysis is recorded in Street's book "The Composition of Certain Patent and Proprietary Medicines" published by the American Medical Association. "Congreve's Elixir for Consumption" was also omitted from "Nostrums and Quackery" because the stuff is sold almost entirely in the British Isles or British possessions. It, too, has been analyzed by the chemists of the British Medical Association, who reported the presence of over 28 per cent. of alcohol by volume with only 2.6 per cent. of total solids, of which about 1 per cent. was sugar and 0.5 per cent. resinous constituents, with a little tannin, coloring matter and extractives. This formula also is given in Street's book.

"S. S. S." or "Swift's Sure Specific" is not discussed in "Nostrums and Quackery" (which came from the press in January, 1913) but is dealt with in more recent publications. An article on the product will be found in the pamphlet "Miscellaneous Nostrums."² In the same pamphlet will be found articles on "Absorbine," "Miles' Heart Treatment" (with incidental mention of "Miles' Anti-Pain Pills") "Bon Opto" and "Tanlac." "Miles' Nervine" is the subject of an article in the pamphlet "Epilepsy Cures,"³ while the composition of "Yellow Minyol" as found by the chemists of the Connecticut Agricultural Experiment Station is given in the pamphlet "Cosmetic Nostrums" also published by the Association.

The Blosser concern was dealt with by Mr. Adams in his "Great American Fraud" series (reprinted by the Association); the report of the North Dakota state chemists to the effect that this "catarrh remedy" is a mixture of chamomile flowers, aniseed, cubeb and pepper, is briefly quoted in Street's book.

The "Enk Tissue Remedies," while on record in the files of the Propaganda department, have seemed to constitute

too insignificant a piece of quackery to warrant the preparation of any article on them. While the Association does not have large posters on the bill-boards exposing the nostrum evil, it does have on sale educational posters on the subject and these are used to no small extent by individuals and organizations interested in bringing home to the public the menace of the nostrum. While, too, the Association does not distribute its pamphlets on the nostrum evil and quackery from house to house, nevertheless, in the past few years over a million pamphlets and books dealing with this subject have been put in the hands of the public.

KLINE'S NERVE RESTORATIVE

A physician in South Carolina, writes:

"I am anxious to learn the chemical composition or formula of 'Kline's Nerve Restorative'; also its therapeutic properties, if any. I was consulted recently by a patient regarding the preparation and, unfortunately, could only inform the patient—to quote a recent and very pertinent editorial in a most valuable medical journal—that possibly it was a preparation 'founded on 5 per cent. banalities of elementary science and 95 per cent. of pseudo-scientific flapdoodle,' and was not noted for any special therapeutic properties."

"Kline's Nerve Remedy" is one of a group of alleged epilepsy cures investigated by the Propaganda department and analyzed by the A. M. A. Chemical Laboratory in 1915. At that time it was reported, of the Kline nostrum, that: "Essentially, each 100 c.c. of the solution contains approximately 8.7 gm. ammonium bromid, 9.2 gm. potassium bromid and 8.0 gm. sodium bromid. Calculating from the bromid determinations each meal-time dose, one teaspoonful (1 fluidram), contains the equivalent of 17.2 grains potassium bromid, and each daily dose (5 teaspoonfuls) corresponds to 87.0 grains potassium bromid." The article on Kline's remedy, as well as the articles on other so-called epilepsy cures, have been brought together in one pamphlet ("Epilepsy Cures," price 10 cents) prepared and issued by the Propaganda department of THE JOURNAL.

Correspondence

MEDICAL VETERANS OF THE WORLD WAR

An Appeal to Medical Members of Selective Service Boards

To the Editor:—Immediately on the termination of hostilities in November, 1918, members of the medical profession on active service in Washington recognized the need of an organization to perpetuate the principles and fellowships developed during the war. A committee was therefore formed, which was representative of those governmental services—including the Provost Marshal General's Office—which were directly associated with the selection and administration of the armed forces of the United States. This committee formulated a constitution and by-laws which were adopted by the newly formed society at its first annual meeting, held at Atlantic City in June, 1919, in connection with the meeting of the American Medical Association. The society was tentatively named the Medical Veterans of the World War.

The qualifications set forth in the constitution provide that, in addition to men of the military, naval and public health services, the following are eligible to membership, namely, all medical members and medical examiners of Local, Medical Advisory and District Boards, officially appointed by the President of the United States, the Provost Marshal General, or the governors of the various states; also, additional examining physicians who were appointed by the President of a Local or Medical Advisory Board and vouched for by the medical aide to the governor.

When the armistice became effective, there were about 25,000 physicians who were associated with the operations of the Selective Service, in one or other of the capacities just cited. The personal and official relationships formed in

1. Street, J. P.: The Composition of Certain Patent and Proprietary Medicines, Chicago, American Medical Association, price 1.25 postpaid.

2. Miscellaneous Nostrums: Chicago, Am. Med. Assn., price 20 cents.

3. Epilepsy Cures: Chicago, Am. Med. Assn., price 10 cents.

4. Adams, S. H.: Great American Fraud, Chicago, Am. Med. Assn., price 25 cents.

their activities were of so binding a character that medical men thus engaged were conscious of a strong bond of fellowship. It would be a great pity if the fine sentiments and comradeships engendered by the work should cease to be, through lack of opportunity for their continued expression. The society of Medical Veterans of the World War fills the need ideally, and it is felt that all medical men who were associated in the great and eminently successful work of the Selective Service should identify themselves with this organization.

The next annual meeting of the society will be held at New Orleans, April 27, the first day of the meeting of the American Medical Association. The dues are negligible—only one dollar with the application. The secretary-treasurer is Col. F. F. Russell, M. C., U. S. Army, Army Medical School, Washington, D. C. The president is Dr. Victor C. Vaughan, Ann Arbor, Mich.; the vice president is Admiral Stitt, and the trustees are Col. F. A. Winter and Drs. James C. Perry, John M. Dodson, George E. Brewer, Hubert Work and Joel E. Goldthwait.

F. R. KEEFER, M.D., Carlisle, Pa.

Colonel, M. C., U. S. Army; Late Chief, Medical Division, Provost Marshal General's Office.

[COMMENT.—According to the report of Col. F. F. Russell, secretary, on December 1 there were 2,399 members of the Medical Veterans of the World War, distributed as follows:

1. Medical Corps, U. S. Army	1,019
2. Medical Corps, U. S. Navy	41
3. Medical Corps, U. S. P. H. S.	57
4. Contract Surgeons, U. S. Army	81
5. Acting Asst. Surgeons, U. S. P. H. S.	43
6. Local Boards	491
7. Medical Examiner, Local Board	162
8. Medical Advisory Board	505
Total	2,399

The insignia which the badge committee has reported on is now being manufactured, and will be ready for distribution to the members within a short time.—ED.]

"Medical Veterans of the World War" Offers Opportunity for Constructive Work

To the Editor:—Would that the letter of the Surgeon-General of the Army (THE JOURNAL, Jan. 10, 1920) might be placed in the hands of every medical officer who served in the Medical Reserve Corps.

The Surgeon-General has struck at the very crux of the matter: Instead of criticism and fault finding, what is needed is united support to prevent a recurrence of much of the inefficiency of which many of us were witnesses. You cannot make an army medical officer out of a civilian practitioner over night. If we suffered from unpreparedness, we have no one to blame but ourselves. It is our duty to see that it does not recur. This can be accomplished only through education, not through carping criticism. We all have our story to tell of those under us—and by those over us. I, who served as a divisional instructor, might add much which would not appear complimentary, but such observations would profit little unless constructive in character.

The skilful operator who may have filled an important chair in a teaching institution or a medical internist of equal reputation may utterly fail in rendering efficient service in the field. Other qualifications in addition are necessary to produce an efficient army officer. The failure on the part of many to realize this phase of the situation was the cause of much heart burning. The time has come to cease complaining and to join hands in upholding the efforts which that small body of medical officers of the regular Army tried to exert in attempting to overcome a condition well nigh unsurmountable (450 medical officers for an army of 2,000,000 men). Those of us conversant with the conditions which then existed realize that in no better way can we aid in preventing a recurrence than in supporting whole heartedly the efforts of those who wish to make the organization of the Medical Veterans of the World War a powerful force in preparing for any future emergency.

JOSEPH LEIDY, M.D., Philadelphia.

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—The communication from Dr. Robert T. Frank (THE JOURNAL, Jan. 3, 1920, p. 47) contains some misconceptions of my interpretations of the results of the work that has been done in the studies directed toward ascertaining whether or not the placenta can be classified among the glands of internal secretion, as published in *Endocrinology* (3: 307 [July-Sept.] 1919). This article was merely intended as a review of the work to date in as brief a manner as possible. It was therein distinctly stated that "a retrospective analysis of the work undertaken, however, reveals four fairly distinct nuclei of attention," and a discussion was made of these four fields of effort, namely: (1) the possibility that the placenta produces an internal secretion concerned in eclampsia; (2) the possibility that the placenta produces an internal secretion effecting the mammary hyperplasia of pregnancy; (3) the possible galactogogic activity of the placenta, and (4) placental products considered as stimuli to growth. Each one of these phases of possible function was taken up seriatim and individually, and the statement that I have fallen into the error of not differentiating between hyperplasia or galactogogic stimuli or processes indicates a misreading of what I said, as any one can verify by reading the original article. Moreover, a wrong impression is given, as frequently happens when partial quotations are made. That I definitely assigned a finality to the bedside observations is implied by the quotation given by Dr. Frank. If he had quoted the following sentence, this implication would not have seen print. The next sentence is as follows:

It is of course obvious that we are here dealing with a condition much different from that occurring during pregnancy and that the negative results may mean little or nothing as evidence toward the part played by the placenta in *pregnancy hyperplasia*; nevertheless, the validity of the interpretation is on a par, *until disproved*, with that given from the work on virgin animals.

As to the effect of the ingestion of desiccated placenta on the growth of breast-fed infants, the observations of Van Hoosen, Cornell, and McNeile and myself have yet to be disqualified by experimental work.

Now as to my reading into the results that the placenta *does* of a fact produce an intra-uterine growth-promoting hormone: Such was neither my intention nor my aim. The statement that "it is not illogical to suppose that the placenta in utero produces a substance acting as a stimulus to fetal growth" should to any thoughtful reader convey what it was intended for, the idea, purely speculative, that such a possibility might exist, and pointing out a possible field of investigation. Its intention should be particularly obvious, since I did not make any references to any work that had been carried on tending to throw light on the possibility.

FREDERICK S. HAMMETT, PH.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLUE FOR TRACTION IN FRACTURES

To the Editor:—Please inform me concerning Sinclair's formula for a glue for traction in fractures.

W. E. WHALEN, M.D., Ogden, Utah.

ANSWER.—According to Sinclair's formula, 4 ounces of glue are placed in 4 pounds of cold water and left in a cool place for twelve hours. If the glue dissolves, it is bad; if it is coherent and gelatinous, weighing 8 ounces, it is good; if coherent and gelatinous, weighing 16 ounces, it is very good; if coherent and gelatinous, weighing 20 ounces, it is excellent. Fifty parts of good glue are soaked for twelve hours in water, 50 parts; glycerin, 4 or 6 parts, and menthol, 1 part, and then melted on a water bath. After neutralizing to litmus with sodium hydroxid, as commercial glue at times contains free hydrochloric acid, there are added 4 parts in summer and 5 parts in winter of glycerin and 1 part of

menthol. Frequent heating evaporates the water, which should be added from time to time. When reheated many times, adhesive power is lost. The technic is as follows:

1. The skin is not shaved.
 2. Wash the skin with soap and hot water which contains about 4 grams of washing soda to the pint, to convert the oil of the skin into soap, as glue will not adhere to a greasy surface.
 3. Dry the skin.
 4. Apply the warm glue evenly, brushing all the hairs of the limb in an upward direction.
 5. Keep a tension on the gauze all the time; bring it quickly but carefully into contact with the limb (inner and outer surface), and apply neatly a loose woven bandage, starting a hand's breadth above the malleoli up to the joint.
 6. When dry, apply traction.
- (The adhesive can be made waterproof with a 2 per cent. solution of potassium bichromate applied in the dark and then exposed to the light, or by means of liquor formaldehydi.)
7. The extension must always be applied very carefully, whether with Maw's elastic cotton net or with gauze.
8. The extension must be changed at once if the patient complains of a tickling or burning sensation under it, but it generally requires hanging about the tenth, twentieth or fortieth day.

In THE JOURNAL, Sept. 27, 1919, p. 973, Dr. W. F. Cunningham describes a new adhesive material for this purpose, which he believes superior to the Sinclair formula. It consists of a solution of celloidin in acetone, which is prepared as follows:

The required amount of celluloid scrap and acetone are placed in a dry, clean, wide-mouthed bottle and securely stoppered. The bottle is then shaken or agitated at intervals, and the solution is ready for use in from twenty-four to forty-eight hours. When properly made, it should be an almost clear, homogeneous, syrupy fluid.

In the experiments, no careful preparation of the skin was made. It should, however, be absolutely dry; and the preliminary use of a few cubic centimeters of acetone on the region to be employed may aid in this respect, but is not necessary. A layer of celluloid solution is rapidly applied by means of a small, stiff brush. The quantity should be sufficient to soak through the strip on which traction is to be applied, and a thin coating should be applied externally to get out all the wrinkles and air bubbles. Canton flannel is the best material for strips, but a double layer of gauze or muslin that is neither too hard nor too finely woven may be used.

Iodin and also picric acid and alcohol should be avoided as far as possible on areas to which any type of adhesive is to be applied. Both these drugs increase exfoliation, and we well know the reaction of certain drugs to the former. We believe, with Sinclair, that the part should not be shaved before adhesive material is applied, for the hairs, if abundant, increase the efficiency of the adhesive, like hair in plaster. If there is delay in putting on the strip, the skin should be recoated, or it dries out in a thin, flexible film in a minute or two. The application of a circular gauze bandage over cotton increases the effectiveness of adhesion and should be used. It is needless to state that the solution is combustible; therefore it should not be heated, and containers should be so labeled.

COMPARATIVE FOOD VALUES OF BUTTER AND OTHER FATS

To the Editor:—Can you give a comparison in food values and in digestibility of cocomargarine; olive oil and oleomargarine as compared with butter? With present prices for real butter, many are compelled to seek substitutes which may or may not be more economical.

J. TRACY MELVIN, M.D., Porterville, Calif.

ANSWER.—The heat values of butter and other fats are fairly constant; the values given are: for butter fat, 9.312; for fat of animal tissue, 9.372, and olive oil, 9.384 calories per gram. The nutritional value of a food is, however, also determined by the presence or absence of certain vitamins, as for instance, fat-soluble A, normally present in butter. The fat-soluble accessory growth substance is present in beef fat and "oleo-oil," and margarins prepared on such a basis are probably the nutritive equivalent of butter. Coconut oil, cottonseed oil, peanut oil, olive oil, and nut and vegetable oils in general contain little or none of this accessory substance, and margarins prepared from these are not the nutritive equivalent of butter. With allowance for metabolic products, the coefficients of digestibility have been found to be: for butter fat, 97 per cent.; for beef fat, 93; for olive oil, 97.8, and for coconut oil, 97.9 per cent.

For more complete details the following contributions may be consulted:

- A Problem Concerning Edible Fats, editorial, THE JOURNAL, Dec. 1, 1917, p. 1876.
- The Digestibility of Nut Oils, editorial, THE JOURNAL, Aug. 10, 1918, p. 467.
- Langworthy C. G., and Holmes, A. D.: Digestibility of Some Animal Fats, U. S. Dept. Agric. Bull. 310, Nov. 9, 1915; Digestibility of Some Vegetable Fats, U. S. Dept. Agric. Bull. 505, Feb. 13, 1917.
- Halliburton, W. D., and Drummond, J. C.: The Nutritive Value of Margarines and Butter Substitutes, J. Physiol. 51: 235, 1917.
- Lusk, Graham: The Elements of the Science of Nutrition, Ed. 3, Philadelphia, W. B. Saunders Company, 1917.

LITERATURE ON NITROUS OXID-OXYGEN ANESTHESIA

To the Editor:—I am desirous of obtaining all the literature in the past two years (American) on general anesthesia with nitrous oxid and oxygen.

V. D. THOMAS, M.D., Bloomington, Ill.

ANSWER.—In the Quarterly Cumulative Index for 1918, under the heading "Anesthesia," appear the following references:

- Nitrous oxid analgesia in obstetrics (J. C. Hoag) *Illinois M. J.* 33: 324 (April) 1918.
- in labor (L. C. Redmon) *Kentucky M. J.* 16: 499 (Nov.) 1918.
- in production of painless childbirth (M. Salzer) *Ohio State M. J.* 14: 406 (July) 1918.
- new inhaler for (A. H. Miller) *J. A. M. A.* 71: 109 (July 13) 1918.
- on possibility of mixing air in lungs with foreign air, especially as it is used in Krogh and Lindhard's nitrous oxid method (C. Sonne) *J. Physiol.* 52: 75 (July) 1918.
- Nitrous oxid-oxygen, comparative dangers and availability of (J. R. McCurdy) *Am. J. S. (anesthesia supp.)* 32: 19 (Jan.) 1918.
- and anaesthol sequence in oral surgery (C. H. Sanford) *Ann. Surg.* 67: 462 (April) 1918.
- changes produced in blood by nitrous oxid-oxygen anesthesia (T. D. Casto) *Am. J. S. (anesthesia supp.)* 32: 42 (April) 1918.
- in labor (C. E. Turner and W. I. Jones) *Am. J. S. (anesthesia supp.)* 32: 52 (April) 1918.
- in obstetrics (C. S. Fleming) *W. Va. M. J.* 12: 246 (Jan.) 1918.
- simple apparatus for (A. S. Wilson) *Brit. M. J.* 1: 78 (Jan. 19) 1918.
- Nitrous oxygen, experimental researches in warming of nitrous oxygen for anesthesia (P. Cassidy) *Am. J. S. (anesthesia supp.)* 32: 46 (April) 1918.

In the issue for January-September, 1919, under the same heading, appear:

- Nitrous oxid analgesia in labor (R. C. Coburn) *New York State J. Med.* 19: 37 (Feb.) 1919.
- in labor (R. S. Allison) *Northwest Med.* 18: 9 (Jan.) 1919.
- Nitrous oxid-oxygen analgesia in obstetrics (A. L. Smith) *Nebraska M. J.* 4: 54, 1919.
- cesarean section and obstetric observation under nitrous oxid-oxygen (E. I. McKesson) *Am. J. Surg. (anesthesia supp.)* 33: 84 (July) 1919.
- for cesarean section and obstetric operations (E. I. McKesson) *Ohio State M. J.* 15: 422 (July) 1919.
- for difficult extractions (H. R. Francis) *Am. J. Surg. (anesthesia supp.)* 33: 56 (April) 1919.
- in combination with ether or C. E. mixture for nose and throat operations (H. E. G. Boyle) *Brit. M. J.* 2: 684 (Dec. 21) 1918.
- in major surgery (F. K. Camp) *Southwest J. Med. & Surg.* 27: 49 (March) 1919.
- in normal labor and operative obstetrics (W. C. Danforth) *Am. J. Surg. (anesthesia supp.)* 33: 5 (Jan.) 1919.
- in obstetric operations and cesarean section (E. L. McKesson) *J. Indiana M. A.* 12: 8 (Jan.) 1919.
- some observations on limitations of nitrous oxid-oxygen anesthesia and a restraining device for obstreperous patients (W. F. Dramburg) *Am. J. Surg. (anesthesia supp.)* 33: 78 (July) 1919.
- Study of blood pressure changes during (W. B. Davis and W. H. Spencer) *Therap. Gaz.* 43: 82 (Feb.) 1919.

RESTORATION OF MENSTRUAL FUNCTION LOST AFTER RADIUM TREATMENT

To the Editor:—Can you give me any treatment for the restoration of the menstrual function in a young person after it has been partially stopped for a year from radium treatment, or inform me of literature on the subject?

J. A. VALENTA, M.D., Lake City, Iowa.

ANSWER.—In articles on the treatment of uterine fibroids or menorrhagia by radium it has been noted that many patients, after a cessation of menstruation from nine months to two years, begin spontaneously to menstruate again. This may occur even after the third year. It also seems likely that the giving of corpus luteum alone or in combination with hypophysis extract (pituitary solution) can hasten the return. If, however, the original radiation has been intense enough to destroy all the primordial follicles of the ovary, no return of menstruation can be expected.

A Swedish View of the Council on Pharmacy and Chemistry.—The leading, in fact, the only article in *Hygiea*, Oct. 16, 1919, is an account by Anderson-Tesch of his five months in the United States as delegate sent by the Association of Swedish Manufacturing Chemists to study the chemical industry in America and its development during the war. Incidentally he was much impressed with the medical institutions of this country, as he relates with minute detail, especially the way in which the physical examination of the recruits was managed and recorded. He devotes several pages to describing in detail the work of the Council on Pharmacy and Chemistry which, he says, is "undoubtedly the most energetic and well planned work for control of non-official remedies. It was realized by the initiative of the American Medical Association, America's largest and most esteemed medical association."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW YORK: New York City, Albany. Buffalo, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.
VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

ANNUAL CONFERENCE ON MEDICAL EDUCATION AND LICENSURE

The next conference on medical education and licensure will be held, March 1, 2 and 3, at the Congress Hotel, Chicago, under the auspices of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States. Instead of the three separate disjointed programs heretofore held, there will be a single program by which conflicts and duplications will be avoided, papers will be more carefully selected, and discussions will be more effectively directed. The program as now arranged is as follows:

Introductory Remarks by Dr. Arthur Dean Bevan, chairman of the Council on Medical Education; Dr. George Blumer, president of the Association of American Medical Colleges, and Dr. David A. Strickler, president of the Federation of State Medical Boards.
"Present Status of Medical Education." Dr. N. P. Colwell, secretary of the Council on Medical Education.

Symposium on "The Needs and Future of Medical Education," Dr. George E. Vincent, president of the Rockefeller Foundation, New York. The following also have been invited: Dr. Ray Lyman Wilbur, president of Leland Stanford University. Dr. Henry S. Pritchett, president Carnegie Foundation for the Advancement of Teaching, New York. Dr. Harry Pratt Judson, president University of Chicago. Mr. Abraham Flexner, secretary of the General Education Board, New York.

"The Larger Function of State University Medical Schools." Dr. Walter A. Jessup, president of the State University of Iowa, Iowa City.

"Full-Time Teachers in Clinical Departments," Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, New York.

"Research in Medical Schools, Laboratory Departments," Dr. Oskar Klotz, professor of pathology, University of Pittsburgh School of Medicine.

"Research in Medical Schools, Clinical Departments," Dr. G. Canby Robinson, dean, Washington University School of Medicine, St. Louis.

"Graduate Medical Instruction in the United States," Dr. Louis B. Wilson, Mayo Clinic, Rochester, Minn.

"Interallied Medical Relations; Qualifying Examinations, Licensure Requirements, Graduate Medical Education," Dr. Walter L. Biering, secretary of the Federation of State Medical Boards, Des Moines, Iowa.

"Interstate Relations in Medical Licensure," Francis W. Shepardson, director of the Department of Education and Registration of the State of Illinois, Springfield.

"Essential Improvements in Medical Licensure," Dr. John M. Baldy, president of the Pennsylvania Bureau of Medical Education and Licensure, Philadelphia.

Reports on Medical Teaching from the Committee on Medical Pedagogy of the Association of American Medical Colleges.

Remarks by the chairman of the committee, Dr. W. S. Carter, dean, University of Texas, Department of Medicine, Galveston.

Anatomy: Dr. Charles R. Bardeen, dean, University of Wisconsin Medical School, Madison.

Histology and Embryology: Dr. F. C. Waite, secretary, Western Reserve University School of Medicine, Cleveland.

Physiology: Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis.

Biologic Chemistry: Dr. Otto Folin, professor of biologic chemistry, Medical School of Harvard University, Boston.

Pharmacology: Dr. C. W. Edmunds, assistant dean, University of Michigan Medical School, Ann Arbor.

Pathology: Dr. James Ewing, professor of pathology, Cornell University Medical School, New York.

Bacteriology and Parasitology: Dr. A. I. Kendall, dean, Northwestern University Medical School, Chicago.

Public Health and Preventive Medicine: Dr. Victor C. Vaughan, dean, University of Michigan Medical School, Ann Arbor.

The afternoon of Wednesday, March 3, will be devoted to the separate business sessions of the three organizations. It is expected that the conference will be immediately followed by the annual meeting of the American Conference on Hospital Service.

Montana April Examination

Dr. S. A. Cooney, secretary of the Montana Board of Medical Examiners, reports the written examination held at Helena, April 1-3, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined, 12 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1907)	79.8
College of Physicians and Surgeons, Chicago	(1901)	75.6
Rush Medical College	(1919)*	75.7, 83.9
Kansas Medical College	(1911) 79.1, (1913)	79.7
College of Physicians and Surgeons, Baltimore	(1912)	78.3
Washington University	(1911)	82
John A. Creighton Medical College	(1913) 82, (1919)	79.9
Jefferson Medical College	(1904)	77.4
Medico-Chirurgical College of Philadelphia	(1900)	77.9

College	FAILED	Year Grad.	Per Cent.
Loyola University	(1917)	67.1
Kansas City Hahnemann Medical College	(1905)	71.5
Ensworth Medical College	(1909)	38.1

*Received certificate for four years' work; will receive M.D. degree after completing his intern year.

Arkansas Eclectic May Examination

Dr. Claude E. Laws, secretary of the Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, May 13-14, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Thirty-four candidates were examined, all of whom passed.

College	Year Grad.	No. Licensed
Hospital Medical College, Atlanta.....	(1909)	1
Bennett Medical College	(1909)	1
American Medical College	(1902)	1
Kansas City College of Med. and Surgery	(1918) 1, (1919)	30, 31

New Jersey June Examination

Dr. Alexander MacAlister, secretary of the New Jersey Board of Medical Examiners, reports the written examination held at Trenton, June 17-18, 1919. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Thirty-six candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1917)	88
Howard University	.....	(1916)	85.7
Baltimore Medical College	.....	(1912)	81.4
Johns Hopkins University	.....	(1917)	91.3
University of Maryland	.....	(1917)	86.3
Tufts College Medical School	.....	(1916)	82
Columbia University	.....	(1915)	83.5
New York Homeo. Med. Coll. and Flower Hosp.	.....	(1918)	86.7
University and Bellevue Hospital Medical College	(1918)	86.6, 88.8,	89.2
Hahnemann Medical College and Hospital of Philadelphia	(1917)	80.7,	
	(1918)	87.1.	
Jefferson Medical College	(1915)	82.2, (1916)	83.4, 85.4, (1917)
		84.1, 84.8, 87.8, (1918)	82.2, 83.3, 84.6, 85.4, 85.5, 86.2.
Medico-Chirurgical College of Philadelphia	.....	(1916)	79
University of Pennsylvania	(1917)	82.7, 87.1, (1918)	83.1, 85.5, 88.4.
Vanderbilt University	.....	(1912)	86
Fort Worth School of Medicine	.....	(1902)	83.6
University of Virginia	.....	(1917)	90.5
Queen's University	.....	(1918)	88.6

Dr. MacAlister also reports that ninety-eight candidates were licensed by reciprocity from Jan. 1 to July 5, 1919. The following colleges were represented:

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of California	(1907)	New York
Yale University	(1912)	New York
Columbia University	(1902)	New York
George Washington University	(1916)	Dist. Colum.
Howard University	(1917, 2)	Dist. Colum.
Kentucky School of Medicine	(1894, 2)	Penna.
University of Louisville	(1915)	Kentucky

Book Notices

INDUSTRIAL MEDICINE AND SURGERY. By Harry E. Mock, B.S., M.D., F.A.C.S., Assistant Professor of Industrial Medicine and Surgery at Rush Medical College. Cloth. Price, \$10 net. Pp. 846, with 210 Illustrations. Philadelphia: W. B. Saunders Company, 1919.

The purpose of this book is to describe modern American efforts and methods directed to maintenance of health, conservation of man-power, and rehabilitation of the disabled in industry. The contents fall in six parts: industrial health service; prevention; industrial medicine; industrial surgery; compensation, insurance, and medicolegal phases; and reconstruction. At the end is a bibliography of the pertinent literature since 1916, but as the references are listed alphabetically according to authors' names the practical value of the bibliography is limited. The author reveals himself in this book as an able and skilful physician and surgeon, a successful administrator of large enterprises, and a forceful propagandist and promoter of the movement to conserve the health and strength of working men and women, and he has provided a useful work for many employers, health workers, and especially physicians attached to industries and concerned with the organization and development of the medical service. Throughout it is the busy executive officer who speaks rather than the careful and thoughtful scholar, and there is no lack of evidence in both text and arrangement of undue haste in preparation and failure carefully to consider relative values. Careful revision with merciless rejection of all unnecessary words and statements—and we were about to add chapters—would increase the value of the book; and it is hoped that the author soon may be called on to prepare a second edition, and that he then may have leisure to do himself more justice than it has been permitted him in the first issue.

TOWARDS RACIAL HEALTH. A Handbook on the Training of Boys and Girls, Parents, Teachers and Social Workers. By Norah H. March, B.Sc., M.R.San.I., with Foreword by J. Arthur Thompson, M.A., LL.D., Professor of Natural History in the University of Aberdeen. New American Edition with an Introduction by Evangeline W. Young, M.D. Cloth. Price, \$2 net. Pp. 320, with illustrations. New York: E. P. Dutton & Company, 1919.

Miss March's book is intended for the instruction of parents, teachers and social workers on sex education rather than for boys and girls. Evidently this subject has not been discussed in England to the extent that it has been in this country. The approach to the subject, as well as the discussion, is much more largely influenced by the biologic point of view than in most of our American books on sex hygiene, nearly a third of the book being devoted to the purely biologic side of sex development and reproduction. Although somewhat conservative, the book is scientifically sound. It is better adapted for the teacher and the parent of education and leisure than for the average reader. The carefully selected bibliography will be of assistance to those desiring to take up a further study of the subject.

OXFORD LOOSE-LEAF MEDICINE. Edited by Henry A. Christian and Sir James Mackenzie. Advance pages, Volume II. Part 1. Paper. New York: Oxford University Press, 1919.

This part contains 115 pages on diseases of the heart, by Sir James Mackenzie, and thirty-four pages on asthma and hay-fever by I. Chandler Walker. Mackenzie's topics are symptoms; heart failure; the examination of the patient; myocardial affections; angina pectoris; exhaustion, palpitation and syncope; the soldier's heart; mechanical aids in examination; modified sounds of the heart; valvular diseases; prognosis, and treatment. It is significant of the change that has come over cardiology that the diseases of the valves are discussed in eleven pages. Not so very many years ago they would have taken a much larger proportion of space. Mackenzie's treatment of all these subjects is in his usual clear style with little citation of authority but with direct, blunt statement of facts based on his wide clinical experience. Walker has an unusually lucid, up-to-date discussion of asthma, concerning the nature of which his extensive researches have made him an expert.

Wisconsin June Examination

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the written and practical examination held at Milwaukee, June 24-26, 1919. The examination covered 18 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 16 candidates examined, 15, including 1 osteopath passed, and 1, an osteopath, failed. Six candidates were licensed by reciprocity. Seventeen candidates were licensed by virtue of a commission in the Medical Corps. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University (1918), 83 (1919)	85, *86, 89.		
Rush Medical College (1919)	*81, *84, 85.		
Washington University (1919)	77, 84, 87.		
Columbia University	(1919)		88
Jefferson Medical College	(1919)		82
Marquette University	(1919)	79, 84	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University	(1909)		Illinois
College of Physicians and Surgeons, Chicago	(1904)		Illinois
Rush Medical College	(1917), (1919)		Illinois
University of Illinois	(1916)		Illinois
University of Louisville	(1915)		Kentucky

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Certificate from
University of Arkansas	(1918)		U. S. Army
College of Physicians and Surgeons, Los Angeles	(1912)		U. S. Army
Bennett Medical College	(1915)		U. S. Army
Chicago College of Medicine and Surgery	(1916), (1917)		U. S. Army
Northwestern University	(1910), (1917)		U. S. Army
Rush Medical College	(1915)		U. S. Army
University of Illinois	(1914)		U. S. Army
St. Louis University	(1910)		U. S. Army
Cleveland College of Physicians and Surgeons	(1905)		U. S. Army
Jefferson Medical College	(1916)		U. S. Army
University of Pennsylvania	(1914, 2)		U. S. Army
Meharry Medical College	(1915)		U. S. Army
University of Virginia	(1916)		U. S. Army
Marquette University	(1917)		U. S. Navy

* Received limited licenses pending completion of their hospital internship.

District of Columbia July Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, July 8-10, 1919. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the eighteen candidates examined, 15 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University (1919)	75.3, 81.5, 81.7, 85.2, 85.7, 86.2, 91.1.		
Howard University	(1918) 75.3, 83.5, (1919)	76.5, 82.1	
Harvard University	(1917)	90.5	
Middlesex College of Medicine and Surgery	(1918)	76.6	
University of Pennsylvania	(1919)	90.2	
University of Tennessee	(1918)	82.2	

College	FAILED	Year Grad.	Per Cent.
Howard University	(1919)	64,	72.2
Columbus Medical College	(1884)	60	

SQUIBB'S MATERIA MEDICA, 1919 EDITION. A Complete Alphabetical List of the Squibb Products, including all the articles of the United States Pharmacopœia (IXth Revision) and of the National Formulary (IVth, 1916, edition), together with the Non-Official Chemicals, Pharmaceutics and Newer Remedies in general use. By the Medical Department, E. R. Squibb & Sons. Cloth. Gratis. Pp. 544. New York: E. R. Squibb & Sons, 1919.

The text gives the official name of the drug, the English name, synonyms, botanic origin, habitat, part of plant used, description, chief constituents, official standards of purity and strength, dose, and list of official preparation, if any. It is to be regretted that the useless or little used drugs, such as cactus, celery, elder flowers, galega and horse-nettle are given the same prominence as those of recognized value. Some of the information concerning the drug constituents cannot be relied on, as it has evidently been compiled from dispensatories or other second-hand sources. For example, the statement is made under Sabal that the drug contains volatile oil. The researches of Mann and Lloyd have shown that the drug contains no volatile oil, although on standing alcoholic preparations may develop an ester which is volatile. The book should be useful to drug analysts, pharmacists and pharmacognocists.

Medicolegal

Death from Glanders Contracted Through Inhalation

(*Richardson v. Greenburg* (N. Y.), 176 N. Y. Supp. 651)

The Supreme Court of New York, Appellate Division, Third Department, holds, in answer to a question certified to it by the state industrial commission, that where an employee was required to lead a horse affected with glanders and during such time contracted the disease through inhalation of the bacteria, and died from the disease fourteen days thereafter, his death was not due to an accidental injury arising out of and in the course of his employment, within the meaning of the workmen's compensation law. The court says that compensation is payable by an employer only "for the disability or death of his employee resulting from an accidental personal injury," and that "injury" and "personal injury" are stated to "mean only accidental injuries arising out of and in the course of employment, and such disease or infection as may naturally and unavoidably result therefrom." The plain meaning of the words of the law, without the aid of judicial interpretation, induces the conclusion that the legislature intended to make compensatory no condition or death resulting from disease, unless the disease itself followed a traumatic injury or other injury not partaking of the nature of a disease. It is a matter of common knowledge that the conditions generally prevailing in cases of infectious disease are caused by poisons or toxins exuded by living organisms or bacteria present within the human body. Glanders cannot be differentiated from other diseases by the fact that ordinarily it is a disease which affects a horse rather than a human being, for it cannot matter whence the bacteria have proceeded which set up disease within the human body.

State Not Liable for Death of Militiaman from Inoculation

(*McAuliffe v. State* (N. Y.), 176 N. Y. Supp. 679)

The Court of Claims of New York, in dismissing a claim for damages for the death of a state militiaman from inoculation with an immunizing vaccine administered at one of the state's armories by a physician in charge of said armory, the vaccine used being alleged to have been impure, or the treatment improperly administered, says that states are not liable in damages for torts or wrongful acts committed by their agents or servants, unless such liability has been voluntarily assumed by act of the legislatures. This rule follows from the maxim of the English common law, "The king can do no wrong," and not alone from the other rule of the English common law that the sovereign cannot be sued without his consent. In organizing the national guard for

the public defense, the state is exercising one of the highest and most important of the attributes of sovereignty and of the functions of government in the interest of the public at large, and under such circumstances it cannot be held liable for the negligence of its agents or servants. Furthermore the state has by statute provided a tribunal and a method for affording relief to those of its soldiers who shall be wounded or incapacitated as a result of illness and for pensioning dependents of such soldier, including his widow, minor children, or dependent mother, in case he shall have died as the result of injuries received or from illness. The state having furnished such tribunal, and submitted such cases to it for its consideration, this court is denied jurisdiction to hear and determine such claims.

Award May Be Commuted When Operation Is Necessary

(*Jensen v. F. W. Woolworth Co.* (N. J.), 106 Atl. R. 808)

The Court of Errors and Appeals of New Jersey affirms a judgment approving of the commutation to the lump sum of \$1,247.25 of an award under the workmen's compensation act of \$1,410 that was payable in instalments of \$5 a week, when an employee had accidentally swallowed pins while assisting in trimming a show window, and a physician testified that there was a pin near the base of her brain and in his opinion an operation would have to be performed to save the woman's life; that she was in need of constant care and attention, and unless she received it, her life could not be saved. The court says that the workmen's compensation act of New Jersey provides that, as commutation is a departure from the normal method of payment, it is to be allowed only when it clearly appears that some unusual circumstances warrant such a departure. But, if to be bedridden, with the requirement of a surgical operation to save the patient's life, is not an unusual circumstance, and such a one as warrants commutation of future weekly payments into a lump sum, to enable the patient to procure the services of a surgeon and the proper medical attention and nursing, it is hard to conceive of circumstances that would call for the making of an order for commutation. Bearing in mind that it is the intention of the act that compensation payments are in lieu of wages, and are to be received by the injured employee in the same manner in which wages are ordinarily paid, that is, instalments; and while commutation is a departure from the normal method of payment, to be allowed only when it clearly appears that some unusual circumstances warrant it, the court thinks those circumstances were present in the case under consideration, namely, that the life of the employee appeared to be at stake, and that, at least in all probability, it could be saved only by a surgical operation, by the attendance of a physician, by nursing, and by medicines, all of which would require the expenditure of moneys, which the patient did not possess and could not raise. Nor was commutation in these circumstances to be defeated by the concluding provision of the statute that it shall not be made to enable the employee to satisfy a debt, or to make payment to physicians, lawyers or other persons.

Employer Not Liable for Negligence of Physician

(*Smith v. Buckeye Cotton Oil Co.* (Ark.), 212 S. W. R. 88)

The Supreme Court of Arkansas affirms a judgment on a verdict directed in favor of the defendant in this case where the plaintiff alleged that while he was employed by the defendant he had his fingers crushed, and was directed to go to a physician employed by the defendant to treat its injured employees, and that this physician treated his injuries so carelessly and negligently that the amputation of all the fingers on the injured hand became necessary. The court says that the testimony in the case appeared to have been addressed to the proposition that the physician was negligent, and that the defendant was liable for this negligence because it directed the plaintiff to consult him. There was no intimation in the pleadings that the defendant was negligent in selecting a physician, nor was there any testimony to that effect unless it was by inference that the defendant was negligent through having employed a negligent

physician. The court had a case, therefore, in which the pleadings and proof showed only that an injured employee was directed to, and placed in charge of, a physician who was guilty of negligence in his treatment of the case. But this allegation and this proof did not make a case for the jury. Where the employer owes his employee the duty of furnishing medical attention, or undertakes to discharge that duty, he does not become liable for the physician's negligence or lack of skill, but is liable only when he fails in the discharge of his duty to exercise ordinary care to select a physician possessing the requisite skill and learning and one who would give the patient the attention and treatment which the case requires.

Ordering Physical Examination Partly Discretionary

(*Titus v. City of Montesano (Wash.)*, 181 Pac. R. 43)

The Supreme Court of Washington holds that there was no error in this personal injury case in denying the defendant's motion for an order directing the plaintiff to submit to a medical examination for the purpose of determining the extent of her alleged injury and for the purpose of qualifying the witnesses of the defendant to give testimony in the cause. The court says that the statute of that state relating to such examinations provides that, on or before the trial of any action brought to recover damages for injury to the person, the court before which such action is pending may from time to time, on application of any party therein, order and direct an examination of the person injured as to the injury complained of by a competent physician or physicians, surgeon or surgeons, in order to qualify the person or persons making the examination to testify in such case as to the extent, nature and probable duration of the injury complained of. This statute is not mandatory. It provides that the court "may . . . order and direct" a physical examination, and leaves something to the discretion of the court. When the motion was made in this instance, no issue had been framed as to the extent of the plaintiff's injuries, and no showing as to the necessity for such an examination accompanied the motion. It was not the purpose of the statute needlessly to harass a litigant, and, unless it is shown that some necessity exists for the examination at the time the application is made, the appellate court cannot say it is an abuse of discretion to deny it.

Testifying Indirectly to Privileged Communications

(*McGinty v. Brotherhood of Railway Trainmen (Wis.)*, 172 N. W. R. 714)

The Supreme Court of Wisconsin holds, in this action brought by a mother on a policy of insurance issued on the life of her son after he had stated in his application for the insurance that his father had never had any cancerous disease, that there was no error in refusing to permit a physician to testify that he told the mother, at the time of his professional visit, that her husband had cancer. The court says that the mother had been examined adversely, and testified that the physician did not make such statement to her. A portion of the physician's deposition was then offered in evidence to show that he had made such statement. The trial court excluded the testimony, and the supreme court sees no theory on which the testimony could be received. It certainly could not be probative evidence of the fact that the father in fact had cancer. The physician could not testify to that fact. His knowledge in that respect constituted a confidential communication which the statute prohibited him to reveal. The confidential nature of the communication could not be waived by any one except the father himself. The privilege of the statute would not amount to very much if the physician were permitted to testify in this indirect manner to facts concerning which he could not give direct testimony. The testimony clearly was not admissible. A waiver by the insured of the privilege so far as confidential communications between himself and another physician were concerned did not extend to confidential communications between his father and his father's physicians.

Society Proceedings

SOUTHERN SURGICAL ASSOCIATION

Thirty-Second Annual Meeting, held in New Orleans, Dec. 16-18, 1919

The President, DR. JAMES E. THOMPSON, Galveston, Texas, in the Chair

Injection of the Gasserian Ganglion for Neuralgia and Other Conditions

DR. CARROLL W. ALLEN, New Orleans: The proper execution of the technic of this injection demands a thorough knowledge of the anatomy of the parts involved, and of the effects of injected alcohol on these parts. The method most commonly used and the one practiced by me almost exclusively is the Haertel route. It has been found that chromium sulphate exerts a curative influence on the keratitis which sometimes follows these injections. Accordingly, I have in all recent cases been giving a 4-grain tablet of this salt, three times daily, as a prophylactic, advising its use for about one month. In my last twelve cases there has been no evidence of eye inflammation. From my experience, I am convinced that when the value of these injections for these conditions are recognized they will be used extensively.

Gunshot Wounds of Brain with Retained Missiles

DR. CHARLES BAGLEY, JR., Baltimore: During the spring and summer of 1918, 175 cases of gunshot wounds of the skull and brain were studied at General Hospital No. 2, Baltimore. Removal of the foreign bodies was undertaken because of the presence or probability of infection. I am of the opinion that because of the likelihood of metallic foreign bodies of average size giving trouble even several months after the injury, they should be removed, if their removal does not offer too great difficulties. However, a metallic foreign body may remain encapsulated in the brain substance without giving trouble.

Spermatoceles and Hydroceles Containing Spermatozoa

DR. RANDOLPH WINSLOW, Baltimore: The occurrence of six cases of hydrocele containing spermatozoa, and of one of true spermatocele associated with a hydrocele in the course of a few months, has directed my attention to this condition. In the cases of which I have notes, no mention is made of an injury, except in one instance. I think it probable that in some cases, at least, true spermatoceles rupture into hydroceles and in that manner permit the ingress of spermatozoa into the sac of the tunica vaginalis. In one case there was a hydrocele with clear contents; and contiguous to but not communicating with it was another cyst containing a milky looking fluid, which showed spermatozoa when examined microscopically. This cyst might have ruptured into the hydrocele if it had remained unoperated on. The treatment of true spermatocele is usually excision, while that of the hydrocele containing spermatozoa is similar to that of ordinary hydroceles, namely, excision of the tunica vaginalis, or suturing the tunica behind the testicle, or Andrew's bottle operation, etc., and the results appear to be equally as good as in cases of uncomplicated hydroceles.

Hypodermoclysis

DR. WILLARD BARTLETT, St. Louis: When continuous hypodermoclysis is used, the visible dropper and screw clamp are added. An attempt is made to get gravity pressure by placing the container directly above the patient. As to the fluid employed, Dr. McKittrick proposed that we use plain, freshly distilled water. In view of the large amounts of fluid instilled, and the harmful effects which occasionally follow the absorption of abnormal amounts of sodium chlorid, we do not countenance its use, especially in patients already weakened by disease or surgical trauma. The water is heated to between 100 and 110 F. and is then poured into the warm container. The injection is made at a point near the outer border of the pectoral muscles, midway between the nipple and the head of the humerus. By this method, the fluid extends directly into the subcutaneous tissue of both the axilla and the breast. Absorption is almost twice as fast as

it is when the injection is under the breast alone. Only the one side is used at a time, regardless of the amount of fluid to be infused. Usually from 800 to 1,200 c.c. are given during one injection, though a much larger amount can be given if it is allowed to run in slowly. The giving of hypodermoclysis is easily accomplished without pain or distress in most patients not under the influence of a narcotic. The procedure has completely supplanted the rectal administration in my service, and when intelligently applied, seems not to have unduly disturbed the patient, has never been attended by an accident, and has given the greatest satisfaction.

Pseudomyxoma Peritonei

DR. M. H. BIGGS, Rutherfordton, N. C.: This condition is much more frequent than is generally recognized. It is caused by cellular implantation. It is histologically benign, but may be clinically malignant. If it is considered to be a form of cancer, it must be assumed that pseudomucin inhibits its destructive power. It may originate in the ovary or the intestinal tract, ovarian origin being by far the most frequent. If it is appendical in origin, the appendix has been the seat of chronic inflammation. Early invasion of the peritoneum is characterized by a pebbly appearance. In early cases the condition will sometimes be cured, and at any stage it may be inhibited, by operation.

Pseudomyxoma Peritonei in Male Subjects

DR. M. G. SEELIG, St. Louis: The characterizing feature of the disease is the accumulation of a colloid exudate in the peritoneal cavity, varying in consistency from a syrup to solid colloid masses. In some instances there is a progressive cachexia leading to death; in others the disease runs a benign course with perfect recovery after suitable operative procedure and often doubtlessly without operation. In some cases the colloid material is confined in loculi whose walls are made up of a connective tissue new growth so firm and abundant that it fuses all the viscera into a solid mass, molded, as it were, into the peritoneal cavity. The appendix is the sole responsible agent for the disease as we encounter it in the male. Treatment consists in removing the primary focus of disease—the appendix—and scooping out that portion of the exudate which can be reached conveniently and with safety, without any attempt to clear the abdominal cavity of its entire pseudomucinous contents.

A Warning Against Promiscuous Uterine Curettage

DR. J. WESLEY BOVÉE, Washington, D. C.: It is well to point out the many dangers incident to uterine curettage. Not infrequently is a pregnancy in its first month thus scraped from the uterus and perhaps never recognized. Certainly humiliation has often come to the operator by discovering during curettage that an unsuspected pregnancy has been interrupted. Very often pregnancy has unnecessarily been ended by curettage for incomplete abortion. The literature teems with reports of cases of perforation of the uterus by the curet with or without dangerous sequels and even death. The cervical canal is so constantly infected that it does not seem strange that infection may be carried from it into the uterine cavity by the curet, sound or dilator. Again, it is shown by Curtis that infection of the endometrium is nearly always associated with similar infection of the tubes and most often gonorrheal. Curettement under such conditions is strongly contraindicated. The dangers from curetting are ever present. If chronic endometritis as a clinical entity is to be ruled out, one potent indication for curettage in the past will be removed.

Operative Treatment of Pelvic Inflammation

DR. CHARLES R. ROBBINS, Richmond, Va.: Pelvic inflammation is most frequently due to one of two causes: gonorrhea or infections following abortion or labor at term. Operation in gonorrheal cases may be performed with comparative safety at any stage, but radical operation in the septicemic group, in the acute stage, is attended by a high mortality and should not be done. Delay in operation on the septicemic group is an advantage, is less dangerous, and often results in symptomatic or absolute cure. The best method of treatment is that usually known as the Fowler-Ochsner-

Murphy treatment. The details of operation on which emphasis is laid are the complete removal of the tube, excising also the uterine portion, and the attachment of the broad ligament to the horn of the uterus, thereby elevating the ovary away from pressure and adhesions and the temporary suspension of the uterus.

Stone in the Kidney

DR. CHARLES H. MAYO, Rochester, Minn.: Stones form in the cortex, in the calices, and in the pelvis of the kidney. The kidney is constantly eliminating living bacteria, so that it is always exposed to infection, and usually shows no results from it except gross lesions of rare occurrence. Stone formation may proceed with exceeding slowness, and without pain or other symptoms until marked destruction of the kidney occurs, mixed infection develops, or until the stone assumes great size or becomes loosened and moves into the ureter. If the stone originates in the cortex of the kidney, its growth will be slow; but if it originates in the calices or pelvis, growth may be much more rapid because of the ease with which its chemical material is secured.

Results of Operations for the Removal of Stones from the Ureter

DR. E. S. JUDD, Rochester, Minn.: Stones in the ureter may pass voluntarily into the bladder. In my experience 12 per cent. of a group of 400 persons have admitted the passing of stones. Stones may be lodged in the ureter and produce no symptoms, and again they may produce the classic syndrome of ureteral calculus. There are two methods of treatment: the nonoperative and the operative. The first method consists in the dislodging of the stone by a ureteral catheter or small sound. The kidney should not be removed unless extensively infected, as it may recover its function. Conservative methods are justified in any case of chronic kidney infection, while radical methods must be employed in acute, severe infections. Nephrectomy is the operation of choice. Dr. Braasch has removed ureteral stones in about 126 cases by nonoperative methods. During the same period, 400 patients were operated on; about half the patients require operation to rid them of stone. Two deaths occurred in the series of 400 cases, only one of which was directly due to the operation.

Uretero-Ureteral Anastomosis

DR. REUBEN PETERSON, Ann Arbor, Mich.: Ureteral Anastomosis is a perfectly feasible procedure. Not only can the duct be made patent with little or no stricture, but a functioning kidney and ureter can result. In skilled hands, the primary mortality should be very small. The invagination methods are preferable to the transverse end-to-end method, since they are followed by fewer cases of leakage. The end-in-end method of anastomosis is the operation of choice. It is extremely simple, and sacrifices the minimum amount of the ureter.

Sarcoma of Stomach

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: Primary gastric sarcoma is one of the rarest surgical diseases. A certain diagnosis of sarcoma of the stomach before operation is practically impossible. Only an operative diagnosis is possible. Hemorrhage from the stomach and blood in the stools are a frequent occurrence, especially in the round cell variety, although in sarcoma it is not so frequent as in cancer. Early exploration should be invoked.

Gastro-Enterostomy Following Rammstedt Operation Which Failed to Relieve the Obstruction

DR. FRANK D. SMYTHE, Memphis, Tenn.: Posterior gastro-enterostomy should be performed as a last resort in cases in which a Rammstedt operation has failed to relieve the obstruction. An otherwise hopeless case may be saved thereby, as in my case. The second operation was done seventy-six hours after the first.

Ileostomy for Postoperative Obstruction Following Appendectomy

DR. EDWARD P. RICHARDSON, Boston: I have to report seven cases of obstruction occurring during convalescence from

pendicitis. In five of these, ileostomy was done for obstruction apparently mechanical in nature. Four of these patients were children. Recovery with spontaneous closure of the fistula occurred, the patients remaining well for from one to eight years. These results suggest that ileostomy is a more favorable method of treatment in obstruction by recent adhesions than in other types of obstruction. Good results depend on the operation being undertaken early, and it is better to operate unnecessarily occasionally than to postpone operation until the later stages of obstruction have developed.

Surgical Drainage from a Biologic Standpoint

DR. J. SHELTON HORSLEY, Richmond, Va.: Drainage from the abdominal cavity is practically always uphill, and yet it is successful because the drainage material not only relieves the pressure, but also provokes the outpouring of large quantities of lymph in an effort to extrude the drainage material, and this serum carries along with it products of bacterial infection that might otherwise be absorbed. In solid soft tissue, as in the thigh, the lymph supply is not so abundant, and consequently gravity drainage must be used. In the abdomen, the supply of lymph is so abundant and its pouring is so constant along the drainage tract it makes little difference whether the drainage tube is pointed up or down, as long as it is of sufficient size and of the proper kind of material to provoke the outpouring of serum. Drainage should be instituted after every radical operation for cancer of the breast or neck, as it tends to prevent the absorption of cancer cells that may be left in the wound. Drainage of infected epithelial lined hollow viscera carries off the inflammatory products, affords physiologic rest, and also produces a reversal of the circulation of the local lymphatics that will prevent the absorption of much of the septic products. Drainage material should be selected with a view to inducing a reversed flow of lymph to carry away the liquid products of the wound, and also with a view to injuring the wound as little as possible. Ideal drainage material has not been found, but empirically combinations of gauze and rubber glue have been worked out that are fairly satisfactory.

Carrel-Dakin Treatment of Infected Wounds

DR. E. DUNBAR NEWELL, Chattanooga, Tenn.: It was most universally observed in the hospitals of the American Expeditionary Forces that patients whose infected wounds had been properly treated by the Carrel-Dakin method suffered less pain, had less systemic infection, were more alert and cheerful, had a more rapid convalescence, and the wounds closed far earlier and with less deformity and less morbidity than in those patients whose infected wounds were treated by other methods.

Results and Feasibility of Treating Lymphangiomas with Injections of Boiling Water

DR. FRANCIS REDER, St. Louis: So far eight patients have been injected with boiling water. The reaction following the injection seemed unusually severe when compared with the reaction following the injection of a hemangioma. For twenty-four hours the patient gave evidence of feeling sick, usually registered a temperature of 100 or 101 F. with pulse from 100 to 110. When the reaction had passed off, which was generally after the third day, the feeling of euphoria returned. The increase in the size of the tumor after the injection, although considerable, bore a minor ratio to the increase seen in hemangiomas after injection. Inflammatory processes seemed active and prolonged, the skin giving evidence of the severity by a marked reddish discoloration. Retrogression seemed very slow. It required from four to six months to show that the tumor had decreased in size. In the case of a baby with the left foot about four times its normal size, it required two years for the foot to attain the size to be fitted with a shoe. Subsequent injections are almost impossible to be given, if the initial injection has been a thorough one. The tumor mass is so hard that no water can be forced into it. All of the eight patients treated with boiling water have been benefited, but in none of them the tumor entirely disappeared.

Some Plastic Operations on the Rectum

DR. HARVEY B. STONE, Baltimore: In certain special types of stricture of the rectum, an application of the principle of the Heineke-Mikulicz pyloroplasty is helpful. These strictures are of the diaphragm type; that is, firm, with small lumen, but narrow and annular in their involvement of the long axis of the bowel. In tubular strictures of the rectum, occurring in the lower 4 inches of the bowel in multiparous women, the utilization of part of the voluminous vaginal mucosa as a transplant into the rectum has been tried. This has been done only when long continued dilatations have failed to give relief, and when the Wassermann test has been for a long time negative. The advantages of this operation are direct closure of the urethral orifice, the complete removal of the fistulous area of the rectum, the interposition of perineal structures between rectum and urethra, and the temporary diversion of the urine. It has proved very successful in practice.

Autogenous Bone Grafting for Repair in Fractures of Long Bones

DR. FRANK MARTIN, Baltimore: The chief factors for successful bone grafting are perfect aseptic technic; avoidance of mechanical injury or trauma to the graft; scrupulous avoidance of traumatizing tissues; definite and firm fixation of the graft, and the allowing of a long interval to elapse after complete healing of the wound. Grafts will not remain viable when there is infection. There should be perfect hemostasis.

Oxycephaly

DR. STEPHEN H. WATTS, Charlottesville, Va.: It is only in recent years that operative measures have been undertaken with the object of combating the symptoms of increased intracranial pressure, especially the threatened blindness. Since most observers think that this increased pressure is due to the disproportionate growth of the brain and skull, decompression seems to be the operation of choice; moreover, it has the advantage of simplicity and relative safety. It should be done early, for in cases with irreparable optic atrophy and no other pressure symptoms, operation is not indicated. The results of this operation in the small number of cases in which it has been done are distinctly encouraging, in spite of the fact that the optic atrophy was rather advanced in most instances. The patient on whom I did a bilateral subtemporal decompression was seen about two years after this operation. His general condition was much better, and he seemed to see better, as he stumbled much less in walking. He could count fingers at 3 feet, which he could not do before operation. Examination of the eye grounds, however, detected practically no change, there being a marked optic atrophy in both eyes. An interesting feature of this case is that at operation the bulging of the brain was so marked that the temporal fascia could not be at all approximated on either side; therefore the defects were covered by transplanted patches of fascia lata. Another point of interest is the ossification of the tissues over the region of the decompression, this bone showing the same digital impressions as the rest of the skull.

An Efficient Treatment for Carbuncle

DR. A. C. SCOTT, Temple, Texas: By strong traction the mass is lifted out of its bed while the cautery sweeps back and forth between it and the cellular tissue below or skins along the fascia covering the muscle beneath or penetrating the muscle, if necessary, until the entire mass is free. If any vessels spurt freely or fail to close when the cautery is held in contact with them a few seconds, they should be ligated. Any doubtful places beneath the remaining skin margins should be explored by the cautery tip. If the emission of steam is noted, the cautery should be applied until the cavity is apparently dry. Such a wound is now sterile and may be handled as any sterile burn. As soon as all burned tissue has been cleared away, perforated skin grafts sufficient to cover the granular surface soon complete the cure. The period of convalescence appears to be 50 per cent. less than by the old methods of treatment.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

January, 1920, **19**, No. 1

- *Study of Achondroplasia. T. F. Wheeldon, Richmond, Va.—p. 1.
- *Food Value of Milk of Water Buffalo. W. W. Cadbury, Canton, China.—p. 38.
- *Dextrose Tolerance in Atrophic Infants. P. M. Mattill, K. M. Mayer, and L. W. Sauci, Chicago.—p. 42.
- *Case of Hypersensitiveness to Cow's Milk. E. A. Park, Baltimore.—p. 46.
- Anomaly of Diaphragm, with Herniation into Thorax of Certain Viscera Resulting in Gastric and Intestinal Obstruction. L. R. DeBuys, New Orleans.—p. 55.

Achondroplasia.—Wheeldon reviews the literature and reports six cases. Two show a new symptom, a wedge-shaped vertebra, which falls in the group of symptoms of infolding, and which, Wheeldon says, fortifies the belief that achondroplasia is produced by the smallness of the amnion.

Milk of Water Buffalo.—Cadbury shows that the milk of the water buffalo is a valuable dairy product and contains on an average 12.6 per cent. of fat. This milk can easily be modified for infant's use, as is shown by a table of formulas.

Dextrose Tolerance.—The dextrose (glucose) tolerance of the approximately normal infant, as determined by the Woodyatt method, is very likely identical with that of the normal adult, which is 0.8 to 0.9 gm. per kilogram per hour. But the tolerance of atrophic infants for dextrose is considerably greater: it varied in the authors' seven cases from 1.4 or 1.5 gm. to 1.8 gm. per kilogram per hour.

Hypersensitiveness to Cow's Milk.—Park reports the existence of hypersensitiveness to cow's milk in an infant 6 weeks old who had never been known to receive cow's milk previously, so that it seems necessary to regard the condition as prenatal in origin. The possibility that the hypersensitiveness was derived passively from the mother was excluded by its duration. In the absence of evidence that the peculiarity was acquired, it must be regarded as having been inherent in the germ plasma. Attempts at desensitization were successful.

American Journal of Insanity, Baltimore

October, 1919, **76**, No. 2

- Cross Sections of Mental Hygiene, 1844, 1869, 1894. E. E. Southard, Boston.—p. 91.
- Establishment of a National Institute of Neurology. H. Cushing, Boston.—p. 113.
- Classification of Nervous and Mental Diseases. S. T. Orton, Philadelphia.—p. 131.
- Rehabilitation in Nervous and Mental Cases Among Ex-Soldiers. C. B. Farrar, Canada.—p. 145.
- Chemical Analyses of Two Pathologic Human Brains. C. G. MacArthur and E. A. Doisy, Palo Alto, Calif.—p. 159.

American Journal of Medical Sciences, Philadelphia

December, 1919, **158**, No. 6

- Medical Aspects of Reconstruction. W. S. Thayer, Baltimore.—p. 765.
- Cardiac Diagnosis in Light of Experiences with Army Physical Examinations. L. A. Conner, New York.—p. 773.
- *Case of Rupture of Aortic Aneurysm into Left Innominate Vein. J. B. Herrick, Chicago.—p. 782.
- *Clinical Significance of Postural Changes in Blood Pressures and Secondary Waves of Arterial Blood Pressure. H. Sewall, Denver.—p. 786.
- *Vital Capacity of Lungs and Carbon Dioxid Combining Capacity of Blood in Cases of "Effort Syndrome." F. D. Adams, Washington, D. C., and C. C. Sturgis, Pendleton, Ore.—p. 816.
- *Studies of Cases of "Effort Syndrome" with Measured Work. T. M. Mabon, Pittsburgh.—p. 818.
- *Position of Arm in Blood Pressure Measurements. M. H. Kahn, New York.—p. 823.
- *Functional Diagnosis of Polyglandular Disease in Acromegaly and Other Disturbances of Hypophysis. Report of Cases. C. P. Howard, Iowa City, Iowa.—p. 830.
- *Problem of Nutrition and a Satisfactory Method of Feeding in High Intestinal Fistulas. M. M. Peet, Ann Arbor, Mich.—p. 839.
- Later Stages of So-Called War Nephritis. T. Howard and A. F. Robertson, U. S. Army.—p. 845.
- Lethargic Encephalitis in the A. E. F. A. Skversky, New York.—p. 849.
- Significance of Certain Pulmonary Lesions in Relation to Etiology of Influenza. E. W. Goodpasture, Boston.—p. 863.
- Roentgenologic Determination of Pulmonary Tuberculosis. F. E. Diemer and I. H. Cramer, Portland, Ore.—p. 871.

Rupture of Aortic Aneurysm.—In Herrick's case the rupture was less than 1 cm. from the superior vena cava. The opening was 1.5 cm. in diameter. A typical syphilitic aortitis was present. Herrick discusses the clinical history and reviews the literature.

Postural Changes in Blood Pressures.—Sewall analyzes much material to demonstrate anew the clinical importance of tests to determine the quantitative range as contrasted with the qualitative perversion of physiologic functions. It is suggested that estimations should be made under different conditions of the velocity of the blood current, as represented by the product obtained in multiplying the pulse pressure by the pulse rate. Attention is called to the great frequency with which, in persons suffering from weakness of the circulation, the pulse sounds revealed by the auscultatory method are enfeebled or absent.

Lungs and Blood in Effort Syndrome.—Neither the number of cases found nor the degree of decrease of vital capacity present in the series studied by Adams and Sturgis is sufficient to indicate that the tendency to dyspnea in these patients is in any way dependent on a diminished vital capacity of the lungs. Tests of general muscular strength showed no relation between the muscular development and the vital capacity of the lungs. Observations were made in fifty-four cases, and from the carbon dioxid chemically bound as bicarbonate was found to fall within normal limits in all instances. Since, therefore, the carbon dioxid combining capacity of the blood is normal, there is no indication that a decrease in the buffer salts of the blood is a factor in the production of dyspnea in patients with "irritable heart."

Effort Syndrome with Measured Work.—A study was undertaken by Mabon of the changes in pulse rate and blood pressure taking place in fifty patients with "effort syndrome" after the hardest exercise which they could be induced to perform. These were, for the most part, patients with symptoms of many years' duration. The amount of work which they could do before becoming fatigued was much less than was done by normal controls. The pulse rate at rest was higher than in the normals, but the rise after exercise and the time for return of the pulse rate to its resting value were not definitely abnormal. No "delayed rise" of blood pressure, suggesting myocardial inefficiency, was observed. The amount of work which the subjects were able to perform usually corresponded closely to their physical strength, as determined by tests of the skeletal muscles, and this, Mabon says, indicates that lack of development of the skeletal muscular system is a factor to be considered in the cause of the fatigue following slight exertion in certain types of cases of "effort syndrome."

Arm in Blood Pressure Measurements.—Tests were made by Kahn to note the effect of raising the arm on auscultatory blood pressure readings. The normal effect is a progressive fall of the systolic and diastolic pressure readings as the arm is raised upward; the amount of fall increases with the elevation. Therefore, blood pressure readings should be obtained with the patient's arm at the side of his chest, as the normal reading varies considerably with the arm in different positions. This holds good for the seated, the standing and the recumbent postures.

Polyglandular Disease in Acromegaly.—From an analysis made by Howard of six cases it is evident that a secondary hyperpituitarism may result from a greatly or rapidly increasing intracranial pressure. The determination of a decrease in the sugar tolerance in the presence of other symptoms of disturbance of pituitary function justifies a diagnosis of increased activity of the pars intermedia. The epinephrin conjunctival test may be of positive value in certain cases of dyspituitarism in demonstrating a hypofunction of the chromaffin system. The subcutaneous epinephrin test was only of doubtful value in both normal and pathologic cases. Both the conjunctival and subcutaneous pituitary extract tests were too equivocal to be depended on for studying the functional activity of the hypophysis. The internal administration of the pituitary extract of either the whole gland or the anterior or the posterior lobes appears to exert no definite influence on the symptomatology of the disease.

Nutrition and Feeding in Intestinal Fistulas.—The problem of nutrition in high intestinal fistulas is solved by Peet by the enteric administration of foodstuffs through a small, soft tube, inserted by way of the fistula into the efferent loop. By this method sufficient calories are utilized to maintain good, physical condition and to build up an emaciated patient, so that he can withstand necessary operative treatment.

American Journal of Public Health, Concord, N. H.

December, 1919, 9, No. 12

Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 907.
Administrative Measures Against Influenza. A. W. Freeman, Columbus, Ohio.—p. 919.
American Red Cross Health Crusade. After Effects of Influenza in Cincinnati. W. H. Peters, Cincinnati.—p. 924.
Public Health Perspective. L. L. Lumsden, U. S. P. H. Service.—p. 930.
Need and Method of Coordinating Federal, State and Local Health Agencies in Promoting Industrial Hygiene. J. W. Schereschewsky, Washington, D. C.—p. 937.
Public Health Work in India. II. Review of Nature and Progress of Sanitation. H. J. Jenks, Berkeley, Calif.—p. 943.
Public Health Departments and Private Health Agencies. C. E. McCombs, New York.—p. 951.
Standard System of Bacteriologic Dilutions. W. F. Wells, Boston.—p. 956.
Influenza in Framingham, Mass. D. B. Armstrong, Framingham.—p. 960.

Annals of Surgery, Philadelphia

January, 1920, 71, No. 1

Surgical Problems in Reconstruction of Peripheral Nerve Injuries. C. H. Frazier, Philadelphia.—p. 1.
Lymphosarcoma of Mesentery. L. L. Bigelow and J. Forman, Columbus, Ohio.—p. 11.
Recurrent Nephrolithiasis. Report of Case. O. F. Lamson, Seattle.—p. 16.
Four-Glass Bladder: Resection of Base of Bladder for Transverse Septums. J. R. Caulk, St. Louis.—p. 22.
Elephantiasis and Kondoleon Operation. Report of Case. T. M. Green, Wilmington, N. C.—p. 28.
Studies in Bone Growth. F. H. Albee, New York, and H. F. Morrison, U. S. Army.—p. 32.
Causes of Delayed Union and Nonunion in Fractures of Long Bones. V. L. Estes Jr., Bethlehem, Pa.—p. 40.
Treatment of Bone Cavities. W. Martin, New York.—p. 47.
Reduction Treatment of Central Luxation of Femur. Report of Cases. R. Whitman, New York.—p. 62.
Gunshot Fractures of Tibia and Fibula. F. Christopher, Chicago.—p. 66.
Rapid Closure of Surgical Wounds, Specially of Laparotomies. A. L. Boresi, New York.—p. 84.

Lymphosarcoma of Mesentery.—The case presented by Bigelow and Forman adds one to the few cases of mesenteric sarcoma on record and the long list of sarcomas in other regions where the onset of the symptoms and the development of a tumor have followed a definite history of trauma. The patient suffered from abdominal "cramps" for several weeks before the "lump" was noticed. The case conforms to the established picture of a regional lymphosarcoma. The size of the mesenteric mass, as compared with the involved retroperitoneal nodes, leaves little doubt that the tumor arose in the mesentery.

Recurrent Nephrolithiasis.—Thorough flushing of the urinary channels through drinking freely of water, preferably distilled water, Lamson says, may help in the dislodgment and removal of any possible nucleus of future stones. His treatment must be continued for a considerable period after the urine has completely cleared up. Faulty or incomplete surgery, by leaving in the pelvis fragments of stones, may contribute toward a recurrence of nephrolithiasis.

Four-Glass Bladder.—Caulk emphasizes the importance of mobilization of the bladder before resection; the value of ureter catheter drainage in bladder resection; the need of complete removal of such transverse partitions and not porporizing with mere slit operations; the importance of local spasm in the neighborhood of inflammatory areas, and the protective value to a kidney of removing causes of local spasm in the presence of a patent ureteral vesical valve.

Treatment of Bone Cavities.—When the removal of sufficient portions of the wall of the cavity to allow the soft parts to fall in and fill it up is impracticable, as in certain abscesses and cavities near joints, some form of plugging is

indicated. Of the many materials used as plugs Martin favors the free fat transplants.

Archives of Neurology and Psychiatry, Chicago

January, 1920, 3, No. 1

***Histopathology of Brain and Spinal Cord in Case Presenting a Post-influenzal Lethargic Encephalitis Syndrome.** H. A. Calhoun, Iowa City, Ia.—p. 1.
***Effects of Gunshot Wounds of Head. Based on Two Hundred Cases.** C. H. Frazier and S. D. Ingham, Philadelphia.—p. 17.
***Comparison of Anterior Horn Cells in Normal Spinal Cord and After Amputation.** A. E. Taft, Philadelphia.—p. 41.
Nonconcomitance of Spinal Fluid Tests. H. C. Solomon, Boston.—p. 49.
Influenza Psychoses in Successive Epidemics. K. A. Menninger, Topeka, Kan.—p. 57.
Résumé of Neurologic and Psychiatric Observations in a Hospital Center in France. J. W. Stephenson, New York.—p. 61.

Lethargic Encephalitis.—The case reported by Calhoun belongs to the new epidemic encephalitis group. The pathology is an acute infiltrative encephalomyelitis, the most marked changes occurring about the blood vessels of the thalamus, the cranial nerve nuclei, the floor of the fourth ventricle and in the white substance of the spinal cord.

Gunshot Wounds of Head.—The conditions in which Frazier and Ingham believe operation for cranial defects is indicated are: 1. For cosmetic reasons, especially when the defect is in the frontal region below the hair line. 2. In certain selected cases of epilepsy. 3. In the presence of a large defect where the brain is exposed to trauma. 4. When the patient is apprehensive, because of the defect and he dreads the possibility of a direct blow on the uncovered cortex. 5. In a few cases where the symptoms are wholly subjective an operation is advisable in the hope that, combined with the influence of suggestion, the neurosis will be relieved. Under these indications the authors have operated in fifty-nine out of 153 cases of cranial defects.

Studies on Anterior Horn Cells.—Cell counts were made by Taft on the anterior horns of the spinal cord in twenty-eight cases. Three of these were cases following amputation of an extremity. The twenty-five additional cases were said not to have had signs of a cord lesions. Variations in the counts between the two sides in the amputated cases was not more than two or three cells in the final average. In two of these, the greater number was on the side corresponding to the amputation. Variations in the counts between the two sides in the cases without amputation was at times greater than with amputation. In the sections where identification was made of the right and left sides, there appears no uniform difference between the two corresponding counts.

Boston Medical and Surgical Journal

Dec. 25, 1919, 181, No. 26

Vaccines in Influenza. W. H. Watters, Boston.—p. 727.
***Primary Sarcoma of Stomach.** A. R. Kimpton, Boston.—p. 731.
Functional Heart Disturbances in Women. F. L. Meredith, New York.—p. 734.
Enlarged Thymus Gland in Infancy and Its Treatment by Radium. H. W. Brayton and A. C. Heublein, Hartford, Conn.—p. 740.

Jan. 1, 1920, 182, No. 1

"Flat Foot" and other Static Foot Troubles. F. J. Cotton, Boston.—p. 1.
Frequency of Urination. F. D. Davis, Springfield, Mass.—p. 11.

Primary Sarcoma of Stomach.—Kimpton reports the case of a patient who is alive and perfectly well, with no evidence of return of the sarcoma five years and ten months after an extensive resection of the stomach for a very rapidly growing sarcoma of the round cell type. She is able to drive, oil and grease, and even change the tires of her own car.

Canadian Medical Association Journal, Toronto

December, 1919, 9, No. 12

Mental Hygiene in Relation to Social Hygiene. A. H. Desloges, Montreal.—p. 1057.
Multiple Infarcts of Spleen in Malignant Endocarditis. Rupture of Spleen and Peritonitis. A. Vallee, Quebec.—p. 1064.
Practical Aspects of Quarantine for Influenza. T. H. Whitelaw, Alberta.—p. 1070.
Treatment of Influenza. F. H. Wetmore, Hampton, N. B.—p. 1075.
Mental Tests in Practice. A. G. Morphy, Montreal.—p. 1081.
Perforating Gunshot Wound of Face with Extensive Destruction of Superior Maxillas. J. N. Roy, Montreal.—p. 1088.

Mental Excitement in Psychopathic Hospital; Its Prevention and Care. E. Mills.—p. 1101.

Bacillus Coli Infection of Kidney. P. Weatherbe, Halifax, N. S.—p. 1107.

Iowa State Medical Society Journal, Des Moines

Dec. 15, 1919, 9, No. 12

Roentgenotherapy and Radium in Surgery. F. L. Nelson, Ottumwa.—p. 400.

Laboratory Service of Divisional Laboratories. L. A. Fritze.—p. 403.

Journal of Experimental Medicine, Baltimore

Jan. 1, 1919, 31, No. 1

*Lymphocyte in Natural and Induced Resistance to Transplanted Cancer. V. Histologic Study of Lymphoid Tissue of Mice with Induced Immunity to Transplanted Cancer. J. B. Murphy and W. Nakahara, New York.—p. 1.

Studies on Roentgen-Ray Effects. V. Effect of Small Doses of Roentgen Ray of Low Penetration on Lymphoid Tissue of Mice. W. Nakahara and J. B. Murphy, New York.—p. 13.

*Toxins and Antitoxins of B. Dysenteriae, Shiga. P. K. Olitsky and I. J. Kligler, New York.—p. 19.

Cultural Differentiation of Beta Hemolytic Streptococci of Human and Bovine Origin. J. H. Brown, Princeton, N. J.—p. 35.

*Dairy Infection with Streptococcus Epidemicus. J. H. Brown and M. L. Orcutt, Princeton, N. J.—p. 49.

Effects of Intravenous Injections of Dichlorethylsulfide in Rabbits, with Special Reference to Its Leukotoxic Action. A. M. Pappenheimer and M. Vance, New York.—p. 71.

Fungous Developmental Growth Forms of B. Influenza. H. W. Wade, and C. Manalang, Manila.—p. 95.

*Method of Standardizing Bacterial Suspensions. F. L. Gates, New York.—p. 105.

Lymphocyte in Resistance to Transplanted Cancer.—Murphy and Nakahara found that mice immunized against cancer by means of an injection of defibrinated blood show in the germinal centers of the lymphoid organs a marked increase in the numbers of mitotic figures. The increase becomes evident forty-eight hours after the injection in the majority of instances, and reaches its climax at about the fifth day. After this time it subsides, returning to the normal rate about the tenth day. These immunized animals, when inoculated with a cancer graft ten days after the injection, show a second stimulation of the lymphoid centers similar to the first but more intense in character. This increase in the number of mitotic figures becomes evident as early as twenty-four hours after the cancer inoculation and persists in a marked degree for a week, after which there is a gradual return to the normal rate. The lymphocytes of the circulating blood during the establishment of the immunity show frequent examples of amitotic division, and many examples of irregular and lobulated nuclei. These changes suggest intensified functional activity. Cellular reaction in the subcutaneous tissues of immunized animals is present only in the region infiltrated by the injected cells. This fact becomes conspicuous when the immunizing injection is given intraperitoneally, in which case no cellular accumulations are noted in the loose connective tissues. No constant cellular changes were noted in the bone marrow, thymus or thyroid gland, liver or kidney of the treated animals.

Bacillus Dysenteriae Shiga.—Olitsky and Kligler have separated an exotoxin and an endotoxin from cultures of the Shiga dysentery bacillus. The two toxins are physically and biologically distinct. The exotoxin is relatively heat labile, arises in the early period of growth, and yields an antiexotoxic immune serum. The endotoxin, on the other hand, is heat stable, is formed in the later period of growth, and is not neutralized by the antiexotoxic serum. The exotoxin exhibits a specific affinity for the central nervous organs in the rabbit, giving rise to a characteristic lesion—mainly, hemorrhages, necroses and possibly a perivascular infiltration in the gray matter of the upper spinal cord and medulla. The endotoxin exerts a typical action on the intestinal tract, producing edema, hemorrhages, necroses and ulcerations, especially in the large intestine. A potent anti-dysenteric serum should contain antibodies against the exotoxin as well as the endotoxin. That such a serum can be produced in horses has been demonstrated experimentally.

Dairy Infection with Epidemic Streptococcus.—A streptococcus epidemic of moderate extent and severity was characterized by clinical symptoms different from the usual septic

sore throat, though the organism found was culturally *Streptococcus epidemicus*. The infection was traced to the milk from a single quarter of the udder of a cow in a dair of 112 cows producing an otherwise excellent grade of raw milk. A number of the milkers on the dairy farm were found infected. It was impossible to trace the infection of the cow's udder to any one of the milkers, though such an infection seems probable since the streptococcus isolated from the cow was in every respect like streptococci isolated from patients and milkers, and different from those usually found in normal cows or cows with garget. Certain recommendations are made to safeguard producers of raw milk against the occurrence of such epidemics.

Standardization of Bacterial Suspensions.—The opacity of a bacterial suspension is measured by the length of the column of the suspension required to cause the disappearance of a wire loop. By a simple formula the measured opacity is translated into terms of the concentration of bacteria per cubic centimeter, and so made comparable with that of other suspensions of the same organism. An instrument for measuring the opacity of bacterial suspensions is described in detail.

Journal of Infectious Diseases, Chicago

January, 1920, 26, No. 1

Ultraviolet Spectroscopic Studies on Blood Serum. I. Antagonistic Action of Salt in Blood Serum. T. Tadokoro, Chicago.—p. 1.

Ultraviolet Spectroscopic Studies on Blood Serum. II. Difference in Colloidal State of Normal and Immune Serum. T. Tadokoro and Y. Nakayama, Chicago.—p. 8.

*Nonlactose Fermenting Organisms from the Feces of Influenza Patients. N. P. Sherwood, C. M. Downs and J. B. McNaught, Lawrence, Kan.—p. 17.

*Hemolytic Streptococci in Throat in Certain Acute Infectious Diseases. A. Otteraaen, Chicago.—p. 23.

Bacteriology of Chronic Empyema. J. E. Gordon, Camp Gordon, Ga.—p. 29.

Phenol Red-China Blue as an Indicator in Fermentation Tests of Bacterial Cultures. K. Morishima, Washington, D. C.—p. 43.

Metabolism of Virulent Human Tubercle Bacilli. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.—p. 45.

Action of B. Typhosus on Xylose and Some of Other Less Frequently Used Sugars. O. Teague and K. Morishima, Washington, D. C.—p. 52.

Metabolism of Bovine Tubercle Bacilli. A. I. Kendall, A. A. Day and A. W. Walker, Chicago.—p. 77.

*Complement Fixation in Diagnosis of Tuberculosis. W. H. Moursund, Ft. Sam Houston, Texas.—p. 85.

Nonlactose Fermenters in Feces in Influenza.—Bacteriologic examinations of the feces of thirty-two patients with influenza showed the presence of *B. typhosus* in three, and of enteritidis-like organisms in seventeen others. Examination in control cases (one case of typhoid and one of mumps, two cases of measles, three cases of tonsillitis, several cases of lobar pneumonia and several surgical cases) yielded *B. typhosus* in the case of typhoid, but no enteritidis-like organisms in any of the other cases. There seemed to be no correlation between the nature of the stools and the presence of these organisms. They were found in both diarrheal and constipated stools, in mild and severe cases of influenza. The authors point out that if these organisms have no clinical significance in these cases, it would seem to raise the question as to the value of much of the published work on epidemics of food poisoning, supposedly due to enteritidis-like organisms where the mere presence in feces, coupled with more or less vague clinical pictures quite similar to many cases of influenza, have been assumed to prove the enteritidis-like organisms as being the causative factor.

Hemolytic Streptococci in the Throat.—The throats of 300 patients were examined by Otteraaen. He says that hemolytic streptococci are frequent inhabitants of the throats of normal individuals and of persons suffering from acute infectious diseases. These streptococci are not virulent so far as indicated by the results of animal inoculations and phagocytoses experiments. Otteraaen says that the enrichment method should be used in preference to the surface plate method in examinations for streptococci.

Complement Fixation in Diagnosis of Tuberculosis.—The complement fixation test for tuberculosis, as described in Moursund's paper, is of no value as a diagnostic or prognostic aid. The complement fixation test for tuberculosis with alcoholic extract of tubercle bacilli as antigen is not specific.

of all complement fixation tests with bacterial antigens is specific. A large percentage of serums giving a positive Cassermann reaction give fixation with tubercle and gonococcus antigens. A certain number of individuals not infected with tuberculosis or gonorrhea will give positive fixation tests with one or both of the corresponding antigens.

Journal of Laboratory and Clinical Medicine, St. Louis

December, 1919, 5, No. 3

Applications of Pragmatic Method to Psychiatry. E. E. Southard, Boston.—p. 139.
Relation of Glycogen to Pathologic Changes in Pancreatic Diabetes. D. M. Ervin, Cincinnati.—p. 146.
Pathology of Influenzal Pneumonia. O. J. Walker, Youngstown.—p. 154.
Choice of Serums in Treatment of Meningococcus Sepsis. M. B. Cohen, Ashland.—p. 176.
New Stomach Examiner Based on Hydraulic Principle. K. Togami, Fukuoka, Japan.—p. 178.
Reformed Ammonia in Cerebrospinal Fluid. P. F. Morse and E. S. Crump, Detroit.—p. 185.

Glycogen and Pancreatic Diabetes.—Glycogen is a stabilizing colloid in the cell and as such prevents the breaking of emulsion or fatty degeneration by its resistance to acids, salts, etc. Glycogen is hydrolyzed by acids, and when hydrolyzed, there is left a protein-fat emulsion that is but poorly resistant against acids. In diabetes, Ervin says, no glycogen is formed, the fat is only slightly emulsified, permitting a high concentration of the fats or soaps to reach the cell and consequent limited oxidation with the production of the ketone bodies. The equilibrium of glycogen with glucose is shifted toward the glucose side by the presence of the hydrogen ion; hence the high blood sugars in fevers, mercury and phosphorus poisoning and nephritis.

Pathology of Influenzal Pneumonia.—The pneumococcus and hemolytic streptococcus were the most frequent secondary invaders found in the lungs at necropsy in the pneumonias at Camp Sherman. Pfeiffer's bacillus was found in only 4 per cent. of the cases. Walker claims that interstitial and lobular bronchopneumonia cannot be regarded as typical lesions resulting from the invasion by the hemolytic streptococcus. The pneumococcus was found to be the only invader as frequently as the hemolytic streptococcus in these types of pneumonias. In fact, it is doubtful whether the type of organism isolated from pulmonary tissue in pneumonia is of any great value in determining the type of pneumonia present, for the type of organism concerned and the type of lesion in the lung are decidedly variable at different times even at the same station. Influenzal pneumonia is primarily an acute, hemorrhagic lesion, interstitial, nodular, or massive in extent, arising from a pulmonary capillary phlebitis with disseminated capillary necrosis due to some toxic agent, resulting in a secondary purulent pneumonia with healing by organization. The organism or organisms predominantly present in nose or throat in the individual in any particular section of the country is the organism most commonly found in cultures and tissue sections from the lungs in secondary pneumonias in that region. Empyema and peridontitis were frequent complications.

Reformed Ammonia in Cerebrospinal Fluid.—Morse and Crump present a method for the determination of excess reformed ammonia in the spinal fluid, which they have found to be of great value for quickly determining the cause of coma. To an appropriate quantity (2 c.c.) of spinal fluid, an equal quantity of Nessler's reagent is added. In normal persons and in conditions not tending to acidosis or nitrogen retention, scarcely any brown color develops. A cloudy pinkish gray precipitate gradually forms and the fluid turns dirty pale green color. When there is acidosis or nitrogen retention from any cause, a deep brown color develops immediately, the depth of color depending on the amount of ammonia present in the spinal fluid. Only one precaution is necessary. The fluid must be free from contaminating bacteria. These form ammonia and give false readings. Sterile spinal fluids, well corked, give good reactions even when several days old. The reaction is read immediately (within thirty seconds). In general, cases of acidosis associated with infection, and terminal stages of meningitis, develop less often than cases of uremia with nitrogen retention.

Journal of Orthopedic Surgery, Lincoln, Neb.

December, 1919, 1, No. 12

Calcaneo Cavus and Its Treatment. N. Dunn, Birmingham.—p. 711.
Tuberculin in Treatment of Bone and Joint Tuberculosis. S. Kleinberg, New York.—p. 722.
Disability Following Injuries to Back in Industrial Accidents. J. W. Sever, Boston.—p. 743.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

October, 1919, 14, No. 2

*Penetration of Dichlorethylsulphid (Mustard Gas) into Marine Organisms, and Mechanism of Its Destructive Action of Protoplasm. R. S. Lillie, G. H. A. Clowes and R. Chambers, Woods Hole, Mass.—p. 75.
*Effect of Pyretics and Antipyretics on Catalase Production. W. E. Burge, Madison, Wis.—p. 121.
*Drugs After Chlorin Gassing. III. Treatment of Gassed Dogs with Calcium, Quinin and Atropin. H. G. Barbour, New Haven, Conn.—p. 131.
*Local Anesthetics: Do They Precipitate Proteins? T. Sollmann, Cleveland.—p. 135.
Rôle of Bromid Salts on Rhythmically Contracting Organs. I. Action of Bromid on Isolated Mammalian Heart. T. Kruse, Columbia, Mo.—p. 137.
II. Action of Bromids on Smooth Muscle. T. Kruse, Columbia, Mo.—p. 149.
Plasma and Blood Clotting Efficiency of Thromboplastic Agents in Vitro and Their Stability. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 157.
Hemostatic Properties of Thromboplastic Agents under Different Conditions. P. J. Hanzlik and C. M. Weidenthal, Cleveland.—p. 189.

Penetration of Dichlorethylsulphid.—The experiments recorded by Lillie and his associates lend strong support to the theory, that "mustard gas" penetrates the cell on account of its organosolubility, and within the cell undergoes hydrolysis, with the liberation of nascent hydrochloric acid, which exerts the destructive effect.

Effect of Pyretics and Antipyretics.—According to Burge, chloroform and ether lower temperature in so far as decreased oxidation is involved in this by decreasing catalase, the enzyme principally responsible for oxidation in the body. The fact that acetanilid, quinin and acetphenetidin have little or no effect in decreasing catalase suggests that their mode of action in lowering temperature is not due to a decrease in oxidation.

Drugs After Chlorin Gassing.—No evidence was obtained by Barbour favorable to the employment of subcutaneous injections of calcium lactate in edema of the lung. Calcium was tested in twenty-three, quinin in eight and atropin in four gassed dogs, without a single recovery.

Do Local Anesthetics Precipitate Proteins?—Sollmann's experiments show that most of the local anesthetics now available do not precipitate proteins, and none did so to a serious degree.

Laryngoscope, St. Louis

November, 1919, 29, No. 11

Treatment of Gunshot Wounds of Mastoid. H. Neuhof and G. H. Cocks, New York.—p. 615.
Injuries of Nose and Throat, Due to Bullet and Shell Wounds. J. M. Ingersoll, Cleveland.—p. 624.
Foreign Bodies in Air and Upper Food Passages in Pre-Endoscopic Days. H. Arrowsmith, Brooklyn.—p. 633.
Thrombosis of Internal Jugular Vein with Pyemia as a Complication of Retropharyngeal Abscess. H. P. Mosher, Boston.—p. 638.
Nature and Origin of Stammering. E. L. Kenyon, Chicago.—p. 639.
Three Reflex Signs Useful in Examining Ears for Deafness. O. J. Stein, Chicago.—p. 657.
Roentgen-Ray Diagnosis of Acute Mastoiditis in Absence of Mastoid Symptoms. H. M. Hays, New York.—p. 660.

Medical Record, New York

Nov. 1, 1919, 96, No. 18

*Roentgen-Ray Findings with the Delineator in Cardiospasm. M. Einhorn and T. Scholz, New York.—p. 715.
Mental Diseases. H. Laveson, New York.—p. 717. To be cont'd.
Results of Nonspecific Vegetable Protein Therapy in Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 725.
Intraspinal Treatment of Neurosyphilis. C. R. Humbert, Kansas City.—p. 726.
Relation of Eye and Ear Disturbances to Disorders of Gastroenteric Tract. J. Katz, Brooklyn.—p. 727.

Roentgen-Ray Findings with Delineator in Cardiospasm.—Einhorn claims that this is the best method for studying

cases of cardiospasm. The delineator string, once swallowed by the patient, may remain in situ for any length of time, outlining permanently the course of the esophagus and reacting even to slight spastic conditions of the organ. In the normal esophagus the course of the string shows a straight line. In the spastic organ the course of the string is more or less tortuous, according to the degree of spasticity. The instrument casts a definite shadow on the fluoroscopic screen as well as on the plate. The patient, therefore, can be examined repeatedly during any period of time, and at the roentgenologist's leisure, without subjecting the patient to the inconvenience of repeated ingestions of contrast mixtures. If necessary, plates can be taken for records.

Nov. 15, 1919, **96**, No. 20

- Emotional Unrest, Its Causes and Treatment. S. Paton, Princeton, N. J.—p. 787.
Obstetric Paralysis (Erb's Palsy); Report of Seventeen Cases. S. W. Boorstein, New York.—p. 790.
Aconite in Treatment of Epidemic Influenza. S. G. Strauss, New York.—p. 798.
Absolute Rest as a Metabolic Stimulant. W. H. Porter, New York.—p. 800.
Medical Neologisms of Rabelais. D. W. Montgomery, San Francisco.—p. 801.
*Convenient Method for Concentrating and Isolating Tubercle Bacilli. H. J. Goeckel, Cranford, N. J.—p. 804.

Nov. 22, 1919, **96**, No. 21

- A Year of Proteal Therapy. H. S. Williams, New York.—p. 825.
Necessity of Accuracy in Diagnosis of Tuberculosis. M. J. Fine, Newark, N. J.—p. 836.
Treatment of Pandemic Influenza. A. M. Corwin, Chicago.—p. 838.
Homosexuality. C. P. Oberndorf, New York.—p. 840.
Hammer Toes. N. A. Ludington, New Haven.—p. 843.

Convenient Method for Concentrating and Isolating Tubercle Bacilli.—Goeckel uses Rice's bromin and alkali reagent (Rice's solution No. 1: Bromin [pure], 1 ounce [30 gm.]; sodium bromid, 1 ounce [30 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]; Rice's solution No. 2: Sodium hydroxid, 2½ ounces [70 gm.]; distilled water, q. s. ad. 8 fluidounces [250 c.c.]) not only on sputum, but likewise on tuberculous glands. To the sputum, caseous pus, or moderately cut or minced tissues add a few cubic centimeters of the sodium hydroxid solution (Rice's solution No. 2). Mix well and add Rice's bromin solution (No. 1) in successive small portions until a clear liquid is obtained. The use of heat is not necessary. The liquid is then diluted with distilled water to reduce the specific gravity and is centrifuged at high speed to precipitate the bacilli. These are then washed with two successive portions of distilled water, centrifuging to remove the alkali. The residue is mounted on a microscopic slide in the usual manner, using a trace of albumin to fix on the slide.

Michigan State Medical Society Journal, Grand Rapids

December, 1919, **18**, No. 12

- Varicose Ulcers of Leg. J. Van Becelaere, Detroit.—p. 585.
Typhoid Fever. A. R. Hackett, Detroit.—p. 597.
When Should the Gallbladder Be Removed? W. J. Gillette, Toledo.—p. 602.
Diagnosis of Duodenal Ulcer. J. A. Ardries, Detroit.—p. 605.
When Is Sterilization of Women Justifiable? R. Peterson, Ann Arbor.—p. 618.
Serologic Examinations in Eye and Ear Cases. D. M. Campbell, Detroit.—p. 615.
Multiple Fistula of Anorectal Origin; Surgical Solution of Chlorinated Soda; Plastic Skin Flap. E. G. Martin, Detroit.—p. 620.

Modern Medicine, Chicago

December, 1919, **1**, No. 8

- Historical Development of Public Health Work in England. A. Newsholme, London, England.—p. 655.
American Public Health Association. C. E. A. Winslow, New York.—p. 663.
Fulfilling the Part of Physical Education in Reconstruction. J. Daniels, Washington, D. C.—p. 667.
Benzol Poisoning. R. P. Albaugh, Cleveland.—p. 670.
*Recognition and Better Treatment for Mental and Nervous Injuries. F. D. Donoghue, Boston.—p. 671.
*Securing Proper Medical Service for Injured Persons. J. W. Trask, U. S. P. H. Service.—p. 675.
Infections of Upper Extremities. P. A. Bendixen, Davenport, Ia.—p. 679.
Disabilities as Aggravated by Preexisting Conditions. J. W. Mowell, Olympia, Wash.—p. 683.
*Better Methods in Medical Service. F. H. Thompson, Salem, Ore.—p. 688.

- How Can Medical Service Be Improved? M. R. Gibbons, San Francisco.—p. 689.
Critical Survey of Public Health Topics. J. Schevitz, Oklahoma City, Okla.—p. 694.
Larger Field in Tuberculosis. A. K. Krause, Baltimore, Md.—p. 697.
An Iowa Enterprise in Medical Service. A. E. Kepford, Des Moines.—p. 714.
Training School of Psychiatric Social Work at Smith College. E. R. Spaulding, Bedford Hills, N. Y.—p. 720.
Present Day Problems in Obstetrics. J. T. Williams, Boston.—p. 731.

Recognition and Better Treatment for Mental and Nervous Injuries.—Donoghue emphasizes the need of calling to the assistance of the compensation boards men competent to diagnose and advise treatment in the psychoses, and through them to encourage the further standardization of this group of cases. The present method of handling them by exerting constant pressure from the insurance physician, insurance adjuster, or compensation commissioner, is not always a success. Nonacceptable work forced on a man tends to develop in him the reaction against work. Forcing a high class man to sweep a floor, may not be treatment; it may be the opposite. The difficulty of the administration of workmen's compensation by lay boards in this group of cases comes down to the unsurmountable fact that there is no specific treatment for hysteria. When a person presents himself he is coming more for relief than for monetary compensation.

Securing of Proper Medical Service for Injured Persons.—Trask outlines the work done by the U. S. Employee's Compensation Commission, its aims and objects, and particularly the requirements of a competent personnel. Physical restoration is accomplished through medical treatment in its broad sense. To be effective it must be competent and adequate. The question of satisfactory medical care for injury cases seems to resolve itself into ascertaining who are competent, well trained surgeons, with the necessary temperamental qualifications, and where they are located, and then placing the injury cases under their care. The experience of the commission has been that the whole problem depends on the selection of properly qualified surgeons who will conscientiously do whatever is possible toward the physical restoration of their patient.

Better Methods in Medical Service.—In Thompson's opinion, one thing essential to the betterment of the medical service, is the occasional meeting of the county and state medical societies and the presentation of papers that deal with the problems arising between the surgeons and the board. He urges doing away with the hospital contract system that too frequently renders poor service and overcharges the workman.

Neurological Bulletin, New York

August, 1919, **2**, No. 8

- Functional Significance and Principal Syndrome of Cerebellum. F. Tilney, New York.—p. 289.

New Jersey Medical Society Journal, Orange

December, 1919, **16**, No. 12

- Has the Medical Profession Adequately Met Its Responsibilities? G. E. Tucker, Hartford, Conn.—p. 419.
Surgical Complications of Influenza. P. Correll, Easton Pa.—p. 423.
Plea for Rational Removal of Diseased Tonsils. C. J. Sullivan, New Brunswick, N. J.—p. 425.
Close Relationship Existing Between General Practitioner and Ophthalmologist and Otolaryngologist. T. H. Odeneal, Beverly, Mass.—p. 427.
Medical History of Cumberland County, N. J. T. J. Smith, Bridgeton, N. J.—p. 432.

New York Medical Journal

Dec. 6, 1919, **110**, No. 23

- *Causation and Treatment of Rickets. E. Pritchard, London.—p. 921.
Argonne Influenza Epidemic. H. Brooks and C. Gillette, New York.—p. 925.
*Treatment of Climacteric Hypertension. A. H. Hopkins, Philadelphia.—p. 930.
Treatment of Chronic Discharging Ear. H. B. Blackwell, New York.—p. 933.
*Shelley the Invalid. A. A. Moll, Chicago.—p. 934.
Spontaneous Evacuation of Gauze Sponge from Peritoneal Cavity by Way of Bowel. Report of a Case. J. P. Jones, Wakefield, R. I.—p. 941.

Factors of Safety in Prostatic Surgery. M. Meltzer, New York.—p. 942.
Hemoglobinuric Bilious Fever. C. G. Cumston, Geneva, Switzerland.—p. 944.

Causation and Treatment of Rickets.—Pritchard holds the view which is that practically all varieties of malnutrition occurring during infancy and early childhood tend to terminate in rickets, provided they are sufficiently severe or long enough continued. They should not, however, be regarded as evidence of rickets, unless they are actually accompanied by the typical changes in bone which are characteristic of the disease. The essential and central feature of rickets he believes is the want of calcification or mineralization of developing bone, and this in its turn is due to the existence of requirements for calcium which for a time being are more urgent than of developing bone. These urgent requirements are the necessity for neutralizing acid bodies in the blood; in other words, to neutralize or compensate an existing acidosis. In Pritchard's opinion all chronic conditions of malnutrition of whatever kind or from whatever cause finally terminate in an acidosis, and that the claims on alkaline bases arising in connection with the neutralization of this acidosis must be satisfied before those of developing bone are attended to. It is in the satisfaction of these claims for alkaline bases that the injury is done to growing bone.

Climacteric Hypertension.—In considering the treatment of climacteric hypertension Hopkins divides the condition into three stages: 1. The first or larval stage in which high blood pressure and nervousness are the chief symptoms. 2. The second stage, in which the pressure is higher and remains more constant and in which the gastric neurosis, cardiac or pressure symptoms, as headache, vertigo, etc., make their appearance. 3. The third stage comes later in life, i. e., in the sixth or seventh decade and represents what might be regarded as the early evidences of senility. The treatment for each stage is described in detail.

Shelley the Invalid.—An analysis of Shelley's writings bearing on his illness has convinced Moll that the poet was suffering from either gastric or duodenal ulcer.

Dec. 20, 1919, **110**, No. 25

Staphylococcic Bacteriuria. P. Nolf, Brussels, Belgium.—p. 1009.
Lasting Treatment of Diabetes. H. S. Stark, New York.—p. 1010.
Gas Gangrene. B. Jablons, Washington, D. C.—p. 1014.
Relation of Arteriosclerosis to Eye. L. W. Fox, Philadelphia.—p. 1020.
Industrial Medicine and Surgery: an Integral Part of Industry. R. M. Little, New York.—p. 1022.
Rheumatism in Light of Modern Research. H. W. Frauenthal, New York.—p. 1024.
Relation of Malaria to Pregnancy. B. Kaufman, San Francisco.—p. 1028.

Vaccinotherapy of Bacteriuria.—Nolf cites his experience with progressive intravenous vaccination in the treatment of these cases. His results have been very satisfactory.

Industrial Medicine and Surgery.—Little points out the needs of industrial medicine and surgery and suggests how these may be met by the medical profession. He would have a bureau headed by a practical business man who is also a surgeon, and which bureau will prepare, or have prepared pamphlets on the subject of health and the treatment of disease and injuries in clear, nontechnical, forcible language, such pamphlets should be sent to every chamber of commerce, manufacturers' association and trade body in the country. Letters should be sent to all the employers of the country, calling their attention to the necessity of health as a factor in industry and making suggestions concerning the proper organization of a health service in industrial plants. There would have a roster of able men who can speak effectively on this subject before chambers of commerce, before manufacturers' associations and the leading trade bodies at their annual meetings, and also a roster of well qualified physicians and surgeons who are willing to enter the industrial field, provided suitable conditions and opportunities are made for them. This propaganda and education work should be carried into the medical schools and hospitals of the country in order that the regular medical course may provide training in industrial surgery.

Public Health Journal, Toronto

December, 1919, **10**, No. 12

Epidemic Pneumonia. A. G. Nicholls, Halifax, N. S.—p. 537.
Statutory Practice. A. E. Forbes, Maccan, N. S.—p. 547.
Nineteenth Annual Report of Executive Council of Canadian Association for Prevention of Tuberculosis. G. D. Porter, Ottawa.—p. 551.
Plan for a More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 557.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

Dec 10, 1919, **13**, No. 3

Coincident Malaria and Typhoid. H. H. Scott, London.—p. 195.
*Metabolism of White Races Living in Tropics; II. Composition of Urine. W. J. Young.—p. 215.
Endemic Tsutsugamushi Disease of Formosa. J. Hatori.—p. 233.
Bionomics of Stegomyia Fasciata. J. W. Fielding.—p. 259.
Ancylostoma Ceylanicum in the cat in Durban. B. Blacklock.—p. 297.

Urine of White Races Living in Tropics.—The twenty-four hours' urine collected from a number of persons living in North Queensland and of different occupations was analyzed by Scott. The daily average volume was only 784 c.c. This volume was increased considerably in the cooler weather. The specific gravity was very much higher, while the freezing point did not differ very much from that found in Europe, thus the osmotic pressure was not very much higher. A striking difference was noticed in the quantity of sodium chlorid excreted in the urine, which was very low, and this may be accounted for by the large loss of water in the sweat which carries with it this salt. It is calculated that a man doing manual labor in the tropics must lose several grains of sodium chlorid per day through the skin, which would readily account for the deficiency in the urine. The total nitrogen showed a lower figure than that found in Europe, which cannot be accounted for by loss of nitrogen from the skin, since it is shown that this can only amount to 1 or 2 gm. per day under normal circumstances. These results differ from those obtained by other observers in other parts of the tropics.

British Journal of Surgery, Bristol

October, 1919, **7**, No. 26

Specimens of Gunshot Injuries of Long Bones. A. Keith and M. E. Hall.—p. 149.
*Compression of Lower Trunk of Brachial Plexus by a First Dorsal Rib. J. S. B. Stopford.—p. 168.
*Traumatic Myositis Ossificans Resulting from Gunshot Wounds. J. Morley.—p. 178.
*Paget's Disease of Nipple. W. S. Handley.—p. 183.
*Operation for Exophthalmic Goiter. T. P. Dunhill.—p. 195.
*Repair of Bone. W. E. Gallie and D. E. Robertson.—p. 211.
Physiologic Pathology of Gunshot Wounds of Head. G. Jefferson.—p. 262.
Case of Large Splenic Cyst; Splenectomy. E. E. Maples.—p. 290.
Shell Wound of Small Intestine: Resection. Recovery. W. Tyson.—p. 292.
Gas Cyst of Thigh from Foreign Body Retained After Shell Wound. F. J. Tees.—p. 293.

Nerve Compression by First Dorsal Rib.—Ten cases of this type were seen by the authors in less than two years. Eight of these are described as belonging to the idiopathic group, while two were of traumatic origin. In all the ten cases, except one (and that was a very early one), objective sensory disturbances were present, and in all the nine cases, loss of protopathic sensibility was greater than the epicritic loss—a dissociation which Stopford has previously suggested as characteristic of nerve compression. Trophic and vasomotor phenomena were very constant, the most frequent being hypothermia, pallor or cyanosis, and trophic sores affecting the little and ring fingers and more rarely the inner border of the forearm. There does not appear to be any advantage in subdividing the cases into the three types—motor, sensory and trophic disturbances in the hand and forearm may be and sympathetic—according to which group of symptoms predominates, provided it is remembered that weakness of the hand, objective and subjective sensory manifestations,

the result of compression of the lower trunk by a first thoracic rib as well as by a supernumerary costal element.

Traumatic Myositis Ossificans.—Morley draws attention to the fact that gunshot wounds, and particularly shell wounds, which graze tangentially the smooth shaft of such a bone as the femur, may give rise to a growth of bone in the adjacent muscles precisely similar to the familiar myositis ossificans that follows a subcutaneous trauma. He also points out the value of this fact as evidence of the true nature of the process.

Paget's Disease of Nipple.—The nature of this disease is discussed at length by Handley, and he finally concludes that the probabilities all favor the view that the lymphatic obstruction which is the cause of Paget's eczema results from neoplastic and not from mere inflammatory obstruction of the lymphatics. Even if in rare cases it is possible that the eczema results from a block in the lymphatics of inflammatory origin, it is certain that this form of chronic inflammation of the ducts is a very dangerous condition which almost invariably leads to carcinoma. Paget acknowledged that in all cases in which he excised the eczematous nipple a carcinoma subsequently appeared in the breast. Early and complete removal of the breast is, therefore, demanded whatever the view adopted as to the order in time of the eczema and the carcinoma.

Operation for Exophthalmic Goiter.—In operating on the thyroid for exophthalmic goiter, Dunhill insists that only so much gland tissue should be removed as is necessary, but that this must be done even if more than one or even three operations should be performed. He is convinced that one cause of failure is leaving gland tissue which should have been removed cleanly, i. e., the posterior surface of the first lobe, or portion of the isthmus, attached to the trachea. Small portions such as these always grow and function, and they cannot subsequently be dug out of their surrounding scar tissue without great difficulty. "What you remove, remove cleanly; what you leave, leave undisturbed. See that the portion left has always its blood supply intact. Failures are due to leaving too much gland behind." Dunhill prefers to operate under local anesthesia.

Repair of Bone.—Gallie and Robertson have made a complete review of the literature on the repair of bone, and performed a large number of experiments on animals in trying to arrive at a definite conclusion. They are of the opinion that periosteum is not osteogenetic, and should not be depended on under any circumstances to assist in the production of new bone. The presence or absence of the periosteum in autogenous bone transplants has no decided influence on the activity of the subperiosteal osteoblast, and is of no practical clinical importance. The periosteum is of great importance, however, from a clinical standpoint, because of its control of the circulation throughout living bone. Extensive stripping of the periosteum at operation will result in necrosis, which may cause delay in the union of aseptic fractures, and which will result in sequestration where sepsis is present. Disturbance of the circulation should be reduced to a minimum in all operations on bone. The method of new bone growth and other points of interest in connection with bone repair are discussed fully.

Edinburgh Medical Journal

December, 1919, 23, No. 6

- Relation of Chemistry to Medicine. G. Barger.—p. 350.
Technic of Blood Transfusion. J. M. Graham.—p. 358.
Position of General Hospital in a Regional Survey. N. Burnett.—p. 387.

Indian Medical Gazette, Calcutta

November, 1919, 54, No. 10

- Midwifery Impressions. J. R. Roberts.—p. 401.
*Successful Cholera Prophylactic Vaccination: An Experiment in a Village During an Epidemic. A. Roy.—p. 404.
*Economic Value of Anticholera Inoculation. T. C. McC. Young.—p. 407.
Diabetes in Madras. S. K. Aiver.—p. 410.
*Case of Ophitoxemia—Snake Poisoning (*Echis Carinata*); Recovery. D. J. Asana.—p. 412.
Paka Oil in Mustard Oil as an Adulterant. R. C. Bose, and S. N. Sen.—p. 413.

- Surgical Emphysema Complicating Influenza. I. C. Aich.—p. 418.
*Case of Hydatid Cyst. G. M. Butt.—p. 419.
Case of Ectopic Gestation Which Burst into Rectum. E. B. Wolf.—p. 419.

Anticholera Inoculation.—Roy and Young report very favorably on the use of anticholera vaccines in the prevention of cholera. Even under the most unfavorable circumstances, as existed in one village, Roy succeeded in checking an extensive epidemic after all other measures had failed.

Ophitoxemia.—In Asana's case the treatment consisted in cleaning the bitten part, the application of antiseptic dressings, calcium chlorid in 10 gm. doses, every three hours, 0.33 gm. emetin hydrochlorid morning and evening hypodermically, and alum gargles for the mouth as often as possible. The treatment was continued for four days. On the eighth day the patient was well.

Abdominal Hydatid Cyst.—Butt removed an intra-abdominal hydatid cyst measuring 5½ inches in diameter from his patient. The cyst arose from the peritoneum.

Journal of Laryngology, Rhinology and Otology, London

December, 1919, 34, No. 12

- *Tongue Holder and Depressor for Tonsillectomy. J. Donelan.—p. 477.
Cases of Maxillary Antrum Disease. W. S. Syme.—p. 478.
Complications of Chronic Middle Ear Suppuration. J. S. Fraser and W. T. Garretson.—p. 480.
Case of Aural Bacteremia. R. Webber.—p. 499.

Tongue Holder and Depressor for Tonsillectomy.—Donelan's instrument consists of a tissue forceps on the back of which a fenestrated tongue depressor is fixed. The patient being in the supine position, with head retracted over a sand pillow, the points of the forceps are inserted transversely and well back in the dorsum of the tongue. The tongue is then gently drawn forward by the anesthetist, and at the same time the dorsum is depressed in such a way as to free the respiratory passage and completely expose the field of operation.

Journal of Pathology and Bacteriology, Cambridge

October, 1919, 23, No. 1

- Experiments on Action of Unsaturated Fatty Acids and Lipoids on Amylolytic and Hemolytic Phenomena. P. Stocks.—p. 1.
*Modified Wassermann Test. C. Y. Wang.—p. 15.
*Biochemistry of Pathogenic Anaerobes. VIII. J. E. G. Harris.—p. 30.
*Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin. F. H. Teale and D. Embleton.—p. 50.
Macroscopic Appearances of War Injured Nerves. S. M. Cone, M. C., U. S. Army.—p. 69.
Protozoal Parasites of Rat; the Rat as a Natural Reservoir of Spirocheta Icterohemorrhagiae. A. G. R. Foulerton.—p. 78.
Squamous Epithelioma Involving the Frontal and Superior Maxillary Sinuses in a Mare. J. F. D. Tutt.—p. 104.
Ectopia Cloacae. C. Walker.—p. 109.

Modified Wassermann Test.—In the method described by Wang the technic is simple, consisting in the mixing, in loopfuls, of an antigen with the suspected serum and the sensitized corpuscles, all at one and the same time. The blood required for the test is available from a prick and collected in small capillary tubes, such as those used for the Widal test. The examination need not be undertaken almost at once, as in Birt's test, but may be delayed to the third day, or perhaps even longer, after the sample has been taken. The test is said to be superior to the Wassermann.

Biochemistry of Pathogenic Anaerobes.—Experimental methods are described by Harris for carrying out a comparison of the biochemical reactions of two closely allied organisms. Details are given of the apparatus used for fermentation experiments, and of the methods for obtaining values for gas production, ammonia and amino-acid formation, production of volatile acids, and changes in hydrogen ion concentration and sugar content. A simple method is described for determining the degree of oxygen toleration of organisms for routine purposes; it is suggested that results should be expressed in the form of the "aerobic index," which is defined. A comparison is made of two anaerobes—*B. sporogencs* and the Reading bacillus—which, morphologically and in cultural reactions, are closely related. The

Results are given of fermentations on five different mediums, and of determinations of the aerobic indices both of spores and young organisms on liquid and solid mediums. From the experimental results it is concluded that these two organisms are of the same race, but show small differences, possibly acquired. In their biochemical behavior toward the five mediums used, they are remarkably similar, but they show a somewhat striking difference in their powers of growing in the presence of oxygen. The use of methods, such as those described, for investigations of the biochemical properties of bacteria in general, is discussed, and a means is suggested for using these methods with aerobic organisms.

Paths of Spread of Bacterial Exotoxins.—The experiments recorded by Teale and Embleton show that although tetanus toxin ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a very great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking of the latter paths greatly delays and in some cases completely prevents the occurrence of tetanus in the part corresponding to the nerve whose lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and hence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to the tissues thereof. Tetanus toxin does not pass from the choroidal plexus to the cerebrospinal fluid. Although bacteria can pass through the posterior root ganglion to the cord, colloidal pigments and tetanus toxin are prevented from doing so. Iodin, although it prevents tetanus toxin from producing its characteristic effects when iodized toxin is inoculated subcutaneously or intravenously, does not affect the toxin when inoculated intracerebrally, it does not hinder the occurrence of the typical symptoms of cerebral tetanus, and there is no apparent diminution in its toxicity. Tetanus antitoxin does not pass to the central nervous system either by way of the blood vessels, axis cylinders, or neural lymphatic channels. It also cannot pass from the cerebrospinal fluid into the substance of the cord when inoculated intrathecally. The antitoxin simply acts by combining with the circulating toxin at the seat of production, and prevents it from reaching the central nervous system. The toxin already in this position is unaffected.

Journal of Tropical Medicine and Hygiene, London

Dec. 1, 1919, 22, No. 23

Case of Bronchospirochetosis (Castellani's Bronchitis). W. Broughton-Alcock.—p. 213.

Seale Hayne Neurological Studies, London

August, 1919, 1, No. 5

Obsessions. R. G. Gordon.—p. 235.
Hysterical Contractures. A. F. Hurst.—p. 244.
Studies in Hysteria. XI. Suggestibility and Its Relation to the Psychology of Hysteria. R. G. Gordon.—p. 264.
Organic Basis of Neurasthenia. Two Cases Presenting Symptoms of Addison's Disease. A. F. Hurst.—p. 272.
Dissociation of Physical Signs of Organic Lesions of Pyramidal Tract. A. F. Hurst.—p. 276.
Hysterical Deafness; Auditory Motor Reflex and Psychology of Hearing. A. F. Hurst.—p. 279.
Case of Cerebral Abscess, Probably Influenzal in Origin. J. Culross and A. F. Hurst.—p. 290.
Hysterical Amnesia of Fourteen Months' Duration Cured at a Single Sitting by Hypnosis. S. H. Wilkinson.—p. 293.
Case of Hysterical Pain and Vomiting Following Appendicitis, with Relapses. R. G. Gordon.—p. 294.
Hysterical Symptom of Forty Years' Duration. R. G. Gordon.—p. 296.

Bulletin Médical, Paris

Nov. 29, 1919, 33, No. 53

The Physiopathology of Jaundice. M. Brulé.—p. 709.
System for Clinical Examination in Cases of Jaundice. F. Saint-Girons.—p. 713.
Diagnosis of Jaundice. P. Ameuille and R. Huguenin.—p. 717.
Sterohemorrhagic Spirochetosis. P. Pagniez.—p. 720.

Physiopathology of Jaundice.—Brulé reiterates that besides hemolytic jaundice—which calls merely for iron and possibly splenectomy—discovery of dissociated retention of bile salts shows that the jaundice is due to insufficiency in liver functioning and not to mere obstruction of the biliary passages, from within or without. Recent research has confirmed that

infectious jaundice in the great majority of cases is the manifestation of disease in the liver, and hence operations, cholagogues and measures to clear out and disinfect the biliary passages are useless when the stoppage of the course of the bile is in the liver itself. Treatment should aim to fortify and facilitate the task of the liver; ingestion of sugar, for example, promotes the glycogen function. Although therapeutic efforts in this line have been very imperfect to date, yet our increasing knowledge of the physiopathology of jaundice will certainly some day aid in corresponding improvement in its treatment.

Examination in Cases of Jaundice.—Saint-Girons devotes over four pages to the systematic outline of the questions to be asked in the clinical examination and the interpretation of the findings. Ameuille and Huguenin give a similar systematic outline and technic for the laboratory tests to complete the clinical diagnosis.

Icterogenous Spirochetosis.—Pagniez had only 15 per cent. typical forms in his 45 cases of icterogenous spirochetosis in the Aisne district in the summer of 1917. The catarrhal jaundice type was encountered in 10 or 12 per cent. In 2 cases there was no jaundice with the spirochetosis, the meninges bearing the brunt of the attack. In 4 cases the meningeal syndrome preceded the jaundice. No really active antiserum seems to have been produced to date. Arsphenamin has given no results, and this medication, he says, has been completely abandoned. Lumbar puncture relieves the pain in the meningeal form but the danger in the graver cases is mostly from the kidneys. Hence abstention from nitrogenous food and repeated venesection are indispensable to enable the patient to resist the intoxication until kidney functioning becomes reestablished.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 7, 1919, 43, No. 31

Hemiplegic Amyotrophic Lateral Sclerosis. Marie and others.—p. 925.
*Neo-Arsphenamin in Contractures and Spasms. M. Sicard.—p. 930.
*Gall by Rectum in Constipation. R. Bensaude and M. Vicente.—p. 932.
*Dehydration of Pancreas in Coma. Chauffard and Grigaut.—p. 939.
*Peritoneal Symptoms in Acute Pneumococcus Infection. C. Flandin, M. Debray and F. Françon.—p. 943.
Acute Poliomyelitis in Adult. P. Marie and A. Léri.—p. 949.
*Roentgenoscopy of the Viscera after Intra-Abdominal Injection of Oxygen. L. Ribadeau-Dumas, Mallet and de Laulière.—p. 952.

Neo-Arsphenamin in Treatment of Contracture and Spasms.—Sicard relates that the by-effects of neo-arsphenamin on the nervous system can be utilized in direct treatment of certain nervous disturbances in both syphilitics and non-syphilitics. The arsenical inhibition may range from a simply sedative effect to abolition of all reflex action in the legs, depending on the dose and the way the drug is pushed; small injections by the vein every day or two are more potent than a weekly injection. The Achilles reflex has not returned during the fifteen months to date in some of his cases. This by-effect of arsphenamin may lead to the mistaken assumption of impending tabes unless the normal findings in the spinal fluid are taken into account, as also the electric responses, knee jerk and pupil reactions. A sedative influence on contractures and in chorea was evident after 4 or 5 gm. of neo-arsphenamin had been thus administered in the course of five or six weeks. This hitherto misinterpreted property of the drug can thus be utilized in many cases of pathologic nervous conditions, under control of the skin, nerve and azotemic reactions.

Bile by the Rectum in Treatment of Constipation.—Bensaude and Vincent have been amazed at the way in which beef gall (10 gm. extract of beef gall in a liter of water) started up peristalsis twelve hours after ingestion of a contrast meal. When the bile enema was given the opaque mass was in the ascending colon. It passed rapidly along and was expelled the fifth minute. This amount of the gall extract caused griping, but 5 gm. proved equally effectual without inducing colic. Various preparations of beef gall were tried, but 4 or 5 gm. of the powder form, that is, two teaspoonfuls in 250 gm. of tepid water, is the most convenient method. The gall does not seem to lose its efficacy in time, according to their several months of experience. They review the history

of the use of bile in medicine, beginning with the Egyptian papyrus thirteen centuries B. C. which among various prescriptions for enemas gives: "Beef gall $\frac{1}{3}$; cow's milk $\frac{1}{6}$. Usually cures in four days. A good remedy."

Dehydration of the Pancreas in Diabetic Coma.—Chauffard and Grigaut have long noted the extreme dehydration of the organs in diabetic coma, most pronounced in the pancreas. In a recent case, even the spinal fluid was thick and syrupy, and the coefficient of dehydration in the pancreas was 170 per thousand. Examination of the pancreas from diabetics and others succumbing to causes other than coma showed normal hydration of the pancreas.

Abdominal Reactions in Pneumococcus Septicemia.—In the case reported, the signs of grave general infection were accompanied by intense abdominal pain and extreme distention of the intestines with complete arrest of stools and flatus. There were no symptoms from the lungs, and an exploratory laparotomy showed no signs of peritonitis. The young woman died the seventh day. In another case the acute peritoneal reaction developed during convalescence from pneumonia. A suppurating joint lesion may have aided in the recovery, acting like a fixation abscess. Other cases are cited in which the course tended to suppuration, diffuse and fatal in some, or localized, with recovery. The relief was usually great as soon as a suppurating focus developed. *Pneumococcus* *pus* does not seem to be spontaneously resorbed and requires surgical measures.

Roentgenoscopy After Injection of Oxygen.—Ribadeau-Dumas expatiates on the remarkable precision with which the viscera can be inspected after intraperitoneal injection of a liter or two of oxygen. He changes the patient's attitude until the viscus shows best on the screen, and then roentgenographs it.

Nov. 14, 1919, 43, No. 32

- *Diabetes and Exophthalmic Goiter. M. Labbé.—p. 955.
- *Parotitis in Cerebrospinal Meningitis. Serr and Brette.—p. 962.
- *Duodenal Ulcer with Ptosis. A. Durrieux and Parturier.—p. 966.
- *Spontaneous Rupture of Aorta. Menetrier and Durand.—p. 968.

Diabetes and Exophthalmic Goiter.—Labbé describes the five cases he has encountered of this combination. The glycosuria in this thyroid diabetes seems to be more resistant and less dependent on the diet than in ordinary diabetes. In one of his cases the woman developed goiter at 20; glycosuria became installed at 50, and at 54 the symptoms of severe exophthalmic goiter developed and the diabetes became aggravated. Each time there was a hyperthyroid attack, with tachycardia, the sugar content of the urine and blood ran up high, scarcely modified by dietetic measures, but subsiding with the paroxysm of hyperthyroidism. He cites Manby, Lancereaux and others' reports of instances of diabetes in some members of a family and exophthalmic goiter in others. Diabetics with exophthalmic goiter seem to display an exceptional tendency to acidosis, probably from the derangement in nitrogen metabolism which is constant in exophthalmic goiter. He adds that the action of drugs also tends to individualize this form of diabetes; drugs like quinin and salicylate, which act on the goiter, modify likewise the glycosuria. In two of the cases described, treatment with iodine proved effectual; at the same time that the palpitations and tachycardia subsided, the glycosuria declined also. His five cases show the multiplicity of types which the diabetes may assume in these cases. A number of writers have called attention to the frequency of alimentary glycosuria in *basedowiens*. In the discussion that followed, Garnier related that when feeding animals suprarenal extract, a much higher degree of glycosuria was realized when thyroid extract was associated with it than when the suprarenal extract was given alone. Linossier commented on the exceptionally high alimentary glycosuria in some cases of exophthalmic goiter, but this does not occur in all. It is evident that in some cases the interaction of other glands may maintain a functional balance.

Parotitis in Meningitis.—The meningitis was declining in the two young men when the parotitis flared up.

Differential Diagnosis of Duodenal Ulcer.—The predominant symptom presented by the man of 32 was constantly

recurring intense dizziness, evidently from the upper digestive tract. The pains suggested duodenal ulcer, and this was confirmed by the constant painful point, at the middle of a line from the umbilicus to the tenth rib, not varying during inspiration or change of position. There was also a remote painful point at the left, between the two heads of the sternocleidomastoid muscle; Parturier has already called attention to this referred pain at this point as an aid in diagnosis of abdominal disease. Still further aid in the diagnosis was afforded by the elective action of belladonna in relieving the pain, while it was not modified by opium, which is so effectual with disease in the biliary apparatus. The stomach in this case sagged 8 cm. below the crest of the ilium.

Spontaneous Rupture of the Aorta.—The woman of 43 was syphilitic, and necropsy disclosed changes in the middle layer of the aorta which were of a different type from the specific arteritis hitherto described.

Médecine, Paris

November, 1919, 1, No. 2. Syphilis and Skin Disease Number

- *Recent Progress in Skin Diseases and Syphilis. Gougerot.—p. 69.
- *Phthiriasis as a Symptom. E. Jeanselme.—p. 79.
- *Serodiagnosis of Skin Diseases. E. Joltrain.—p. 81.
- Joint Disease in Psoriasis. L. Bory.—p. 85.
- Eczema a Defensive Reaction. H. Gougerot.—p. 87.
- *The Herxheimer Reaction. G. Milian.—p. 91.
- *Syphilitic Meningitis. M. Bloch.—p. 92.
- Syphilitic Vitiligo. A. Touraine.—p. 97.
- *Syphilitic Exophthalmic Goiter. A. Lévy-Franckel.—p. 99.
- *Raynaud's Disease and Syphilis. L. Giroux.—p. 100.
- *Drop in Blood Pressure under Arsenic. A. Touraine.—p. 103.
- *Practical Points. H. Gougerot and others.—p. 104.

Recent Progress in Skin Disease and Syphilis.—Gougerot reviews the achievements during the war in this line, mentioning Sicard's rachialbuminometer to measure the albumin in the cerebrospinal fluid. He says that arsenical treatment has modified syphilis so that it may enter the tertiary stage from the start; lesions of all three phases have been known to develop together of late. Syphilis represents a blending of immunity and sensitization, and there may be all forms of transitions between the complete, though retarded, secondary explosion and latent syphilis. This warns that the cure may be deceptive; several instances of supposed reinfection have proved to be merely delayed manifestations. "No new sign or method of treatment has been discovered, and the confidence in the Wassermann test is not so blind as formerly." Gougerot adds "We no longer count the cases of deaths and accidents from 914; among the more impressive was Leredde's patient dying with a purpuric syndrome after the twenty-third injection; Courtois-Suffit's dying in the physician's office after the eighth injection, and the soldier, dying from paraplegia (Gougerot)." He is inclined to ascribe the mishaps mainly to toxic action from the arsenic plus symptoms from the accelerated "tertiarization" of the disease under the drug. In conclusion he reiterates that a syphilitic may be contagious even when he has no lesions or only tertiary manifestations. Also that a syphilitic may reinoculate himself, and that inherited syphilis does not immunize against new contagion.

Infestation with Lice as a Symptom of Disease.—Jeanselme has repeatedly noticed that the perfectly healthy may escape phthiriasis even when sleeping with lice-infested persons. The lice colonize by preference on the diseased, and hence severe phthiriasis should impel a search for serious, possibly latent disease.

Serodiagnosis in Skin Diseases.—Joltrain expatiates on the facility and reliability of serodiagnostic measures applied to leprosy, mycosis and other skin diseases, although his experiences to date with skin cancers have been conflicting.

The Herxheimer Reaction.—Milian explains anew that the inflammatory reaction in the syphilitic tissues under the influence of specific treatment, known as the Herxheimer reaction, is the cause of jaundice, albuminuria and other symptoms which have been mistakenly ascribed to direct toxic action from the medication.

Syphilitic Meningitis.—Bloch argues that what we have been calling "neurorecurrences" and "meningorelapses" are in reality the paroxysmal flarings up of an inadequately

reated meningovascularitis. When the Wassermann reaction persists positive after vigorous treatment, the possibility of this must be borne in mind. Local intraspinal medication has given good results.

Syphilis and Exophthalmic Goiter.—Lévy-Franckel was one of the first (1911) to report improvement or the cure of exophthalmic goiter under treatment for suspected or certain syphilis. The exophthalmic goiter may be the precursor of tabes, and he has accumulated data to confirm that syphilis may be responsible not only for exophthalmic goiter but also for various pluriglandular syndromes.

Raynaud's Disease and Syphilis.—Giroux regards Raynaud's disease as often merely a manifestation of syphilitic disease of the arterioles.

Drop in Blood Pressure Under Arsenical Treatment.—Couraine warns that the "nitritoid crisis" is the result of the depressing influence of the arsenic on the blood pressure, saying that it can be easily warded off with epinephrin. The amount should be graduated to the dose of the arsenical preparation. His formula is one fourth as many milligrams as of centigrams of the arsenic.

Minor Practical Points.—Among those mentioned are the danger from intraspinal treatment in tardy syphilis. Tzanck emphasizes that a subarachnoid injection is practically merely an intralymphatic injection, all the drug being soon reabsorbed in the thoracic duct. On the other hand, an axis cylinder that has been touched with syphilis is more vulnerable than under other conditions. At most, he endorses injecting the drug by the vein, withdrawing lumbar puncture fluid at the same time. With tenacious secondary meningitis, however, intraspinal injections, he declares, are harmless and effectual.

Presse Médicale, Paris

Dec. 3, 1919, 27, No. 73

Cystoradiography. F. Legueu and E. Papin.—p. 733.

Stretching of the Liver with Gallstones. M. Goullioud.—p. 735.

Bladder Radiography.—Legueu and Papin express surprise that the technic for pyelography has not been applied more systematically to the bladder. They have been using this cystoradiography, as they call it, since their publication on the subject in June, 1912, but found no reference to this method in the literature until Kelly's work in March, 1913. They have injected air, oxygen, bismuth, etc., but have found thorium sulphate or nitrate the best substances for the purpose. Thorium nitrate forms a solution which is not irritating or toxic, does not stain, and is less expensive than silver salts, etc. If a radiograph is taken of the bladder filled with the fluid, and then again after the bladder is emptied, any diverticulum shows up plainly, and this may explain the failure of persevering treatment, when cystoscopy has failed to reveal it. In one case two diverticula were thus revealed which had long maintained suppuration. Six instructive radiograms are given to show the different aspects of various lesions. A large tumor projecting into the contrast fluid renders the shadow within its outlines much lighter. In some cases the ureter mouth was gaping and the contrast fluid spread up through the congenitally dilated ureter, sometimes even into the pelvis.

Elongation of the Liver.—Goullioud describes with illustrations what he calls the *languette hépatique*, or tongue-like projection of the liver, secondary to congestion and retention of bile from severe gallstone trouble. The heavy organs dragging on the liver, with extension to the liver of the processes of sclerosis. The corset may be an additional factor, but this localized hypertrophy of the right lobe of the liver has been found in men. It usually accompanies grave surgical gallstone disease and is an important sign of the latter. In any event, it should not be mistaken for the distended gallbladder.

Gazzetta degli Ospedali e delle Cliniche, Milan

Oct. 16, 1919, 40, No. 83

Magnesium Sulphate in Spasmophilia and Whooping Cough. G. Genoese.—p. 891.

Magnesium Sulphate in Spasmophilia and Whooping Cough.—Genoese gave intramuscular injections of a 25 per

cent. solution of magnesium sulphate in four cases of severe spasmophilia and in four of severe whooping cough. No benefit from the injections was apparent and no purgative action followed. The drug increased diuresis, and he ascribes to its rapid elimination through the kidneys the lack of any appreciable effect on the nervous system.

Oct. 19, 1919, 40, No. 84

Malaria during the War. P. Finizia.—p. 901. Conc'n in No. 85, p. 915.

Oct. 30, 1919, 40, No. 87

*Eruption from Contact with Spoiled Grain. G. Romiti.—p. 941.

Eruption from Contact with Spoiled Grain.—Romiti reports several epidemics since 1915 of a papulous, eruptive dermatosis, with intense itching and high fever for from six to twelve hours. Only those persons were affected who had carried or otherwise handled grain subject to a special pathologic process, requiring the so-called scalding, or had handled flour from such grain, or clothing that had been in contact with it. In some cases the febrile eruption returned several times in succession, at intervals of three, five or seven days. Treatment was restricted to removal of the cause, hot baths and symptomatic measures.

Policlinico, Rome

Oct. 26, 1919, 26, No. 43

*U Incision for Abdominal Wall. G. Ruggi.—p. 1253.

*Reflex Dysmenorrhea with Ozena. I. Dionisio.—p. 1262.

*Mercury by the Vein in Grave Infections. S. Mello.—p. 1263.

Calcium Salts in Local Tuberculous Processes. Silvestri.—p. 1266.

Prophylaxis of Goiter in Italy. G. Pighini.—p. 1267.

U Laparotomy Incision.—Ruggi says that he was the first to make a transverse abdominal incision (published in 1890), and he now lauds the advantages in certain conditions of a large reversed U incision, the arms starting 4 cm. above the middle of the inguinal fold, and the curving line crossing the abdomen about 6 cm. above the umbilicus. This allows a broad flap to be turned back on the pubis. He explores the abdomen thus widely opened up, proceeding from the sound portions to the more pathologic areas. It answered requirements to an unexpected extent in a case described in which there were two fecal fistulas left from a gunshot wound.

Reflex Action from Ozena.—As the ozena subsided under treatment, the complete cure of the associated disturbances confirmed their reflex character. They included headache, nocturnal enuresis, tenesmus of the bladder, and dysmenorrhea.

Mercury by the Vein in Grave Disease of the Blood.—Mello as a last resort in three cases of puerperal or typhoid or other fever injected 2 or 3 mg. of mercuric chlorid by the vein twice in one day, and then for two days 4 mg. twice, and the apparently moribund patients recovered.

Nov. 2, 1919, 26, No. 44

*Pseudo-Ileus from Ureter Calculus. C. Frugoni.—p. 1285.

*Fontana Stain for the Pale Spirochete. L. Nardelli.—p. 1288.

Aneurysm of the External Iliac. A. Venturi.—p. 1297.

Serotherapy of Malta Fever. S. Spampinato.—p. 1299.

Pseudo-Ileus from Calculi in Ureters.—Frugoni reports three cases of this kind, the obstruction of the bowel stopping when the impacted calculus in the ureter was finally passed along. There is usually a history of more or less suggestion of kidney colics, and the cramps develop suddenly, diffuse or localized in colon or rectum, with tenesmus and pains suggesting a rectal tabetic crisis. The abdomen becomes distended and tender, and there is no passage even of flatus. A tendency to hydronephrosis clears up the diagnosis at once. Micturition is not modified but there is microscopic hematuria. The complete arrest of flatus and stools does not usually last more than two or three days, and then the symptoms subside as the calculus drops into the bladder or is expelled. In two of the cases reported his diagnosis saved the patients from a needless operation. The general aspect is less grave than with actual intestinal ileus; vomiting is rare and less insistent; the rectal tenesmus is accompanied by lancinating pains, and the meteorism is rapid and diffuse, without partial or segmental peristalsis.

Archivos Latino-Amer. de Pediatría, Buenos AiresJuly-August, 1919, **13**, No. 4

- Report of Child Welfare Section of Public Health Service of State of S. Paulo. C. Ferreira.—p. 321.
 Annual Report of Pediatric Society. C. Pelfort.—p. 351.
 *Multiple Fractures in Twelve Day Babe with Inherited Syphilis. S. Satanowsky.—p. 361.
 *Infectious Purpura in Boy of Six. F. C. Garzón.—p. 369.
 *Foreign Bodies in Children. J. C. Munyo.—p. 373.

Spontaneous Fractures in Young Infant.—Satanowsky describes a typical case of osteogenesis imperfecta which had entailed multiple and spontaneous fractures from the first day after birth and onward. The enlarged spleen subsided promptly to normal size under treatment for the inherited syphilis but the defective bones showed no change. Radiography shows less calcium salts than normal and that their distribution is irregular. The periosteum is not adherent to the bone below and the compact bone is much thinner than usual. At the age of 6 months the child was unable to sit up, and during a bath, the humerus fractured on both sides and the tibia on one, and the child died the next day, with fever. The ductless glands were of normal aspect.

Infectious Purpura.—In Garzón's case the boy of 6 presented a series of inflammatory foci in bone, extremely tender, but disappearing rapidly and spontaneously, and without a trace of fever at any time. The multiple accompanying ecchymoses and petechiae confirmed the presumptive diagnosis of infectious purpura. The child a few months before had required two operations for a traumatic abscess in the parietal region of the skull. The infectious purpura ran its course in a little less than a month.

Foreign Bodies in Children.—Munyo describes the extraction of a foreign body drawn into the trachea and three esophagus cases.

Brazil-Medico, Rio de JaneiroJan. 11, 1919, **33**, No. 2. Received Dec. 26, 1919

- Bovine Babesiosis and Anaplasmosis. H. de Beaurepaire de Aragão.—p. 9.
 Acquired Feeble-mindedness. H. de Brito Belford Roxo.—p. 10. Concluded in No. 3, p. 17.

March 29, 1919, **33**, No. 13

- Estimation by Opacity of Doses for Vaccine Therapy. A. Marques da Cunha and Cassio Miranda.—p. 97.
 Syphilitic Fever. J. C. Ferreira.—p. 97. To be cont'd.
 Phenomena after Experimental Injection of Nicotin. M. Ozorio de Almeida.—p. 101.

Gaceta Médica de CaracasOct. 15, 1919, **26**, No. 19

- Treatment of Appendicitis. J. C. Rivas Morales.—p. 199.
 *Cysts in the Liver. R. Soto G.—p. 200.

Liver Cysts in Venezuela.—As a contribution to the debated question whether hydatid cysts occur in Venezuela, Soto describes a case of a solitary nonparasitic cyst in the liver and remarks that the turbid contents and the site differentiate these solitary cysts from hydatid cysts. The solitary cyst is generally accompanied by other congenital anomalies, and always with anomalies in the liver itself. His patient was a multipara of 46, and the abdomen was opened on the assumption of gallbladder disease. There had been symptoms from the liver cyst for fifteen years, and four punctures recently had evacuated 1 or 2 liters of fluid resembling bile at first, and later purulent. He was unable to remove the capsule of the cyst, as he attempted, and merely drained it after suturing it to the lips of the incision.

Medicina Ibero, MadridNov. 8, 1919, **9**, No. 105

- *Operative Treatment of Prolapse of the Uterus. F. Luque.—p. 97.
 Influenza at Bilbao in 1919. A. López.—p. 101.
 Treatment of Osteomyelitis. A. M. Arquellada.—p. 113. Conc'n.

Prolapse of the Uterus.—Luque gives fifteen illustrations of different ways of correcting genital prolapse, and says that in the more serious cases the results are exceptionally dependable with Wertheim's method of utilizing the uterus itself to reinforce the floor of the pelvis. The bladder then lies on top of the uterus. Wertheim has lately modified his

technic by pulling down the fundus of the uterus a little, which causes the cervix end to pivot up, and he sutures this cervix end to the sacro-uterine ligaments, thus holding the uterus slanting instead of horizontal, and the cervix at a point where it is impossible for it to work loose and sag down to the vulva.

Nov. 29, 1919, **9**, No. 108

- *Accidental and Constitutional Psychoneuroses. E. Fernández Sanz.—p. 157.
 History of Medicine in Spain. L. Lasbennes.—p. 159.
 *Treatment of General Paralysis. G. R. Lafora.—p. 161.

Psychoneuroses.—Fernández expatiates on the difference in the outlook between what he calls constitutional and accidental psychoneuroses. The constitutional is continuous, with waves of aggravation and remission, while other psychoneuroses are intermittent, with relapses, separated by periods of latency. The constitutional group includes hysteric and psychasthenic psychoneuroses; the accidental group includes the cases of neuropsychic asthenia, anguish and simple depression. The prognosis is better with this latter group. He warns in speaking to patients to avoid the term "constitutional" in this connection as liable to depress them.

Progressive Paralysis.—Lafora reiterates that three years of experience have convinced him that general paralysis in the first six months is capable of complete remission under appropriate treatment. (His latest report was summarized in THE JOURNAL, Dec. 6, 1919, p. 1808.) The main thing now is to detect it during these first six months or better yet, before it has induced the classic symptoms. This is possible by systematic periodical exploratory lumbar puncture, and he describes two cases in detail to show the importance of this. The two syphilitic men of 36 and 49 presented an almost identical clinical picture, insomnia, a tendency to aphasia and absentmindedness but no hallucinations, etc. As only two years had elapsed since infection in the younger man, the diagnosis of cerebral syphilis seemed certain in his case, while progressive paralysis seemed equally certain in the other case, the symptoms not coming on until twenty-three years after infection. But the lumbar puncture fluid told another story, the findings showing general paralysis in the younger man and merely vascular syphilis in the other—all confirmed by the later course of the cases.

Prensa Médica Argentina, Buenos AiresNov. 10, 1919, **6**, No. 16

- *Auricular Flutter. H. L. Caretti.—p. 157.
 Activity of the Curare of the Amahuacas Indians. J. Guglielmetti and G. Pacella.—p. 160.
 *Hematoma in Suprarenal Capsule. Bacigalupo and Perazzo.—p. 161.
 *Brück's Precipitation Serochemical Test. Mazza and Bárriga.—p. 162.
 Hepatoma in Young Infant. A. Casaubon and J. Bacigalupo.—p. 163.

Auricular Flutter.—Caretti gives several tracings from a case of auricular flutter in a man of 64. The auricular flutter was scarcely modified in the least by a vigorous course of treatment with digitalis, which suggests that the condition will probably merge into heart block before long.

Hematoma in Suprarenal Capsule.—The hemorrhage in the suprarenal in the 4 days' infant proved speedily fatal. Some injury during the birth process was evidently responsible for it as also in Delucca's two cases in newly born infants with difficult delivery.

The Globulin Precipitation Reaction.—Mazza and Bárriga report positive findings with the Brück globulin precipitation reaction, harmonizing with the Wassermann reaction in 78 per cent. of the 150 cases examined. They obtained a positive precipitation reaction with negative Wassermann only in two out of the 150. By estimating the results in less than twenty-four hours, the proportion of nonspecific reactions is much less.

Revista Médica del Uruguay, MontevideoSeptember, 1919, **22**, No. 9

- Obstetric Manikins. J. A. Beruti.—p. 663. See abstract p. 140.
 *Chronic Constipation. C. Robertson Lavalle.—p. 680.
 *Partial Tetanus. A. Rodríguez Castro.—p. 691.
 *Hydatid Cysts in Uruguay. Victor Zerbino.—p. 695.

Surgical Constipation.—Robertson applies this term to chronic constipation rebellious to systematic medical treat-

ment, and describes the various surgical measures required for different conditions. He warns that the tissues should be kept from drying out by copious injections of physiologic saline. This is particularly necessary with operations on the colon, as absorption of water from the colon is thus prevented. He emphasizes the paramount importance of post-operative treatment, insisting in particular on ample supplies of water. This tends to reduce vomiting after general anesthesia, which puts such a strain on the sutures. After fixation of organs he keeps the patients in bed with the feet raised 15 cm. and feeds abundantly to fatten, guarding against gas production and the use of purgatives.

Partial Tetanus.—The young child developed fatal cephalic tetanus after an injury of the palate from a splinter of wood which had thrust into its mouth. This is the third case of partial tetanus recorded in Montevideo during the last eleven years.

Hydatid Cysts in Uruguay.—Zerbino remarks that the hydatid cyst is one of the scourges of Uruguay and is a national disgrace, as this is one of the most easily exterminated of diseases. In the public hospital of Montevideo the number of cases has increased from 11 in 1896 to 165 in 1915. The total figures include 216 cases in children representing 4.34 per cent. of the hospitalized children; the adults formed 1.32 per cent. of the total hospitalized. Throughout the country the proportion approximates one hospitalized case per five thousand inhabitants. The statistics show that the disease affects children and the young predominantly, up to the age of 30 or 35. The liver and lungs were the seat of the lesion in over 60 and 21 per cent., respectively, in children, and over 54 and 23 per cent. in adults; the brain in 82 per cent. in children; none in adults. Cases in adults are probably listed as cerebral tumors, etc. The bones were the seat in 0.83 per cent. in adults; none in children. Multiple localizations were found in over 3 per cent. in children; none in adults. In 106 children with hydatid cysts, the cyst suppurated in nearly 19 per cent.

Acta Scholae Medicinalis Univ. Imp. Kioto

Sept. 1, 1919, 3, No. 2, German Edition

Action of Nicotin on Muscles. K. Okushima.—p. 151.
Epinephrin and Heat Regulation. S. Kondo.—p. 169.
Autolysis of Vitreous Body. Y. Hijikata.—p. 207.
Sodium Oxalate, Citrate and Tartrate. S. Hara.—p. 213.
Agglutinability of Vibriones. T. Toyoshima.—p. 233.
Action of Gases on Muscle. A. Gohara.—p. 239.
Action of Epinephrin, etc., on Skeletal Muscle. K. Okushima.—p. 261.
Histology of Corneoscleral Junction. K. Hiwatari.—p. 277.
Influence of Thyroidectomy on Gestation. T. Ukita.—p. 287.

Action of Nicotin on Skeletal Muscles.—Okushima's research on frogs indicates that nicotin excites the motor nerve terminals. Its action on muscle substance is first stimulating and then paralyzing. It is able to check the paralyzing action of curare to a certain degree.

Action of Epinephrin on Heat Regulation.—Kondo found the influence of epinephrin on the temperature negligible except when it was injected directly into the brain. By this route even a small amount sends the temperature up at once, unless this effect is checked with antipyrin or by long fasting. Intracerebral injection of saline or olive oil induces a very gradual rise in temperature, as also the subcutaneous injection of peptone and certain other substances.

Production of Lactic Acid in Autolysis of Organs.—The vitreous body contains lactic acid, and the amount increases during autolysis.

Toxic Action of Sodium Salts of Oxalic, Citric and Tartaric Acid.—Hara's research on mice demonstrated that the toxicity of these salts does not parallel their calcium-precipitating power, but this latter seems to be responsible for their action in enhancing the narcotic effect of magnesium sulphate.

Agglutination of Vibriones.—Toyoshima warns that non-toxic vibriones are liable to be agglutinated with cholera serum, and he theorizes to explain the reason for this. Exact differentiation, he reiterates, requires the Pfeiffer test reaction.

Electric Test of Action of Gases on Muscle.—Gohara describes the effect of electric stimuli on surviving mam-

malian nonstriated muscle under the influence of gases. The organ studied was the rabbit spermatic cord, and the gas was carbon dioxide. The electric apparatus devised for the purpose is illustrated. The gas displayed a paralyzing action.

Action of Epinephrin, Amins and Amino-Acids on Skeletal Muscle.—Okushima reports that epinephrin and the aromatic amins stimulate the skeletal muscle in small doses but paralyze it in higher concentrations. The action seems to be exerted on the terminal motor nerves.

Influence of Thyroidectomy on Gestation.—Ukita expatiates on the vast field for research on endocrine functioning by acting on the various ductless glands during pregnancy, and watching the effect on the fetus and on the progress of gestation. Thyroidectomy early in gestation in rabbits confirmed the intimate relations between the mother and the fetus, and that the thyroid is an extremely important factor in the development of the fetus and the normal course of gestation. The latter was prolonged to twice the normal time; the young were small and weak, and the centers of ossification abnormal, while the fetal thyroid gland was hypertrophied, and the development after birth was not regular. It is evident that the thyroid of the fetus has some activity even in the uterus, the hypertrophy suggesting a compensating process. This article is in English.

Archiv für Kinderheilkunde, Stuttgart

May 17, 1919, 67, No. 3-4

*Fate of Syphilitic Children. E. Müller and G. Singer.—p. 161.

*Acid Reaction of Blood in Relation to Albumin Requirement. Gertrud Fuhge.—p. 291.

Fate of Thoroughly Treated Syphilitic Children.—Müller and Singer review the experiences since 1909 when the first Welander home for children with inherited syphilis was inaugurated in Germany. They devote nearly 130 pages to the tabulated findings year by year in 214 children who have been inmates of the institution, and call special attention to eighty-four who have been kept under surveillance for two, four, nine or ten years. All this material is classified according to treatment and other features of the cases. The data demonstrate that far better results were realized by this prolonged systematic treatment than by other means, but the final judgment will be possible only when the children get to be 30, 40 or more years old. But even already it is evident that the most serious consequences of congenital syphilis can be essentially attenuated or even completely cured. The mortality differed widely in different years; of late the children seemed to succumb to the syphilis itself and not to intercurrent disease so much as formerly, especially the infants. The total mortality among 202 syphilitic children was 22.8 per cent. The Wassermann reaction was negative on the final examination of the sixty-nine children given the full course of treatment. The children were given usually from seven to nine courses of treatment as they lived in the institution for three or four years.

The Acid Reaction of the Blood and the Albumin Requirement.—Fuhge relates that on the prevailing vegetable diet, with little meat, examination of the urine of 150 children in different children's asylums, all on the same day, showed an alkaline reaction, almost without exception. Only on the days with meat was the reaction neutral or acid. Five healthy children were given calcium chlorid, aiming to make the urine acid on the common diet. This was accomplished with 2 or 3 gm. in boys of about 12. These experiences demonstrate that calcium chlorid acts as an acid in the metabolism. This was evident from the increased ammonia content of the urine. Nothing was observed to indicate that the preponderance of an acid or alkaline reaction affects the nitrogen requirement, but the fact that calcium chlorid behaves as an acid suggests caution in its prolonged administration to children.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Nov. 20, 1919, 49, No. 47

*Apparatus Alleged to Help the Deaf. E. Oppikofer.—p. 1769.

*Electric Accidents Affecting the Ear. F. Nager.—p. 1778.

*Epithelioma of the Trachea. T. Hug.—p. 1783.

*The Protection Afforded by Influenza Masks. A. Lauterburg.—p. 1786.

Apparatus Claimed to Help the Deaf.—Oppikofer gives illustrations of his collection of twelve specimens of what he calls *schwindelhafte Ohrapparate*. He urges that similar collections should be in every ear clinic so that the deaf can see for themselves and have explained to them what frauds these "thermo-electric tympanums," audiphones, acoustiphones, electromagnetic microphones, etc., in reality are. The devices mentioned above cost, respectively, 75 francs, 20, 325 and 35 francs. Oppikofer declares in conclusion that these frauds not only obtain money under false pretenses but they are liable to do direct damage to the ear and cause the postponing of proper treatment in time for it to be effectual, and hence he thinks the state should forbid the advertising of such fakes. Some of the cantons in Switzerland have already imposed certain restrictions, but they are few and not always enforced. There is no federal legislation on the subject of quackery. Until all the states and neighboring states set energetically to work, these quacks that prey on the deaf will continue to reap their harvest.

Electric Injury of the Ears.—Switzerland has averaged from 50 to 100 serious electric accidents in the last few years and the number is increasing. Nager reports a case of injury of the ears from a live-wire accident, and summarizes four similar cases on record. Any part of the ear may be injured by the electric accident and the examiner afterward should bear this in mind as also the possibility of injury from the detonation alone, as the current is short-circuited. The detonation was regarded as the main factor in the personal case described, and the man was given 2,000 francs compensation for the unilateral cochlea injury.

Influenza Masks.—Lauterburg describes fifty-two sets of experiments which determined that the usual influenza masks are readily permeable for bacteria.

Nov. 27, 1919, 49, No. 48

*Pharmacology of Circulation in the Lungs. P. Wolfer.—p. 1817.

*Rhino-genous Headache. E. Gallusser.—p. 1823.

*Hallux Valgus. H. v. Salis.—p. 1833.

The Pharmacology of the Circulation in the Lungs.—Wolfer describes some devices with which it is possible to study the effect of different drugs on the circulation in the lungs. The data thus recorded apparently demonstrate that the intrapulmonary circulation is independent of the greater circulation. The two seem designed to supplement, compensate, and balance each other. Different drugs act differently on the two circulatory systems. For example, epinephrin seems to passively and perhaps also actively dilate the vessels of the pulmonary circulation.

Rhino-genous Headache.—Gallusser emphasizes that some long unsuspected nasal disease, which has never given any recognized subjective or objective signs of its existence, may entail headache for which no cause can be discovered. He describes a number of cases of this kind and warns of certain features that might suggest the clue. The headache is generally in the frontal region, a sense of oppression, a heavy feeling in the whole head, with occasional paroxysms of severe pain. The severe pain usually develops on arising in the morning (from change of position) and wears off later, but the headache may come on very severe at any hour after sneezing, bending over or emotional stress. This is liable to give the pain a misleading neuralgic character. Another symptom is the pain on pressure of the internal angle of the eye, over the frontal sinus. The most violent pains also are sometimes promptly and completely relieved by cocain to the upper interior of the nose. This immediate relief by cocain calls for exploratory opening of the frontal sinus. One man of 48 had had headache on the right side daily for ten years, incapacitating him at times, but none of the numerous physicians consulted had ever detected any symptoms on the part of the nose. No treatment had given any relief and he had been exempted from military service on account of habitual headache. Tapping the right side of the skull and pressure on the roof of the right orbit were painful. The middle turbinate was unusually thick. To get a better view, Gallusser pushed this turbinate to one side, and the patient exclaimed at the relief this afforded. This

encouraged high resection of the middle turbinate, opening the frontal ethmoidal cells and exposing the opening into the frontal sinus. Nothing pathologic could be detected, but the headache was cured once and for all. In another case long martyrdom from headache was cured by opening up the frontal sinus although nothing pathologic could be detected in it except that it was extremely sensitive to the probe. This woman of 44 tried to commit suicide on account of her headaches, which by exclusion had been long qualified as nervous. In neither of these two cases was any sign of suppuration found.

Treatment of Hallux Valgus.—Salis reviews his experience with 286 cases of hallux valgus and describes his successful conservative treatment of the milder forms.

Deutsche medizinische Wochenschrift, Berlin

Nov. 6, 1919, 45, No. 45

*Protective Function of the Skin. E. Hoffmann.—p. 1233.

Effect on Health of System of Food Rationing Adopted in Denmark.

M. Hindhede.—p. 1236; Reply. M. Rubner.—p. 1237.

*Effect on Growth of Lack of Minerals in Food. P. Grabley.—p. 1238.

*Nerve Grafting. R. Eden.—p. 1239.

*Intra-Abdominal Injection of Air for Roentgenoscopy. K. von Teubern.—p. 1242.

The Diagnosis of Meningitis. D. Kulenkampff.—p. 1243.

Experiences with F. F. Friedmann's Tuberculosis Remedy. O. Roepke.—p. 1244

Pain in Cuneiform Bones of Foot. H. von Salis.—p. 1249.

*The Treatment of Erysipelas. F. Bardachzi.—p. 1250.

By-Effects of Acetylsalicylic Acid. Friedemann.—p. 1251.

Health Resorts and Hydrotherapeutic Sanatoriums. L. Feilchenfeld.—p. 1251.

Reorganization of Medical Curriculum. J. Schwalbe.—p. 1252. Conc'n.

An Esophylactic (Protective) Function of the Skin.—Hoffmann has been much interested in Bruno Bloch's opinions on "Dermatology in Relation to Problems of Metabolism and Immunity," as expressed in a course of lectures delivered at the University of Zürich. He believes, with Bloch, that the skin has an important biologic function that has not been fully recognized. By virtue of this function the vital organs are protected to a great extent against disease germs. This he regards as one of the main points of contact between dermatology and general medicine. Bloch had been led to the consideration of this question by the results of the recent investigations on the allergetic reaction of the skin in trichophytosis, tuberculosis and syphilis. Bloch emphasizes that the skin plays the most important part in the phenomena of allergetic immunity and of hypersusceptibility, whereas in tetanus, diphtheria, etc., the blood is the carrier of the prophylactic forces. This may perhaps be compared to the protection afforded a country by its land and naval forces. The fact that when the skin is extensively affected in tertiary syphilis and lupus, the internal organs so frequently escape, and the part played by the skin in overcoming exanthematous infectious diseases, sustain this assumption. But more especially the recent investigations of the allergetic function of the skin, together with the undeniable therapeutic effect of general light baths, lead Hoffmann to believe that the skin must produce immunizing materials that exert a healing influence for, in view of the slight penetrability of the short-wave rays used in phototherapy, he can find no other explanation. Owing to its importance in connection with biology and general pathology, he reports in detail the various angles from which he has viewed the assumption of such a distinct function of the skin, thinking that the hypothesis would have at least heuristic value, that is, might incite others to research.

Effect on Growth of Lack of Minerals in Food.—Grabley remarks that all admit that the restricted war diet was the cause of many disturbances of growth and metabolism, but all are not agreed as to exactly what ingredients were lacking in this diet. Many emphasize the lack of variety, others the deficiency in fat and protein, others the absence of vitamins. Very few mention the metabolism of mineral substances, but this, Grabley thinks, is of vital importance. The normal functioning of the cells, as has been shown by the study of the cell nucleus, depends on the optimal isotonicity of the cell fluid. To insure this, necessary mineral sub-

stances must be present. Various deficiency diseases result partly no doubt from the lack of vitamins, but even more from the lack of mineral substances. Schiff ascribes edema to extensive damage to the cell structure which upsets the water balance in the body and causes faulty metabolism of mineral substances. Grabley holds that just the reverse is true; namely, that the faulty metabolism of mineral substances in the cell is due to the deficiency of these substances in the diet. The demineralization of the cell produces the water imbalance, causes extensive damage to the cells, interrupts cell functioning, and finally destroys the cell nucleus and the cell. Grabley cites in support of his views the conclusion reached by R. Berg, the physiologist and chemist, to the effect that hemophilia is due to a disturbance of the balance of mineral substances in the blood. Grabley accepts the theory that the sources of energy in the animal organism, in short, life itself, are derived from electrochemical and electrophysical processes. Purely organic substances and their solutions remain chemically and physically inactive until they are mixed with inorganic salts; then the chemico-physical and the electrolytic processes in the cell fluid begin; hence the importance of inorganic salts in the human dietary.

Nerve Grafts.—Eden reports an unsuccessful attempt at nerve grafting after a shell wound of the right arm. The wound healed but left radial paralysis. The radialis was laid bare and a defect 10 cm. in length was discovered. A corresponding segment of a popliteal nerve from an amputated limb was used to bridge the gap, the transplant being fixed by means of fine epineural interrupted sutures and imbedded in healthy subcutaneous tissue at a safe distance from the scars. The wound healed promptly, but the after-treatment by means of electricity and massage was without result. Nine months after the original operation the region of the transplant was reopened. The transplant bore little resemblance to a nerve but looked more like a rough strip of connective tissue. The transition from the nerve to the transplant was gradual, so that the ends of the transplant could not be definitely located. Stimulation by means of a strong electric current brought no reaction. The transplant was therefore removed and the peripheral end of the nerve was grafted into the median.

Injection of Air Into the Peritoneum for Roentgenoscopy.—Von Teubern thinks this method of pneumoperitoneum has considerable value. The procedure is, however, somewhat painful, and its use will doubtless be confined to cases in which other, less painful methods have not accomplished the desired result.

Treatment of Erysipelas.—Bardachzi did not find colloidal liver preparations, radium, etc., effectual in the treatment of erysipelas. He believes that none of the specific methods are superior to conscientious symptomatic treatment. He recommends compresses moistened with dilute Burow's solution and laid on the affected parts, and prescribes acetylsalicylic acid several times a day. In all severe cases digitalis is indicated. The results of this treatment in 183 cases lead Bardachzi to believe that no specific treatment will accomplish more.

Münchener medizinische Wochenschrift, Munich

Sept. 19, 1919, 66, No. 38

- Osteoporosis and Osteomalacia. Alwens.—p. 1071.
Skin Reaction in Typhus. E. Friedberger and van der Reis.—p. 1075.
Agglutination in Typhus. V. van der Reis.—p. 1077.
Unshot Wounds of the Ear. Haymann.—p. 1078.
Supernumerary Tarsal Bones. Baisch.—p. 1081.
Technic of Examination for Pale Spirochete. Oelze.—p. 1082.
Determination of the Wave Length of Homogeneous Roentgen Rays. T. Christen.—p. 1084.
Ultraviolet Phototherapy for Disabled Soldiers. Zimmermann.—p. 1085.
Viscous Physiologic Sodium Chlorid Solution. O. Kestner.—p. 1086.
Silver Salvarsan Sodium and the Wassermann Reaction. W. Schönfeld and G. Birnbaum.—p. 1087.
Spontaneous Pneumothorax in Pneumonia. P. Prym.—p. 1089.
Fatal Case of "Luminal" Poisoning. E. Hueber.—p. 1090.
Influenzal versus Lethargic Encephalitis. Von Sohlern.—p. 1091.

Undernutrition in Relation to Osteoporosis and Osteomalacia.—Twenty-six cases of a disease of the bones were observed at Frankfort-on-the-Main between March and June,

1919. The age limits were 19 and 72, 65 per cent. of the 23 women being of the climacteric and postclimacteric age. The women were of the poorer class, and 16 of the patients admitted their nourishment had been deficient; namely potatoes, turnips, thin soup, war bread and the small meat ration. Milk, eggs, cheese and butter were lacking. Most of the women weighed under 110 pounds. In many, emaciation was far advanced; 7 had had rickets, 15 presented curvatures of the spine. Some were confined to bed. Spontaneous fractures had occurred in 10 cases. Dragging the feet was common. Alwens describes these conditions at length and his diagnosis is osteoporosis from undernutrition (deficiency of protein, lime and phosphorus). The rapid development of the pathologic symptoms, the effects on the thorax and the spine, and the lack of typical pelvic changes were features differentiating the syndrome from osteomalacia, though the clinical picture suggested osteomalacia, and this may develop later. In osteoporosis Alwens recommends a diet of high caloric value, with special attention to the protein, calcium and phosphorus content. Phosphorus in 0.5 mg. doses, three times daily, taken with cod liver oil, was found helpful. Calcium lactate, 3.0 gm. daily, is also indicated. Epinephrin did not prove beneficial. Prompt, distinct and continued improvement usually followed treatment.

Specific Typhus Skin Reaction.—Friedberger and van der Reis relate that an emulsion of the bacillus with which the agglutination test is made in typhus induces a pronounced inflammatory reaction when injected subcutaneously in the healthy and in diseases other than typhus, but there is no reaction in typhus patients. The lack of the usual reaction is thus a sign of the presence of typhus. They call the bacillus used the Weil-Felix bacillus X 19. (The bacillus used commonly for the agglutination test is the proteus X.)

Zeitschrift für Geburtshülfe und Gynäk., Stuttgart

May 31, 1919, 81, No. 2

Mesodermal Mixed Tumor in Pouch of Douglas. O. v. Franqué.—p. 285.

*Basal-Cell Cancers of the Uterus. E. Krompecher.—p. 299.

*Progress in Roentgen Technic. F. Winter.—p. 339.

Embryology of the Hymen. O. Küstner.—p. 353.

*Viability of Premature and Weakly Infants. H. Schmitt.—p. 382.

Estimation of the Fetus as a Living Being. F. Ahlfeld.—p. 394.

*The Limit of Viability of the Prematurely Born. F. Ahlfeld.—p. 400.

*Diseased Uterine Adnexa and the Appendix. O. Beutner.—p. 406.

*Pregnancy Dropsy. W. Zangemeister.—p. 491.

*Heart Disease and Pregnancy. K. Kautsky.—p. 559.

Basal-Cell Uterine Cancer.—Krompecher's article is based on 216 cases of uterine cancer. He was surprised to find that 75 per cent. of them represented basal cell cancers. He classifies this material, with several plates, showing the histology and origin. The solid type formed 63 per cent., while types such as are found mostly on the skin were very rare.

Roentgen Technic.—Winter writes from the Munich gynecologic clinic to extol the progress realized in radiotherapy and radiotechnic with the introduction of tubes of the Coolidge type with which he has been working since May, 1916.

Viability of the Prematurely Born.—Schmitt relates that 316 children weighed only from 700 to 2,200 gm. among the 8,881 born at the Würzburg maternity hospital in ten years. The mortality before the end of the year in this small group was 78 per cent. The smallest child that survived weighed 1,100 gm., but it is absolutely exceptional when a child survives that weighs under 1,500 gm. Even those that weigh from 1,500 to 2,000 gm. have very feeble vitality so that at most 25 per cent. survive the first year. There is no special physical inferiority for which the small weight can be incriminated. With children over 2,000, the prospects are favorable for 50 per cent. surviving.

The Limit of Viability of the Prematurely Born.—Ahlfeld reviews the literature on the nineteen smallest and earliest born infants that have been recorded. The periods of gestation were from the twenty-fourth to the thirtieth week, and the weight ranged from 500 (the tenth day of life) to 1,000 gm. He tabulates the details, and concludes that 750 gm.

at birth can be accepted as the lowest limit possible for a child to survive.

The Uterine Adnexa and the Appendix.—Beuttner takes nearly ninety pages for his data and arguments against systematic appendicectomy as a routine supplement to operations on the adnexa. Microscopic examination of the appendix in eighty-seven cases in which this had been done showed that the appendicectomy had been actually indicated only in four of the cases.

"Pregnancy Dropsy."—Zangemeister discusses the course and the connection between hydrops gravidarum and kidney disease or eclampsia, as he studied it in 193 cases of "pregnancy dropsy." In the first place, he declares, the tendency to dropsy should be combated by avoiding ill ventilated and dusty air, chilling of the skin, constricting clothing, over-exertion, excesses in eating and drinking, especially of salt, not lying in bed too long, and not taking drugs which might injure the blood or vessel walls. These measures are particularly necessary if there is any tendency to slight edema, and if there has been a tendency to dropsy in a former pregnancy. When a tendency to slight dropsy has become apparent, but there is as yet no rise in blood pressure and no albuminuria or preeclamptic symptoms, then bed rest and restriction of the intake of fluids generally suffices to banish the hydrops, but this is not permanent until the weight has gone down under increased diuresis. This of course does not cure the causal abnormal permeability of the capillary walls, but the restriction of intake of fluids helps this by relieving the load in the vessels. The patients bear this well if the intake of salt is reduced, and also of solid foods, to keep the thirst down and relieve the metabolism in general.

There does not seem to be retention of salt by the kidneys, but its harmful influence is manifest in other ways. He warns against digitalis as not required in the mild cases, and as liable to bring on eclampsia in the grave cases. He saw this occur in two cases, the blood pressure running up and the convulsions developing. Measures to induce sweating never did harm in his experience. The special benefit from them he ascribes to the different distribution of the blood which they realize. He warns not to attempt the sweating procedures if the blood pressure indicates impending eclampsia. Decapsulation of the kidney may be considered in extreme cases, but not with developed eclampsia. Venesection and lumbar puncture may be necessary, or evacuation of the uterus. "In established eclampsia, reduce the pressure on the brain, reduce the tissue hydrops as the cause of the brain swelling responsible for the pressure, and fight off the attacks of high blood pressure which start the convulsions anew, but the first thing is to empty the uterus."

Heart Disease and Pregnancy.—Kautsky emphasizes that a pregnant woman with mitral stenosis, on account of the increased area of the circulation, is kept constantly in conditions like those of a nonpregnant woman continuously at hard work, day and night. Fully 40 per cent. of the pregnancies with mitral stenosis terminate in spontaneous abortion or miscarriage. He bases his treatment on these facts, and especially on his repeated experience that the demands even of a normal, uncomplicated pregnancy are enough to upset the compensation with a valvular defect.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 4, 1919, 2, No. 14

*Nervous Complications of Influenza. J. J. H. M. Klessens.—p. 970.

*Height and Weight of Children. C. J. van der Loo.—p. 976.

Remuneration of Sick-Fund Physicians. Vrendenberg.—p. 986.

*Cancer of Both Fallopian Tubes. T. B. Phillips.—p. 988.

Nervous Manifestations Complicating Influenza.—Klessens states that he encountered many pathologic nervous conditions associated with influenza, such as brachialgia, sciatica and persistent paresthesias. One patient gave evidence of encephalitic foci in the medulla oblongata, and transverse cervical myelitis occurred in another. Klessens ascribes the condition to one or more foci at the bulb. An apparent case of encephalitis pontis was noted. The leftsided paresis of the leg with exaggerated Achilles tendon reflex and diminished skin reflexes; the disturbances in hearing and the

hypalgesia in the trigeminal region suggested a pons lesion. Another patient presented dizziness, deafness, nystagmus, and falling backward when the eyes were closed. Here the lesion may have been in the cerebellum, though the fact that the direction of the falling was not affected by the position of the head speaks against this assumption; in this case there had been a middle ear infection. The conditions found in one case—dizziness, nausea, nystagmus to the right, a falling sensation, and deviation to the right in walking—Klessens ascribes to a lesion of the cerebellum. A child of 8 presented an especially interesting case of a lesion of Purkinje's cells, caused by the toxins of the influenza virus. The nystagmus, the disturbance in speech, the static ataxia and the dysdiadokokinesia form a syndrome that points to the cerebellum.

Height and Weight of Children.—Van der Loo tabulates the relative height and weight of 598 children between 6 and 12. He found thirty-one "scrofulous" children who averaged 0.36 kg. less in weight than the others, and seventy-five weak children, who averaged 1 kg. less. In children of a given age there was a divergence of about 6 kg. in weight and 30 cm. in height. The taking of height and weight awakens rivalry and serves as an aid to parents and physician in bringing weak children up to standard. A weight more than 1 kg. below the average is an indication for a careful examination of the child. The height is not so significant as the weight, as the divergence is much greater.

Cancer of Fallopian Tubes.—Philips' patient, an unmarried woman of 44, was still menstruating regularly, and the bilateral presumably primary papilocarcinoma of the fallopian tube was discovered only by chance. For about a year she had had a whitish, foul-smelling discharge from the vagina. There was no admixture of blood, but she felt herself growing weaker and was losing weight, and there was slight pain in the lumbar region. She had been referred to the hospital for atresia of the vagina, and an occluding membrane was discovered in the vagina. The uterus could not be distinctly outlined but on each side a growth was palpable apparently arising from the ovaries. The growths were removed by a laparotomy on the assumption of bilateral hydrosalpinx.

Ugeskrift for Læger, Copenhagen

Nov. 27, 1919, 81, No. 48

*Action of Small Doses of Roentgen Rays. Hjalmar Eiken.—p. 1849.

Action of Small Doses of Roentgen Rays.—Eiken has been experimenting with roentgen treatment in doses so small that the action of the rays seems to be restricted merely to a stimulating influence. Laboratory animals and fowls were treated in this way daily for months and then every third day up to a year, and none showed the slightest sign of injury therefrom. Their growth and procreation proceeded normally and their young procreated normally in turn. Similar experiments with animals inoculated with tuberculosis demonstrated that the reaction of the tissues to the tubercle bacilli occurred earlier and was more active than in the controls, the incipient foci healing. Applying these results to human beings, there seems a prospect of aiding the cure by this means in persons who display only a sluggish reaction, or the focus is located at a point where experience has always shown a torpid course. Without removing the clothing, the exposures were made for one minute from the front and from each side and for seven minutes from the back, and repeated every day or second day. The dose was $\frac{1}{700}$ and $\frac{1}{100}$ S. N. tablet. He gives the details of three cases of tuberculosis in which this treatment was applied. The stimulating action from it was unquestionable. The patients were 15 and 18 years old. In the superficial lesions the increased blood supply to the focus, the increased secretion and more pronounced demarcation were manifest, and then healing followed. One of the patients had tuberculous processes in lungs, cervical glands, in skin and in the tibia, with several fistulas. A total of 100 exposures were made, and all the fistulas and external processes healed. The bacilli disappeared from the sputum for a long time, but scanty bacilli have appeared in the sputum again recently.

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THE CLINICAL RÔLE OF THE FAT-SOLUBLE VITAMIN: ITS RELATION TO RICKETS*

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In the last few years, the subject of deficiency diseases has become one of absorbing interest for both the laboratory investigator and the clinician. In order that the advances in this field may proceed on firm ground, it will be necessary that step by step we compare and correlate experimental results with clinical experience. Perhaps the largest amount of work has been carried out on scurvy, both in this country and abroad, and has brought forth results that coincide remarkably for animals and for man. All diets leading to scurvy in the guinea-pig produce scurvy in man; all antiscorbutics are potent for both species; all signs and symptoms of the disease are common in some degree to both guinea-pig and man. There is, however, the important difference, namely, that in man the disorder is a slow, markedly subacute process, whereas in the guinea-pig it is almost an acute disease. This does not mean that this animal is not suitable for the study of scurvy, but merely that it is a hypersensitive reagent, and therefore not well adapted for fine quantitative experiments.

We shall not dwell on scurvy at length, confining our attention rather to so-called deficiency diseases that have been less fully developed. We should like to say a few words in general, however, about antiscorbutic foodstuffs. There is a widespread impression among laymen, hygienists and physicians that the drying of foods or their subjection to high degrees of heat necessarily destroys their antiscorbutic potency. It is important to realize that, although holding good in most instances, these results are not based on a biologic principle, for we are approaching a time when dried foodstuffs probably will be made wide use of. It has been shown by Holst and Froelich, Cohen and Mendel, and others, that under certain conditions vegetables may be dehydrated and retain their antiscorbutic value for months or years. It is likewise true that milk may be dried and yet preserve by far the greater part of its accessory factor. In two cases we were able to cure infants of scurvy by means of milk that had been dried by the Just process, and to protect them as long

as they were under observation, for at least three to seven months, by a dietary containing no further antiscorbutic food. It may be added that drying fixes the antiscorbutic principle, bringing it into a more permanent and resistant state, much as it does toxins and antitoxins. For example, milk that has been quickly dried by this method partially withstands subjection to 120 C. for one hour, whereas fluid milk loses practically all antiscorbutic virtue when heated to the same degree.

We shall not pursue this aspect of the subject further, but would point out that a most important factor, and one until recently entirely disregarded, is that of the original content of the foodstuff in antiscorbutic vitamin. Whether we consider vegetables or milk we cannot regard these foods as possessing a standard antiscorbutic value—not even in an approximate sense. It is therefore inexact and misleading, unless this limitation is borne in mind, to frame a table of the relative antiscorbutic content of the various foodstuffs. The milk will vary according to the fodder of the cows and again according to its age, especially if it has been subjected to pasteurization. The vegetables will vary according to their maturity and age previous to being cooked or dehydrated. Therefore, until improved methods are devised, we should endeavor to use young and fresh vegetables for purposes of dehydrating.

CAUSATION OF RICKETS

An investigation of scurvy naturally led to a consideration of a disorder which, from a clinical standpoint, has always been linked with scurvy. We refer to rickets. This is the most common chronic disorder among infants living in the temperate zone. It occurs more particularly among the poor, but is very common in moderate degree among the infants of the well-to-do. In an infant asylum with which we are connected, more than 90 per cent. of the infants show some degree of rickets. The theories as to its pathogenesis and etiology are manifold. Most of these may be grouped into one of two classes: those which place the onus on poor hygienic surroundings and those which regard the disorder as of dietetic origin. Under defective hygiene is included lack of sunlight, of fresh air and of exercise; the "domestication theory" of von Hansemann, the respiratory poison theory of Kassowitz. The dietary theory includes the fat deficiency, the alimentary intoxication theory, and newest of all, the vitamin deficiency. The last hypothesis was brought forward from a theoretical standpoint by Funk, and more recently has been sustained by Mellanby¹ as the result of experiments on dogs. The latter believes that he has shown that if dogs are deprived of the fat-soluble vitamin

* This work was carried out in part on a fund provided by the New York Foundation.

1. Mellanby, E.: *Lancet* 1: 407 (March 15) 1919.

they develop rickets, whether they are allowed at large or kept in confinement. These conclusions of Mellanby have been accepted by Hopkins and Chick in a memorandum drawn up by a committee on accessory food factors appointed jointly by the Medical Research Committee and the Lister Institute.² This report considers the fat-soluble factor as synonymous with the anti-rachitic factor, and even constructs a table of anti-rachitic foods, arranging them in three different grades. This memorandum was prepared for the guidance of those engaged in the administration of food relief to famine-stricken districts.

This is the status of the etiology of rickets, now, almost 300 years since Glisson's classic description. You will see that there has been no advance, with the possible exception of the introduction of the vitamin hypothesis. The subject of rickets can be well studied on infants, owing to its great prevalence. But to our knowledge there has been no systematic study of a group of infants carried through for a long period. This is due in part to the fact that an investigation of this kind is impossible in the hospital, in the dispensary or in the home, but can be carried out only in an institution where the hygienic and sociological conditions are alike for the entire group, and where all factors are

length, it is possible to draw some conclusions. It is all the more important to discuss this question, as the laboratory results are absolutely at variance with the opinion of most clinical observers, who believe that rickets commonly follows overfeeding. In a study of this kind, what is to be the criterion of rickets? There is no delicate indication of what may be termed latent or subacute rickets, which can be recognized only by metabolism tests. But this mode of approach is handicapped by the fact that such tests generally can be carried out for only short periods, whereas the disorder itself is one of marked chronicity, with irregular periods of advance and of quiescence. Furthermore, they are so laborious as to permit of an investigation of only a small number of cases. After a preliminary study it seemed that beading of the ribs, especially in conjunction with the enlargement of the epiphyses, furnished the most reliable criterion of the course of the disease. We turned, therefore, to an intensive study of beading of the ribs.

It was found that six grades of beading could be distinguished, and these have been designated in the charts by means of plus signs. It may be thought that this empiric method would be very inexact. However, it was found that if the examinations were carried out always by the same person, remarkable uniformity could be obtained. We shall not weary the reader with a detailed discussion as to the clinical varieties of beading of the ribs, but shall report on this question at some other time.³

Physicians in general, and pediatricians as well, regard beading of the ribs as a pathognomonic sign of rickets. Some time ago in studying infantile scurvy we noted not only that there was marked beading in connection with this disorder, but also that very often the beading or rosary quickly became less or disappeared when orange juice or other antiscorbutic food was given (Chart 1). In other words, *there is not only rachitic but also scorbutic beading*. This conforms with observations in experimental scurvy. It was pointed out by Jackson and Moore, and has been noted by various other investigators, that beading of the ribs occurs in the course of the experimental scurvy of guinea-pigs. This has been referred to generally as "pseudorachitic" beading. In point of fact, it must be regarded as truly scorbutic, as it shows the various microscopic appearances of scurvy. As we have stated, this sign has its counterpart in infantile scurvy; to a less extent, the same is true of enlargement of the epiphyses. That beading of the ribs may be of scorbutic origin is of interest, from both a clinical and an experimental standpoint. Probably this fact is largely accountable for the confusion that existed between infantile scurvy and rickets, and led to the former being regarded as "acute rickets," previous to the publications of Barlow. It is owing largely to this sign that the diagnosis of rickets has been made so constantly in association with infantile scurvy; the data of the incidence of rickets in scurvy have been based mainly on the occurrence of the rosary. It may have brought some confusion also into the study of experimental rickets. We have encountered similar beading, with slight hemorrhages of the costochondral junctions, in the scurvy of dogs. In the light of this experience it should be

Scorbutic Beading						Diet
Age. (mos.)	Beading	Epiph.	Age. (mos.)	Beading	Epiph.	
2	++	++	6	++	+	C. L. O (15gm. daily)
6	+++	++	7	++	+	
7	+±	+	8	±	±	O. J. added (15c.c. daily)
9	+	+	9	±	±	

Chart 1.—Scorbutic beading: Two cases (I. M. and I. L.) demonstrating beading of the ribs of scorbutic origin. This sign developed in spite of a dietary that included cod liver oil, and decreased rapidly when orange juice (15 c.c.) was added; ± signifies the least and +++ the maximum degree of beading.

under absolute control. About a year and a half ago we undertook the study of rickets in about 100 infants cared for in a modern child-caring institution. These infants lived under excellent hygienic conditions, their nursing and care was the same, their food was prepared in a central diet kitchen, and they remained in the institution for the entire period of observation. Once a month they were examined for rickets. This included notation as to the size of the fontanel, the beading of the ribs, the enlargement of the epiphyses, the condition of the musculature, the eruption of the teeth, the static development, etc. They were placed on various diets—an abundance of fat and fat-soluble vitamin in the form of milk and cream; a deficiency of these substances, as in skimmed milk; an abundance of water-soluble vitamin as supplied by autolyzed yeast; or diets such as Mellin's Food or condensed milk. In all cases there was but one deficiency in the diet, which was adequate in quantity, that is to say, in its caloric content, and contained in every instance sufficient antiscorbutic foodstuff.

It is realized that a test of this kind should be carried out for a period of years, and that it is, therefore, premature to lay down rigid conclusions as a result of this work. However, after a period of observation of this

3. It may be said in passing that beading may be of various kinds—round or angular, that is to say, more cartilaginous or more osseous. It may be of a chronic nature—"residual"—resembling the enlargement of the epiphyses found in guinea-pigs that have been cured of scurvy. In order to make correct use of this sign it must be thoroughly studied and its modifications appreciated.

2. Hopkins, F. G., and Chick, H.: *Lancet* 2: 28 (July 5) 1919.

noted that three of the four diets that Mellanby made use of in his experiments on rickets in dogs contained no antiscorbutic whatsoever, and that the fourth dietary included only 3 c.c. of orange juice daily, a quota of antiscorbutic food that is insufficient. We do not, however, wish to imply that he was dealing with scurvy rather than with rickets.

Beading of the ribs may also come about as the result of a lack of the water-soluble vitamin. This

Date.	Wgt.	Font.	Cr.-tabes	Teeth.	Rosary	Epiph.	Diet.
6-18	5 1/2		++	0	0	0	
9-16	8 1/2	2-2		0	0	0	Milk(1 liter)
11-27	10 1/2			0	+++	±	
12-29	10 1/2	3-3		0	+++	0	Cereal, O.J.(15c.c)
2-4	10 1/2		++	0	+++	±	
3-2	11 1/2	3 1/2-3	++	0	+++	±	
4-1	11 1/2	4-4	±	0	+++	±	
5-7	11 1/2	4-3		0	+++	0	
6-6	11 1/2	3-3	±	0	+++	0	
7-12	11 1/2		±	0	+++	+	Spinach(30gm.)
8-14	12 1/2	3-3		0	+++	+	
9-12	12 1/2			0	+++	+	C.L.O.(15c.c.)-Spinach Stopped
10-7	13 1/2	2 1/2-2 1/2		0	+++	+	
11-4	15 1/2	2-1 1/2	±	0	++	+	
11-25	16 1/2	2-1 1/2	±	0	+±	±	
1-4	17 1/2	2-1 1/2		0	±	±	

Chart 2.—This infant (J. C.) was admitted when 1 week old and developed marked rickets on diet containing large amount of fat-soluble vitamin (milk and spinach); improvement in rickets and general condition when cod liver oil was given.

takes place less frequently than in scurvy and far less frequently than in rickets. This sign was noted in infants who were receiving only a small quantity of the water-soluble factor in their dietary, and who later were given considerable amounts of autolyzed yeast. In some of these cases there was an unmistakable sharp increase in the rosary. It is interesting to note that beading of the ribs has been observed at postmortem examination in cases of infantile beriberi. Andrews⁴ writes that among eighteen cases of infantile beriberi, the disorder brought about by a lack of water-soluble vitamin, he encountered three instances of beading of the ribs. He also has stated, in a personal communication, that these were the only instances of rickets that he encountered at necropsy in the Philippines. Probably beading does not occur with greater regularity in the course of infantile beriberi because most of the children die during the first two months of life. It becomes all the more clear that in a study of rickets, whether in infants or in animals, it is essential to have the diet complete, except for the one factor under investigation, and especially that it should contain adequate amounts of the antiscorbutic and of the water-soluble vitamin.

At the outset of our investigation, attention was directed to the influence of hygienic and nondietetic measures on the development of rickets. It was found that rickets can develop notwithstanding an abundance of fresh air. It occurred in the larger and in the smaller rooms of the institution, and developed in infants at the tuberculosis preventorium, an institution in the country where particular attention is paid to outdoor treatment. It was found likewise that a liberal allowance of light could not prevent the development of this disorder. Infants in glass cubicles were not cured more than those in the regular wards. With this question in mind, in the spring of 1917 five children were given daily treatments of violet ray, the

mercury vapor quartz lamp being used for this purpose. Their entire bodies were exposed for twenty minutes, so that they soon became brown, as if well tanned by the sun. This therapy, which was carried out with regularity for three months in infants about 1 year of age, did not lead to a definite improvement in the rickets, nor did it benefit their general condition. Violet ray treatment cannot be considered the equivalent of heliotherapy. But the fact that rickets is exceptional in the arctic region, where there is a lack of sunlight for the greater part of the year, is a strong argument against its predominant influence.

INFLUENCE OF FAT-SOLUBLE VITAMIN

As we have stated, discussion as to the etiology of rickets centers at present about the fat-soluble vitamin. We shall therefore direct our attention to this aspect of the subject. This vitamin, as is well known, has been shown by McCollum and his co-workers, and by Osborne and Mendel, and others, to be present in abundance in animal fats—such as cream, butter and eggs—as well as in the leafy vegetables, but to be absent or almost absent in the vegetable oils. As far as has been demonstrated, it cannot be synthesized by the animal body.

In order to provide an adequate amount of this important dietetic factor, we placed a number of infants, during the first months of their lives, on large amounts of milk, in some instances giving cream in addition. By this means, if fat-soluble vitamin is the controlling influence, the development of rickets should have been prevented. In some cases, with this dietary, which it will be remembered included also orange juice, a very mild degree of rickets was observed, but in others marked signs developed. For example:

CASE 1.—J. C., a baby admitted when 1 week old, without rickets, was given daily when 3 months old a quart of milk containing fully 3 per cent. of fat. By the middle of November when he was 5 months old, he had developed marked

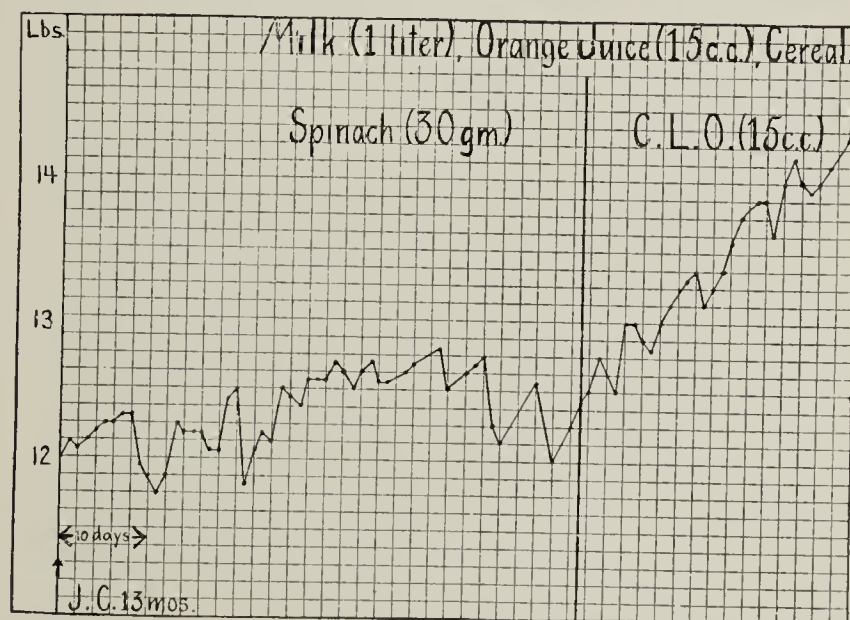


Chart 3.—Weight curve of case of marked rickets shown in Chart 2 (J. C.); inability of large amounts of milk and spinach to produce gain in weight; marked increase on addition of cod liver oil.

rickets. His general condition had improved during these months, he having gained 2 pounds in weight. Rickets persisted for ten months, in spite of this large amount of milk, and until cod liver oil was given in October (Charts 2 and 3).

Consider a case such as the following:

CASE 2.—A well nourished baby, aged 2 months, was given a formula containing 24 ounces of milk; it received also orange juice and later some wheat cereal. Rickets developed

on this diet with all the typical signs. In the fall, when it was 10 months old, the rickets diminished without change of diet.

Rickets has developed in several instances on 24 ounces daily of protein milk (containing about 2.5 per cent. of fat) and even in nursing infants, whose mothers were on a diet that included a large quota of milk, butter and vegetables.

It is difficult to bring these observations into harmony with the hypothesis of a lack of fat-soluble

Mo.	S.M.	R.S.	E.L.	M S.	C M.
1	±	+±	±	±	+
2	+±	+		±	
3	+++	±	+	+	+±
4	+	+	+	±	+±
5	+	+	+	±	+
6	++	+	+	±	+±
7	++	+		0	+±
8	+	+	±	0	+±
9	±	±	±	(Home)	±
10	0	±	±		±
11	±	+	±		±

Chart 4.—These five infants received a diet that was complete in every particular except for the fat-soluble vitamin. It consisted of highly skimmed milk (Krystalak, 0.2 per cent.; fat, 180 gm.); sucrose, 30 gm.; cottonseed oil, 30 c.c.; autolyzed yeast, from 15 to 30 c.c.; orange juice, 15 c.c., and cereal. The monthly examinations of beading of the ribs represented by the plus signs below the heavy line refer to the period of fat-soluble vitamin deficiency; ± signifies the least degree of beading, and +++ the maximum. These cases show that beading decreased rather than increased in spite of this deficiency.

It should be understood also that these babies at no time had symptoms of indigestion—vomiting or diarrhea. It may be argued that the content of fat-soluble vitamin in the milk was small, owing to a deficiency of this factor in the fodder of the cows.⁵ This suggestion is attractive, as it has been noted not only by clinicians, but likewise by pathologists, that cases of rickets are most numerous in the spring months and decrease in number and severity in the fall. This phenomenon, brought out sharply by Vogel and by Kassowitz, should be strongly emphasized; indeed, any explanation of the etiology of rickets, in order to be convincing, must explain the striking seasonal variations. This peculiar incidence stood out in relief in the course of the monthly physical examinations, as they proceeded from the spring to the fall. Without any change in the diet the rickets decreased in September or October. In view of this fact, animal experiments should be so planned that those of a curative nature bring about the cure in the spring, whereas those which are provocative should lead to the development of the disorder in the fall. We are willing to admit that milk must be different when secreted by cows on pasture than when the fodder contains almost no greenstuff. This does not, however, indicate that this change brings about the cure of rickets, and least of all that it is the fat-soluble vitamin that deserves the credit. It does

not account for the large number of babies receiving an abundance of milk who develop rickets, while others taking a far less quantity of the same milk remain almost normal; nor for the cases, by no means infrequent, of well nourished breast-fed babies who develop the disease, in spite of the fact that the diet of the mother contains a large amount of the fat-soluble factor.

RESULTS OF TEST DIET

But let us approach the question from the other side. Do infants who receive very little fat-soluble vitamin in their diets become rachitic? In order to answer this question, five infants were put on a dietary that was complete in every respect except for a lack of this principle. The dietary was composed of 180 gm. of Krystalak, a commercial preparation of highly skimmed milk which, when diluted tenfold with water, has a fat content of less than 0.2 per cent. In its preparation the milk is first heated in a vacuum to 130 F. for fifty minutes and then dried by the Just process at a temperature of 212 F. for twenty seconds. This milk was sweetened with 30 gm. of sucrose. Fifteen c.c. of orange juice were added to supply the antiscorbutic vitamin, 30 c.c. of autolyzed yeast to furnish water-soluble vitamin, 30 c.c. of cottonseed oil to provide fat, and wheat cereal (cream of wheat) when the age of the infant required this addition. The babies were from 4 to 9 months of age, and somewhat below the average in physical development. They should have developed rickets if a lack of fat-soluble vitamin is the essential cause of this disorder. They have been on this diet for periods varying from five to nine months, have been weighed daily and examined frequently, and show no greater signs of rickets than the average baby in the institution—merely such minor manifestations as are rarely lacking (Charts 4 and 5). This result shows that this vitamin is not the much sought for antirachitic factor; that it cannot bear the same direct relationship to this disorder as do other vitamins to their specific diseases—we refer to scurvy and to beriberi. Even if rickets is in some degree

Mo.	S.M.	R.S.	E.L.	M S.	C M.
1	0	+	±	0	0
2	0	±		0	
3	±	+	±	0	±
4	0	+	±	±	±
5	0	+	+	±	±
6	0	+	+	0	±
7	0	+		0	±
8	0	+	±	±	±
9	0	+	±	(Home)	±
10	0	+	±		±
11	0	+	±		±

Chart 5.—Epiphyses: The same five patients as in Chart 4, receiving minimal fat-soluble vitamin and illustrating enlargement of the epiphyses instead of beading of ribs. These cases show that according to this sign rickets did not develop on a lack of fat-soluble vitamin.

influenced by a fat-soluble vitamin deficiency, there are more important and dominating factors that determine whether or not the disorder shall come to pass.

This test diet (minimal fat-soluble vitamin) is of interest from a point of view quite apart from rickets. As is well known, experiments carried out by Osborne and Mendel and by

McCollum have shown that if rats receive no fat-soluble vitamin in their diet, they cease to grow and develop a disease of the eyes, termed xerophthalmia. A similar eye disease was reported some years ago in Japan by Mori,⁶ and more recently by Bloch⁷ of Copenhagen, as the result of a diet of skimmed milk

5. The subsidence of rickets depending on the nature of the fodder of the cows could be construed as follows: The cows are sent out to pasture about the middle of May. At first some of the vitamin goes to make up for the deficiency of their tissues in these factors, resulting from the stall-feeding throughout the winter. Somewhat later the vitamins are secreted to a large extent into the milk. We must furthermore allow two or three months for the subsidence of the rachitic signs for the improvement to become evident clinically. Reasoning thus, we account for the four month period—from the middle of May to the middle of September—the long interval between the time of the change to green fodder and its effect on the nutrition of the baby.

6. Mori, M.: *Jahrb. f. Kinderh.* 59: 175, 1904.
7. Bloch, C.: *Ugesk. f. Læger* 79: 309, 1917.

and a deprivation of milk fat. These laboratory and clinical reports have caused physicians and hygienists to take alarm and to utter vague warnings of the great danger that lurks in a diet deficient in fat-soluble vitamin. Very recently it has been suggested⁸ that

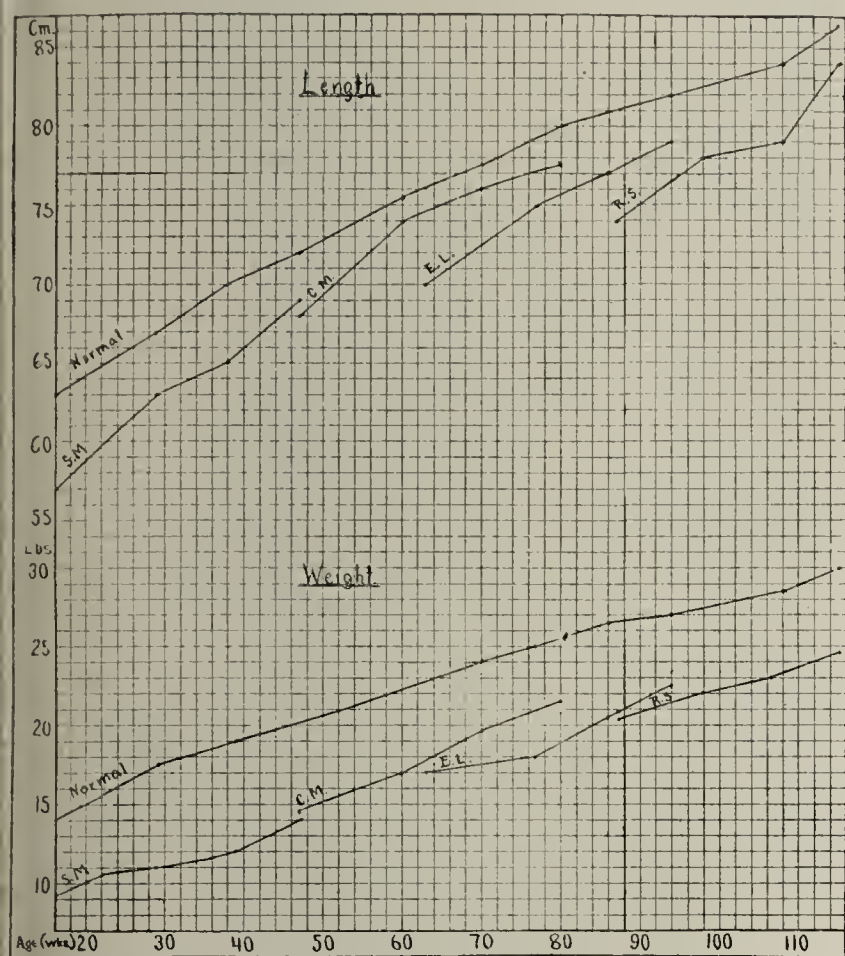


Chart 6.—Growth (minimal fat-soluble vitamin): Gain in length and weight (compared to the normal) of infants on the diet deficient in fat-soluble vitamin. This dietary led to no definite retardation.

many children may fail to grow normally because of an insufficient amount of this vitamin, which, compared to the water-soluble vitamin, is distributed so sparingly among the natural foodstuffs.

In view of these experiences and opinions, our infants were watched and examined with the greatest of care, and it will be well to report their condition in some detail. Their general appearance is decidedly good. One, about 2 years of age, who has been on the diet for the longest period, is up and about and has excellent color. The hemoglobin of the group averages between 80 and 90 per cent., and the red blood cells about 4,000,000 per cubic millimeter of blood. Their pulse, respiration and electrical reactions are normal. Roentgenograms of the heart show no changes, and of the bones shown no signs at the epiphyses resembling the lesions characteristic of rickets or of scurvy. Their growth in length has been normal, and their growth in weight slightly below the normal (Chart 6). In one case in which the gain had been slow, a larger amount of wheat cereal (cream of wheat) was given to note whether a food lacking in fat-soluble vitamin could bring about a gain. As will be seen in Chart 7, this addition of carbohydrate resulted in a prompt and definite rise in the weight curve. We may summarize our results by the statement that the only abnormal condition observed has been a mild retardation in gain in weight. How are these conclusions to be brought into harmony with the experimental and clinical results of others? It should be understood that this experience is not comparable to the feeding tests carried out

on rats, for in these animals fat-soluble vitamin has been entirely excluded from the food. Our dietary was devised from the standpoint of rendering the deficiency no more stringent than might occur under clinical conditions. In this respect it may be compared to diets we encounter in cases of infantile scurvy, which are never completely devoid of the antiscorbutic factor. It is quite possible, furthermore, that the rat is more sensitive to this deficiency disease than is man, just as man is far more sensitive than the rat to a lack of antiscorbutic vitamin.

CLINICAL REPORTS FROM JAPAN AND DENMARK

But let us turn to the clinical reports from Japan⁶ and from Denmark⁷ to see whether we can harmonize or correlate our results. The former tells us that the disorder occurred in the summer time in conjunction with diarrhea; that it rarely occurs in children under 1 year or in those over 15 years of age, and that the diet consisted of "rice, barley, cereals, beans and other vegetables." These vegetables are not specifically mentioned. The cure was remarkably prompt when cod liver oil was given, in some cases marked improvement being observed in half a day, results resembling the cures of beriberi in man or polyneuritis in pigeons. Further details are not given as to the quantity or the exact ingredients of the diet, of the length of time it was taken, nor as to whether any other change was made when the cod liver oil was given. Olive oil was ineffective. The data are so fragmentary that it is almost impossible to express an opinion on this report. Much would depend on the kind of vegetables that were eaten whether legumes or of the leafy variety. It seems very probable that the caloric content of the food was insufficient, and that it was lacking in an adequate supply of protein.

The Danish report is much fuller and gives us an account of forty-nine cases of eye trouble that occurred in Copenhagen from 1912 to the end of 1916. This publication of Bloch's, which is in the Danish language, has been cited so frequently to show the danger to

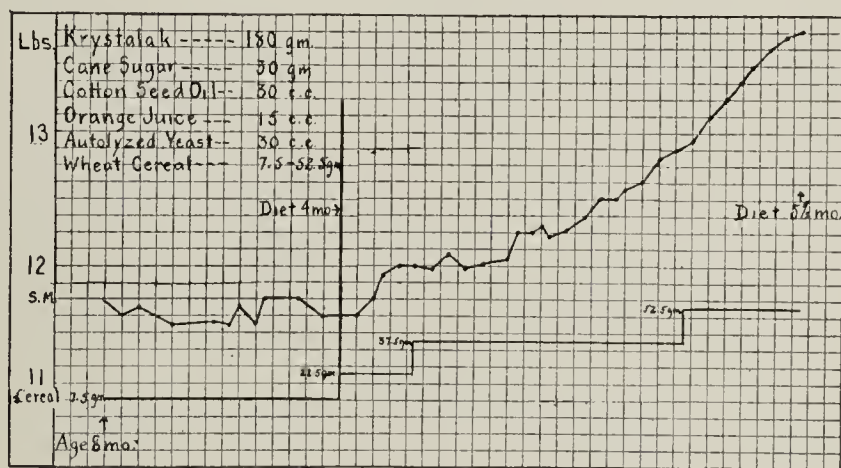


Chart 7.—Minimal fat-soluble diet: weight curve of one of the patients on a fat-soluble deficiency diet; evidence that gain can be brought about by adding cereal to the dietary without increasing the amount of fat-soluble vitamin; lack of gain therefore not due to the want of this growth factor.

infants of a deficiency of fat-soluble vitamin that it deserves careful reading and analysis. The infants were pale, flabby and very thin, with dry, scaly and shriveled skin. Of the forty-nine infants, twenty were between 6 and 12 months of age, fifteen from 2 to 6 months of age, and fourteen over 1 year. They suffered from what Bloch terms "psychic hyperesthesia," and would scream and twist and turn, and wanted to be let alone. The malnutrition was extreme in many

8. Pub. 59, U. S. Children's Bureau.

cases; for example, one baby of 9 months weighed 9 pounds, one of a year weighed 13½ pounds, another aged 2 years weighed 14 pounds. Their diet consisted of an indefinite amount of skimmed milk that had been pasteurized and cooked again in the home. Oatmeal gruel and barley soup constituted an important part of their dietary; one case is mentioned in which the baby had received nothing except oatmeal gruel and sugar. In no case were vegetables given, and in only one instance fruit juice, and then for only three days. A cure was obtained by means of cod liver oil, but in almost every instance breast milk or raw cow's milk was given in addition. It is very probable that some of this malnutrition was due to a lack of fat-soluble vitamin; it seems, however, equally true that other deficiencies played a more important rôle. These infants were partially starved and also received an insufficient allowance of antiscorbutic vitamin in the doubly heated milk. Scurvy is mentioned in only one instance, but in many others it must have been latent or subacute. It is therefore impossible to evaluate this report; it cannot, however, be used to illustrate the danger of fat-soluble vitamin deficiency. Animal experiments designed to elucidate this question would not be accepted if devised and carried out in this manner. What is true of this report will hold good of many of the nutritional experiences derived in the course of the war. The pictures are unavoidably confused and composite, rendering it most difficult to deduce valuable lessons from them. In most cases partial starvation is a basic factor, and infection plays a rôle. For example, the cases of scurvy reported from Austria—with large and numerous subcutaneous hemorrhages—resemble melena or purpura rather than true and uncomplicated scurvy. Similar conditions may occur in peace times. We have recently seen a group of infants who were suffering from a combination of deficiency diseases brought about by an insufficient caloric content of the food and a lack of antiscorbutic as well as of fat-soluble vitamin.

COMMENT

Our experience leads us to believe that except under exceptional circumstances—as in time of war—the danger to the infant and to the child from a deficiency of the fat-soluble factor is one not to cause great apprehension. It is true that this principle is by no means so widely distributed in nature as the water-soluble vitamin, but, on the other hand, infants seem able to thrive for long periods on very limited quantities, provided the diet is otherwise complete. The great danger arises from diets composed merely of cereal and water or perhaps an insufficient amount of buttermilk

or skimmed milk.⁹ It is probably true that a catastrophe will result if the incomplete diet is maintained for years, or even sooner in a susceptible individual, as is well known to be the case in scurvy or in beriberi. In formulating dietaries for infants and children, therefore, this food factor should be borne in mind and be regarded as an essential constituent.

There is a growing danger of attributing every unexplained growth impulse to the new, attractive but ill-defined vitamins—of their sharing with the secretions of the endocrine glands the fate of becoming the dumping-ground for every unidentified factor. It should be borne in mind that there are other little understood factors and food reactions. One of these is the peculiar and almost specific rôle that cereal plays in the nutrition of the infant. This phenomenon has been of especial interest to us for some time, and well illustrates the complexity of nutritional problems.

Not infrequently infants receiving diets which, according to accepted standards, should be adequate, fail to gain until cereal is given in addition. These babies usually are 6 months or more of age, and receive milk mixtures that should suffice to bring about growth. As the result of such experience, physicians add cereal to the milk diet when there is a failure to gain about the second half year of life. In order to obtain more precise information in regard to this interesting phenomenon, for which there is no satisfactory explanation, we studied a number of infants who had reached this stationary phase. It was found that in cases in which even cod liver oil no longer caused a gain, and in which egg yolk and beef drippings had failed, a small amount of wheat cereal (cream of wheat) brought about a decided increase (Chart 8). This result occurred whether the previous diet had been rich in fats, as just instanced, or contained a carbohydrate such as Mellin's Food

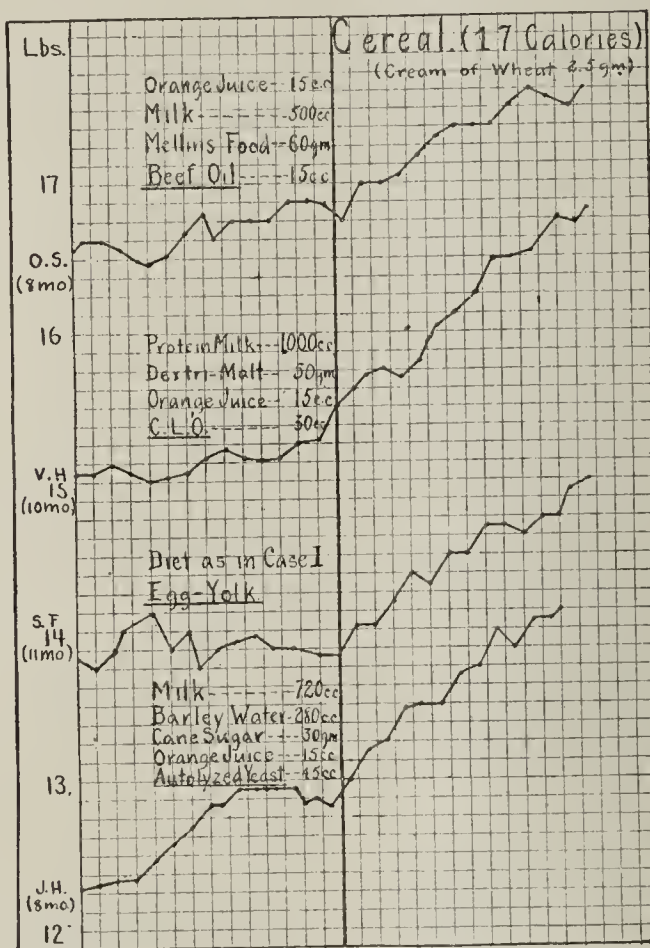


Chart 8.—Effect of cereal (cream of wheat, 2.5 gm., 17 calories) added to diet: four patients who had reached a stationary phase in weight; gains were brought about by small additions of cereal to a diet that was adequate in caloric content. The first three diets were unusually rich in fat-soluble and the fourth in water-soluble vitamin (autolyzed yeast). In the last case (J. H.) 4 gm. of dried cereal, equivalent to 28 calories of food, were added.

(maltose and dextrin, Chart 8). In one instance, when large amounts of autolyzed yeast failed to stimulate growth, the wheat cereal was effective (Chart 8.) Another, a breast-fed baby aged 8 months which had not gained for three weeks, increased 6 ounces as soon as a small amount of cereal was given in addition to the nursings. These gains could not be due to an addition of any of the recognized vitamins, as diets rich in the antiscorbutic, water-soluble and fat-soluble factors were nevertheless enhanced in value by the cereal addition. Nor could it be the result of a simple caloric increase in food, for

9. A favorite food for very young and premature infants is butter-milk or the "Holländische Säuglingsnahrung," which consists of butter-milk (with a fat content about the same as that of skimmed milk), sugar and flour. Babies may thrive on this food, deficient in fat, from birth until the second half year of life.

he amount added was comparatively insignificant. Cooked cereal equivalent to only 2 or 3 gm. of the dry cereal frequently led to a gain of 2 or 3 ounces by the following day. These babies were receiving a high caloric diet. In one instance a quart of protein milk and 10 c.c. of cod liver oil were given, representing about 20 calories per kilogram of body weight (Chart 8). The simplest and most direct explanation of this reaction is that this carbohydrate brings about a more complete oxidation and thereby a better utilization of the food. However this may be, it illustrates the point that not everything which induces growth—and which does not conform to accepted standards—is a vitamin.¹⁰

CONCLUSIONS

It would lead too far afield to discuss the various theories that have been advanced to account for the occurrence of rickets, and, moreover, it would not be profitable at the present time, as the data are inadequate. There seem to be several causes at work, rendering the unraveling of the problem so difficult that there is a difference of opinion not only as to the particular dietary factor that is at fault, but even as to whether rickets is to be considered a disorder of dietetic origin. It should not be lost sight of that there is a prenatal factor involved. The fact that the negro infant, living side by side with the white in the larger cities and obtaining milk from the same source, develops rickets so frequently and so markedly, indicates that there are important influences to be reckoned with in addition to the food.

In considering the diet a most important question is whether the recent theory as to the vitamin origin of this disorder can be maintained and, more particularly, whether rickets should be attributed to a lack of the fat-soluble factor. We can obtain the clearest understanding of this aspect by comparing this disease to the well recognized and established deficiency diseases, scurvy and beriberi. What does the comparison show? In the first place, these two disorders are commonly accompanied by weakness and malnutrition; we do not encounter the strong, apparently healthy babies met in rickets. But of far greater moment is the fact that neither can be brought about by overfeeding. Rickets, as emphasized in the body of this paper, frequently develops in infants receiving too much milk rich in fat, protein and salts. It seems impossible to bring this fact into consonance with a deficiency disease, whatever may be its nature, using this term in the commonly accepted sense. Our study shows that the fat-soluble vitamin is not the controlling influence; that infants develop rickets while receiving a full amount of this principle, and that they do not manifest signs, though deprived of this vitamin for many months, at the most vulnerable period of their life. It is impossible to interpret the contrary conclusion which Melby came to as the result of his pioneer experiments on dogs, or to accept the term "fat-soluble vitamin" as synonymous with "antirachitic factor," as Hopkins and Nick would have us do. Clinical tests carried out with care must be accorded fully as much weight as laboratory investigations. The two methods of approach should be carried out side by side, and even

the most thorough study on animals must be made to harmonize before it can be accepted as holding good for man.

Finally, this work seems to show that the danger to infants of a diet deficient in fat-soluble vitamin is slight, provided it includes sufficient calories, and otherwise is complete. They can maintain their health and vigor despite amounts of fat-soluble vitamin so small as rarely to be encountered in times of peace. In spite of the fact, therefore, that this vitamin is not widely distributed in nature, a disorder that may be termed "fat-soluble deficiency"—marasmus or xerophthalmia—is hardly to be apprehended from a clinical standpoint.

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A CAMPAIGN AGAINST VENEREAL DISEASE IN THE ARMY OF OCCUPATION

DAVID M. DAVIS, M.D.

BALTIMORE

In the campaign against venereal disease, many measures which seem to give promise of good results are never tried on account of their impracticable nature in ordinary communities. During the occupation of a part of Germany by the United States Army, opportunity was given to test some of these measures, owing to the facts: first, that there were none of the ordinary legal obstacles now in the way; and second, that the army authorities were so deeply interested in keeping the venereal rate at a minimum that every facility for the work was made available.

This paper deals only with the means used and the results obtained in the Third Division during the first four months of the occupation.

During the summer of 1918, the Third Division had been almost constantly in action, making a splendid record for itself. Incidentally, an extremely low venereal rate had been maintained, as can be seen by reference to Table 1; and although it was felt that lack of exposure had had something to do with it, every one in the division was anxious to maintain the high standard in Germany.

The division started its march toward the Rhine from the vicinity of Bar-le-Duc on or about Nov. 16, 1918. From then until December 17, the troops were almost continuously on the move, and opportunities for exposure to venereal disease were almost as limited as during the period of battle. Division headquarters remained at Remich, Luxembourg, on the Moselle River, for several days just before December 1, and at this time, acting as division urologist, I submitted the following memorandum, which was an effort to foresee conditions as they would be after the occupying troops had settled down in their assigned areas:

The prostitution problem divides itself into two parts: (a) registered, and (b) clandestine prostitutes. From the police in Germany the names and addresses of all registered prostitutes can be obtained. They and the clandestines can be considered as operating: (1) on the streets; (2) in cafés, theaters and dance halls, and (3) in brothels. In order to cope with the situation, a definite policy must be laid down and followed. Should there be no army order on the subject, such a policy could with advantage be determined by a division order. The registered women are at once available. Shall they be interned, deported, or allowed to operate in

10. This phenomenon is similar to that reported from Hopkins' laboratory by Winfield (Report 116, Local Government Board, 1913, 147). It was found that rats failed to grow on a milk diet when they were one-half to two-thirds full grown, and that "the addition of fish milk alone produced no acceleration of growth." "With a diet of bread and milk, growth recommenced." Ferric ammonium citrate and a preparation of hemoglobin were added without result.

brothels which are placed out of bounds? The last alternative has the objection that it always leads to abuses and evasions. The clandestines must be met by regulating the streets, cafés, theaters and dance halls. For the streets, rules similar to those in force at Bordeaux, forbidding soldiers and officers to appear in the company of women, might be enforced. Dance halls may be closed or put out of bounds. Theaters may be closed, put out of bounds or allowed to operate under supervision provided no women are permitted to loiter about in them. Cafés may be put out of bounds. In German cafés the waiters are usually women, these usually clandestine prostitutes.

The venereal problem in Germany will be one of the utmost importance for the welfare of the soldiers and the reputation of the Army. Stringent measures will be necessary to maintain the extremely low venereal rate of the A. E. F. A definite policy, clearly outlined and enforced from the beginning, will be of great assistance in the solving of the problem.

A third army order on the subject was not issued, so each division proceeded to solve its own problem along the lines already laid down by general headquarters after the recommendations of the senior consultant in urology, which had proved so successful in France.¹ This program was as applicable in Germany as in France, although certain conditions peculiar to the occupied area required decision, some of which made possible more effective measures than had been practicable in Allied territory. This being the case, it is remarkable to note how in each division, practically identical methods were arrived at sooner or later. Third Division headquarters were established at Andernach-am-Rhein, Kreis Mayen, Dec. 16, 1918. The area assigned to the division coincided almost exactly with the Kreis Mayen. This "Kreis" had a population variously estimated at from 50,000 to 80,000 people. There were two larger towns, Mayen, of about 10,000, and Andernach, of about 9,000 inhabitants, and approximately twenty-five small villages, all occupied nearly or quite to the limit, by the division troops. The men were practically all billeted in the houses of the inhabitants and other suitable buildings. In the dwellings, sufficient space for the family was set aside, and the rest of the house was occupied by soldiers. This, of course, brought the soldiers and Germans into close, and at times intimate contact.

The Kreis Mayen occupies an area in the Coblenz plain, facing the Rhine River, including principally the valley of the Nette River, and a good deal of high mountainous country around the Laacher See. It also extends far enough to the southeast to touch the Moselle River for some distance. In Andernach and Mayen are a number of factories, such as food canneries, iron works and breweries. Between these towns, on the volcanic strata emanating originally from the Laacher See volcano, are numerous establishments for the manufacture of cement, together with large quarries to supply the stone for these cement factories as well as for other purposes. The remainder of the Kreis is given over to agriculture, with a number of vineyards along the Moselle. Railways connect Andernach and Mayen, Mayen and Coblenz, Mayen and Munstermaifeld, and Mayen and the territory to the southwest. The main Coblenz-Cologne line runs along the Rhine border of the Kreis, and the main Coblenz-Treves line along the Moselle border.

From this short résumé it will be seen that the problem concerned a community about half agricultural and

half industrial, with two moderate sized towns, good railway connections, and lying from 15 to 25 kilometers from the city of Coblenz.

From the German officials it was learned that there were no registered prostitutes or recognized houses of prostitution in the Kreis. Amusement places were few and small, and the cafés also small and unpretentious, but numerous. During the war, many of the factories had been transformed for the manufacture of munitions. This had brought many girls to the towns to work in these factories, and had given them contact with the soldiers comprising the garrisons, and those working in the supply departments of the army. From German sources it was learned that while the district had been very free from venereal disease before and during the early stages of the war, the conditions described had brought about a notable increase during its last two years.

It will be noted that all of the prostitution to be combated was of the clandestine type. For this reason, none of the measures usual in the American Expeditionary Forces against houses of prostitution and segregated districts could be applied. The other parts of the program, however, were carried out as vigorously as possible. Prophylactic stations were established at every point occupied by soldiers. Prophylactic instruction at frequent intervals was insisted on, and line officers as well as medical officers took part in it. This included the customary admonition that continence was desirable from every point of view, statements of the nature and results of venereal disease, and a reminder that prophylaxis was insisted on to protect the innocent, not to encourage the guilty. Biweekly examinations for venereal disease were carefully made, the medical officers using complete company rosters and checking off by name so that no one escaped. The

TABLE 1.—RATE PER THOUSAND PER YEAR FOR THE DIVISIONS

Week	Total Cases	Cases Contracted in Area
Dec. 17, 1918.....	10.7	0.0
Dec. 24, 1918.....	10.7	0.0
Dec. 29, 1918.....	10.67	0.0
Jan. 5, 1919.....	22.88	0.0
Jan. 12, 1919.....	9.88	5.5
Jan. 19, 1919.....	15.6	6.9
Jan. 26, 1919.....	3.92	3.92
Feb. 5, 1919.....	2.9	2.9
Feb. 12, 1919.....	15.3	11.2
Feb. 19, 1919.....	9.5	5.8
Feb. 26, 1919.....	13.13	9.88
March 5, 1919.....	11.86	3.95
March 12, 1919.....	28.2	14.1
March 19, 1919.....	21.52	9.75
March 26, 1919.....	7.87	1.98
April 2, 1919.....	9.83	1.97
April 9, 1919.....	0.0	0.0

Average strength about 28,000.

sale of liquor was forbidden except between 5 and 7 p. m. Fraternization with Germans of either sex had been forbidden. The welfare organizations had comprehensive plans for the amusement of the men; but time was required to put them in operation. Meanwhile, a heavy drilling schedule kept the men busy during most of the few hours of daylight there were at that time of the year. Aside from closing one dance hall at Andernach, nothing further could be done except to await developments.

For nearly four weeks no case of venereal disease contracted in the occupied area came to light. Then a few cases were reported (Table 1). Questioning of

1. Bull. 54, General Headquarters, A. E. F. Young, H. H.: Preventive Medicine as Applied to Venereal and Skin Diseases, J. A. M. A. 73: 1668 (Nov. 29) 1919.

the infected soldiers and the activities of the military police and intelligence sections provided evidence against several women as being sources of infection. These women were apprehended and turned over to the German authorities for internment and treatment for a period of three months. A general policy for dealing with venereal disease was soon developed. It is desired to emphasize the fact that this policy was modeled after that used in handling other infectious diseases, and was based on the principle of quarantine. Infected women were to be isolated by the Germans,

TABLE 2.—STATISTICS FROM DEC. 16, 1918, TO APRIL 1, 1919

New cases	101
Gonorrhea.....	69
Chanere or chaneroid.....	32
Chronic cases treated in hospital.....	67
Gonorrhea.....	38
Syphilis.....	29
Chronic syphilitics treated as outpatients.....	57
Number of women confined at present.....	37
Number of women paroled.....	6*
Number of women sent to Kloster Maria Trost.....	3
Number of women sentence suspended.....	6
Number of women acquitted.....	2
Number of women escaped.....	1
Total number dealt with.....	52

* Several more women were paroled during the week of April 1 to 8, 1919.

and infected men were to be isolated by the American authorities until declared cured, according to the best criteria available. Details of the hospital treatment of infected soldiers will be given later. The Germans had no adequate system tending to regulate prostitution. The towns were too small to attract the registered prostitutes or have a morals police. Provision was made for the treatment in hospitals at public expense of women afflicted with venereal disease; but very few had availed themselves of this privilege. Women known to be prostitutes were required by law to report to the burgomaster once a week, but no effort was made to control them, and this measure was a "dead letter."

All of the hospitals in the occupied area were being utilized to a greater or less extent by the Army authorities, and therefore no treatment center was available for the women. The German authorities, who showed no inclination to cooperate, and no interest in the fate of these unfortunate women, were content to place them, for the period of their confinement, in the ordinary jails. No medical treatment was provided, although some of the women were in the secondary stage of syphilis; and they were crowded in the jails. As soon as this state of affairs was discovered, medical treatment was ordered, and supplied. This was done ungraciously, and in Andernach had to be hastened by the trial and punishment of the burgomaster. The Germans were also informed that better accommodations must be found. A certain amount of space was found to be still available in some of the hospitals; but this was insufficient for handling the increasing number of women. Through the hearty cooperation of the commanding general, the chief of staff and the division surgeon, steps were taken to evacuate completely a German hospital at Niedermendig, then occupied by American troops. Wooden barracks were built to accommodate these men. As soon as this was accomplished, the confinement and treatment of all women apprehended was carried out at this center under the direction of a competent local physician. The costs in each case were

borne by the village or town from which the woman came, according to a ruling of the landrat. General supervision was maintained by the American authorities, with whom rested the final decision as to noninfectiousness, and also the decision as to the parole of favorable cases.

The work of trying and ordering the confinement of infected women who had transmitted disease to or consorted with American soldiers was done by the inferior provost courts of the various localities. A clean cut case was required, and hearsay evidence, especially from German sources, was ruled out. It was found possible to apprehend over 50 per cent. of the women infecting soldiers, besides those taken in extemporized brothels, or elsewhere. All cases were reported at once to the division urologist and to the superior provost judge of the division. By frequent visits to the treatment center, it was possible to follow each case, and deal with it on its merits. In gonorrhea, three successive negative examinations constituted the criterion of noninfectiousness. In syphilis, patients were kept, even after the disappearance of lesions, until a thorough course of neoarsphenamin had been completed. When pronounced noninfectious, it was the general policy to parole all women who seemed to show an inclination to mend their ways. Others were held until the end of the period for which they were ordered confined, when, if still infectious, they were recommitted. Although well treated, well fed and well clothed in the hospital, all displayed the greatest anxiety to avoid a second sojourn there. Arrangements were made to confine in a German convent at Coblenz any incorrigible prostitutes who showed no evidence of disease. Only four cases fell in this class, and one woman succeeded in escaping and leaving the area before she was sent to the convent. One patient with disease, from a well-to-do family, was allowed to go to a hospital in a distant city for treatment, on her father's undertaking to be responsible for her safe-keeping. All the other patients were treated at the treatment center, and it was not necessary during my service in Germany to apprehend a woman the second time.

The Germans were indifferent, or even hostile, to this program. The prevalent ideas were quite medieval, and it was generally considered that a policy of public persecution would be preferable. They were indignant because the Americans required the treatment of these women in the best hospitals, and because the regular hospital diet and good treatment for them were insisted on. Many of the women, however, responded in a very gratifying way to this good treatment, and to the efforts made to bear out the statement that we were trying to help them lead a respectable existence in the future. There was also evidence to show that the fact that all cases were rigorously followed up served as an effective deterrent, many German girls avoiding the American soldiers altogether.

This policy, supported by the hearty cooperation of all concerned, enabled women of all classes to be apprehended. They included semiprostitutes, such as café waitresses and the inmates of hastily organized brothels, factory girls, shop girls, and women and girls living at home. A large majority were found to come from the industrial, rather than from the agricultural, sections. It provided prompt treatment for all, and, it is hoped, reformatory influence for some of these unfortunate women. It made possible the extermina-

tion of all extemporized houses of prostitution through the prompt internment of all the inmates. It may have served as an object lesson to the German population in what we think are more modern, more rational and more effective methods of dealing with prostitution and venereal disease.

All soldiers found with acute venereal disease, or chronic venereal disease in an infectious form, were sent at once from their units to a field hospital, established in suitable German buildings, where they were treated in the venereal ward without pass privileges. Standard methods of treatment were used. Cases with severe complications and all cases of fresh chancre had to be evacuated farther back. Three successive negative examinations of fluid expressed by prostatic massage constituted the criterion of noninfectiousness in gonorrhea. The men were all tried by court-martial, according to army regulations, and any confinement given as punishment had to be undergone after they had left the hospital. In this ward also neo-arsphenamin treatment of all old chronic (noninfectious) syphilitics who could be discovered in the division was carried out.

The results of this campaign have to be estimated from the figures in the accompanying tables. Beginning in February, 1919, numbers of men went away, principally to France, on leave, and from these men came a considerable proportion of the cases of venereal disease. The only part of the campaign affecting this incidence was the prophylactic instruction. A large proportion of the men contracting disease on leave had failed to take prophylaxis for various reasons. Instruction was pushed very hard when this fact became known, printed posters being used freely to assist it. From the first half of March on, cases contracted on leave showed a gradual diminution throughout the Third Army, including the Third Division. In the occupied area, the number of cases contracted each week showed, after reaching its peak, a decline to a low figure. The total figures for the Third Army are lower than any ever previously reported elsewhere. It is not going too far to assign this good result to the energetic efforts made in the campaign which has been here described.

The effectiveness of the campaign is not ascribed to any one of the measures comprised in it. Throughout the American Expeditionary Forces it was shown that the problem was most effectively handled when every avenue of attack was utilized. Indeed, it seemed that each measure had a synergistic effect on the others used simultaneously with it; no doubt this was due to a conscious or subconscious effect on the mind of the individual soldier, who found an effort of the authorities, whenever he turned, to amuse and occupy him, to instruct him, to prevent his reaching prostitutes, to provide prophylaxis, to give him the best treatment in case all else failed to keep him from being infected, and to punish him for this infraction of discipline and public spirit. Every soldier, even the dullest, must have become aware at some time of the far-reaching schemes to take him home clean. It is at present impossible that such a campaign of quarantine could be made in a peace time community. Having been prosecuted, however, under such unusual conditions, its methods and results may well be of interest from a standpoint of social hygiene, since they show what can be accomplished when all elements of the problem are under control.

AORTITIS SYPHILITICA

C. F. HOOVER, M.D.

CLEVELAND

An editorial in a recent number of *THE JOURNAL* gives the impression that the diagnosis of aortitis is something very recent, and in practice rests on the development of subjective symptoms and the use of the roentgen ray and the Wassermann reaction. The following statement is made¹: "It seems highly probable that in the aorta, just as in the central nervous system, definite lesions may be present without any symptoms whatever, and it would seem that some method of diagnosing syphilitic aortitis during the pre-symptomatic period must be devised." Such a statement comes as a great surprise to clinicians whose professional career extends over the past three decades.

The diagnostic signs of aortitis were clearly described long before the roentgen ray or the Wassermann reaction or the spirochete was known to the medical profession. Physicians who knew and built on the work of Huchard² must certainly share in the writer's surprise over the statement that the "presymptomatic period of aortitis is still wanting a method of diagnosis." If inaccurate percussion and palpation and auscultation are employed, then of course the roentgen ray affords the only dependable diagnostic method; but in the hands of an examiner who in a routine manner estimates the size and elasticity of the ascending aorta, just as the character of the arterial pulse is studied, the presymptomatic period of aortitis is diagnosed with fully as much accuracy as can be procured by aid of the roentgen ray and Wassermann reaction. Fortunately for the recognition of early aortitis, the ascending or first portion of the arch shares in the process in fully 95 per cent. of the cases, and in the majority of cases the pathologic changes are confined to this portion of the arch. This discussion of the subject will be limited to the first or ascending portion of the arch.

If only the ascending arch is diseased, without accompanying mediastinitis or encroachment on the lumen of a coronary artery, the patient's capacity for exercise will not be impaired, there will be no subjective symptoms of any kind, and the volume of the pulse, the pulse pressure, and the characters of the anacrotus and catacrotus will be normal. What is vaguely described in the editorial as "so-called pulsatory plethora, namely, a marked pulsation of the peripheral vessels," implies a very advanced and extensive lesion of the aorta. Such symptoms are the capillary pulse, large pulse pressure, celerity in the catacrotus, and pistol-shot tone in the femoral artery. These cases were described by several writers years ago as cases of "pseudo-aortic insufficiency." There was nothing "pseudo" about it; they were cases of genuine insufficiency of the aorta, but not insufficiency of the aortic valve. The large pulse pressure and capillary pulse were simply evidences of the ventricle compensating for a loss of elasticity in the aortic tube; hence the systolic blush in the capillaries and relatively low minimum diastolic pressure, for which the heightened systolic pressure compensated. The pistol-shot tone was due to the sudden arrest of an exaggerated excursion of the arterial wall. The so-called "pulsatory plethora" was evidence of a severe and extensive lesion of the aorta.

1. Syphilitic Aortitis, editorial, *J. A. M. A.* 73: 1615 (Nov. 22) 1919.
2. Huchard: *Maladies du cœur et des vaisseaux*, Paris, 1889.

The important case, from the standpoint of a practicing physician, is the early one with slight or no subjective symptoms on the part of the patient. It is the lesion of the ascending aorta, that part of the aorta which is very accessible and susceptible to very accurate criticism so far as its size and elasticity are concerned. Such are the early cases of syphilitic aortitis, which respond well to treatment and for this reason should be recognized by the examining physician. If the diagnosis is not made until "pulsating plethora," angina from functional ischemia of the myocardium, and the broad silhouette from the roentgen ray constitute the diagnostic evidences, then the therapeutic opportunity is lost.

Elastic, fibrous and muscular tissues form the wall of the aorta. The smooth muscle fiber is, however, the constituent which enables the aortic wall to withstand intra-aortic pressure. When the muscle fiber deteriorates, the aortic tube is elongated and dilated. This increment in size need be very little to give unequivocal evidences to physical examination. On one occasion the pulsating aorta was clearly visible and palpable 4 cm. to the right of the sternum. The necropsy revealed that the entire ascending arch of the aorta had a uniform circumference of 11 cm., which means a diameter of 3.5 cm.—less than the distance to which the aorta extended to the right of the sternum. The projection of the aorta against the anterior thoracic wall to the right of the sternum was due more to its elongation than to its dilatation. It is elongation of the ascending arch and not dilatation which renders the aorta so readily accessible after slight pathologic changes.

ELONGATION AND DILATATION

Now, what physical signs will elongation of the ascending arch of the aorta give? The visibility of the aorta to the right of the sternum depends not only on elongation and dilatation of the aorta, but on the size of the thoracic cage and volume of the lung. With a given size of aorta, the patient with a chest of large anteroposterior diameter will afford less evidence of the enlargement of the aorta to the right of the sternum than will the patient who has a chest cavity of small anteroposterior diameter. As a rule, by the time the aortic pulsation is visible to the right of the sternum, one is dealing with a severe aortic disease, which requires no particular skill in diagnosis and offers little prospect for improvement with the employment of therapy. It is very important that slight degrees of enlargement of the aorta should be detected by the physician, because it is only in the early stages that therapeutic results are satisfactory.

Percussion for aortic dulness to the right of the sternum should be done by the direct palpating method. If one employs mediate percussion in this vicinity, the sternum and neighboring ribs are included in the pleximeter. If percussion is to be of a definitive character, and the examiner is to define accurately the limits of a resistant body behind the thoracic wall, then the method of percussion must be one which will employ the smallest possible pleximeter area, and this is best accomplished by employing direct percussion with the extended finger. As a matter of routine, the examiner should percuss the intercostal spaces to right and left of the sternum, beginning at the first intercostal space on the right and continuing downward to the fifth, and percussing downward from the first intercostal space on the left until precordial resistance is encountered, which is usually on the third rib. If the aortic arch

projects beyond the sternum at the second interspace, then the examiner will perceive increased resistance and diminished resonance in the second interspace to the right as compared with the second interspace to the left of the sternum; and comparisons should also be made between the resistance and resonance of the first, second and third interspaces to the right of the sternum. If this method of percussing is employed, the examiner will find that the projection of the aorta on the anterior thoracic wall, as determined by percussion, will not be inferior to the projection of the silhouette of the aorta as seen by the roentgen ray, and under some conditions the information gained by percussion is more dependable.

SYSTOLIC PULSATION OF THE ARCH

An increase in pulsatory expansion of the aorta during systole may be detected by palpating bimanually. The examiner places his right hand over the second interspace at the right of the sternum, and his left in the interscapular space at the left of the vertebrae. This method of palpation does not employ the tactile sense or vibratory sense of the palpating hand, but the muscular sense of the thoracoscaphular muscles. But the muscular sense of the muscles which lead from the head to the neck and shoulders is much more delicate than the muscular sense of the thoracoscaphular muscles, and for this reason I find it a very distinct advantage also to apply the ear over the second interspace to the right of the sternum. An expansile pulsation is very often perceived by this direct method of auscultation when by employing the hands the pulsation escapes detection. So if there is any reason to suspect an enlargement of the ascending or transverse or descending arch of the aorta, it is a good practice to auscult with the ear directly applied to the chest; and coincidentally with the audible sound the examiner will often perceive over the aortic area during systole an anteroposterior expansion which will be imperceptible to the palpating hands.

Further evidence of enlargement of the ascending arch of the aorta is accentuation of the aortic second sound and the palpable diastolic impact perceptible at the second interspace to the right of the sternum. Accentuation of the aortic second sound depends purely on accessibility of the aortic tube due to its proximity to the anterior thoracic wall. Accentuation or increase in the intensity of the aortic diastolic sound does not depend on intra-aortic pressure. High aortic pressures do not give an accentuated aortic second sound unless there is increased accessibility of the aortic tube on account of elongation and dilatation of the aorta. When accentuation of the aortic second sound accompanies high aortic pressure, the accentuation is due to disease of the aorta and not to high pressure. If the first portion of the arch is elongated and dilated, the systolic pressure may be elevated or normal, but in either case we shall have accentuation of the aortic second sound in the second interspace to the right of the sternum. This accentuation means just one thing—increased accessibility of the first portion of the arch of the aorta.

We have very good contributory proof of this fact when there is traction of a normal aorta toward the right side due to retraction of the upper right lobe of the lung from chronic disease, as in fibroid phthisis. Under these conditions the aorta is displaced to the right by the receding right lobe, and the retraction of the upper right lobe of the lung also uncovers the arch

of the aorta. Under such circumstances, with a normal aorta and normal blood pressure, the aortic second sound will be greatly accentuated, and the accentuated sound may have exactly the same character as is frequently found in aortitis of the ascending arch.

PALPABILITY OF DIASTOLIC IMPACT

A palpable diastolic impact over the second interspace to the right of the sternum is perceptible in the adult only when there is increased accessibility of the arch. The diastolic impact is due to the arrest of a body in motion, and the body in motion is the column of blood within the aortic tube arrested by the closure of the aortic valve. This impact is transmitted as a vibration along the aortic wall to the examining hand.

The diastolic impact, I have observed, is best perceived by the part of the hand where vibratory sense is most acute, and that is over the end of the metacarpal bones. If one will apply a vibrating tuning fork over the finger tips and then over the ends of the metacarpal bones, it will be observed that the perception of vibration is much more acute over the ends of the metacarpals. One detects a diastolic impact through a sensory percept, which has been named pallesthesia, and it is very clearly differentiated from tactile sense and muscular sense. Correct palpation is very important. If the examiner will place himself at the right side of the patient and palpate the second interspace to the right of the sternum with the ends of the metacarpals, asking the patient to expire so as to render the aorta as accessible as possible, it will be found that only very slight dilatation of the arch of the aorta is required to make a diastolic impact clearly perceptible to the palpating hand.

LOSS OF ELASTICITY

Elasticity of the arch of the aorta greatly economizes the work of the heart in maintaining the minute volume flow of blood. Were the aorta not elastic, then the pulse would outlast the systole of the ventricle, for the duration of the pulse beyond the end of ventricular systole is due purely to aortic contraction. Should the aorta lose its elasticity, to compensate for the short duration of the pulse we should have a maximum systolic rise both in volume and in pressure, and a consequent lowering of the minimum diastolic pressure; but this modification of the pulse occurs only when the elasticity of the entire aorta is impaired, or at least when a very large portion of the aorta is involved. These are the severe cases which in former years were discussed in medical literature as pseudo-aortic insufficiency.

In this discussion I am dealing solely with elongation and dilatation of the first portion of the arch of the aorta, and that may be seriously diseased without modification of the pulse pressure or the duration of the arterial pulse. There is no physical sign ascribable to a loss of elasticity of the first portion of the arch of the aorta unless the root of the aorta is involved; and when the aortic ring and the first portion of the arch are diseased, the diastolic sound takes on a tympanitic quality. Now, an aortic second sound may be decidedly tympanitic and not accentuated, and this will occur when the root of the aorta is sclerosed and the aorta is not elongated and dilated. On the other hand, it is very common to find an accentuated second sound which is not tympanitic; and this will occur when the root of the aorta is not sclerotic, but when the remaining portion of the ascending arch is elongated and

dilated. I have been able to confirm both these statements by pathologic examinations. Furthermore, the tympanitic quality of the diastolic sound is not at all dependent on the height of the aortic pressure. On one occasion I had a patient under observation who was subject to periods of arterial hypertonus. For about three days in the week the man would have a maximum systolic pressure of 350, and then there would follow an interim of three or four days in which the maximum systolic pressure would be only 150. The only way in which one could detect the rise in arterial pressure was by palpating the femoral artery and using the blood pressure apparatus. This patient had no enlargement of his heart and no enlargement of his aorta. During the periods of high blood pressure, the aortic second sound was not palpable, and the increase in its intensity was very slight and certainly would have escaped observation had I not been making comparative observations on the intensity and duration of sound during periods of hypertonus and interims of normal pressure. Furthermore, the aortic second sound during the periods of high blood pressure had not the least suggestion of a tympanitic quality.

MURMURS

A murmur during the cardiac systole is audible over the second interspace at the right of the sternum when the ascending arch of the aorta is dilated, and also when there is stenosis of the orifice without dilatation of the arch of the aorta. The mechanism of production of this murmur is identical in both instances. The murmur is produced by eddies in the blood stream due to the passage of a column of fluid from a vessel of smaller to one of a larger lumen. Stenosis at the orifice and dilatation of the aorta directly beyond the orifice supply these conditions. But there are other factors besides relative stenosis which are necessary for the production of a murmur. The murmur will depend not only on change in the lumen of the tube, but also on the conformation of the tube where transition occurs from a smaller to a larger lumen. When the change is very abrupt, as seen in instances of a rigid valve projecting like a diaphragm into an aortic lumen, the murmur will be very loud, and so may it be quite loud when there is an abrupt dilatation of the aorta beyond the orifice. But suppose the aortic ring is normal, the root is not dilated, and there is a moderate fusiform enlargement of the ascending arch as it joins the transverse arch; then there will be no systolic murmur because this conformation does not give sufficient velocity to the eddies within the stream which are responsible for audible sounds commonly described as murmurs. Should there be fusiform enlargement of the ascending arch of the aorta as it joins the transverse arch, one should be able to percuss an area of dulness to the right of the sternum, one should palpate a systolic impulse when the ear is applied to the thoracic wall, and one should palpate a diastolic impact and hear an accentuation of the aortic second sound; but the aortic second sound will not be tympanitic in quality, and one may hear no murmur during cardiac systole. Should the ascending arch and the root of the aorta be sclerosed but the valves remain competent, then there would be present the physical conditions essential for the production of a systolic murmur and a tympanitic aortic second sound; but the intensity of the sound and the palpability of the diastolic impact and the systolic impulse would all depend on the dilatation of the arch of the aorta beyond its origin.

DISEASE OF THE CORONARY ARTERIES

Diagnosis of disease of the coronary arteries is not made by direct examination, but inferentially, by the history one is able to procure from the patient. When the coronary arteries are involved in syphilitic patients, they commonly give a history of progressive functional ischemia, and, of course, the cases which do not respond to treatment may go on to nutritive ischemia with all its consequences—infarcts and myomalacia cordis. Early in the patient's coronary history he finds he has lost the ability to perform vigorous exercise, and gradually his exercise will be cut down, so that moderate walking on level ground will be sufficient to bring on myocardial pain. In the early stages of syphilitic disease of the coronary artery, when therapeutic measures are of value, the diagnosis of coronary disease is based on a patient's history and his ability to exercise and not on any direct physical findings.

MEDIASTINITIS

Syphilitic mediastinitis is a common accompaniment of syphilitic disease of the aortic wall. Substernal pain, inclusion of the laryngeal nerve, paroxysmal tachypnea, and pain on swallowing have all been observed. The only direct physical sign of syphilitic mediastinitis, quite apart from functional disturbances, is the location of a friction sound audible at the second interspace to the right of the sternum. In the few instances which have come under my observation, the friction was audible during cardiac diastole and followed the aortic diastolic sound. Disease of the coronary arteries and mediastinitis may occur when the disease of the aorta is not severe, and, in fact, when the aorta shows no evidences of modification in size or elasticity; and under these conditions, of course, the diagnosis is based on the impairment in function.

The diagnosis of aortitis based on physical findings, as described above, is very frequently made before the patient complains of symptoms which can in any way be ascribed to the heart or aorta. The therapeutic importance of making the diagnosis early is due to the fact that, if the physical signs are recognized soon enough, the use of adequate mercuric therapy will cause all of them to disappear. I have seen all the physical signs described above as traceable to enlargement of the arch of the aorta and to impaired elasticity disappear entirely under vigorous antisiphilitic therapy. When the disease has progressed to aneurysmal dilatation, or to the point at which diagnostic skill is no longer required to make the diagnosis, then therapeutic endeavors are in vain, so far as restoration of function is concerned, though it seems very probable that the progress of the disease may be arrested and the patient's life greatly prolonged when restoration to functional and anatomic integrity is no longer expected. Recovery from the evidence of sclerosis of the first portion of the arch of the aorta occurs only when the diagnosis is made quite early in the disease.

Contrary to the import of the editorial comment cited,¹ the medical profession does recognize its moral responsibility in making an early diagnosis of syphilitic aortitis. The early recognition of the lesion is due to the work of Fournier and Huchard, and is based on physical examination. It is very doubtful if men who followed the work of these great Frenchmen found themselves making the diagnosis of incipient syphilitic aortitis with any greater frequency after the roentgen ray and Wassermann reaction were added to our diagnostic resources than was the case prior to introduction

of these diagnostic aids. The Wassermann reaction, *Spirochaeta pallida*, and the roentgen ray have all served to confirm and illuminate the work of these great clinicians, but bacteriology and pathology lagged many years behind the clinic in dealing cogently with syphilitic aortitis.

THE LABORATORY PROFESSOR AND
THE MEDICAL SCIENCES IN
THE UNITED STATES

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In a recent number of *THE JOURNAL*, Professor Symmers¹ combined a discussion of the defects in the teaching of pathology, and the deficiencies of the "lay professor." The first portion of the article was devoted largely to the difficulties in obtaining pathologic material. In conclusion, however, the front was shifted and a still wider problem in medical education was briefly touched on. Dr. Symmers has, I believe, placed two eggs of quite different variety in the same nest. Neither may hatch a bird of beautiful plumage, yet there is little relationship between the two except that they were to be incubated by the heat of a single discussion. Doubtless the subjects are worthy of treatment apart.

I shall not ask the reader's indulgence on the subject of pathologic material for teaching, although ten years' experience in collecting anatomic material in the varying control of New York City leads one to feel that it would not be difficult to warm up to a sparkling degree on such a theme. My attention shall be limited entirely to the problems and conditions underlying the question of the "lay professor."

It should be understood that what I present is intended not solely as a reply to Dr. Symmers' brief treatment of this matter, but as an expansion or broader consideration of a condition which is of grave importance to medical education in the United States. The consideration should be as nearly unbiased as possible, since it is a question not of the welfare of individuals, but one of medical instruction and progress in a great country during a season of most rapid changes and developments.

There are objections to the expression "lay professor" since, in spite of its being apparently clever, it is not actually clear. It immediately introduces partisanship and prejudice into a case which in the end must stand on its merits alone. Judging from Professor Symmers' text, he would put outside of the profession anyone who had not followed the routine road of the medical curriculum in order to enter that branch of the profession to which he intended devoting his life's effort. This is in spite of the fact that the men of scientific education in the laboratories have often spent more time in their preliminary training, which always necessitates the completion of the college course, and in obtaining their doctorate, than the medical student need do. The time element is not of great importance; but men so trained would under Dr. Symmers' classification still be outside in spite of the value

1. Symmers, Douglas: Defects in the Teaching of Pathology, and the Lay Professor, *J. A. M. A.* 73: 1651 (Nov. 29) 1919.

of their contributions to medical progress and practice. The profession would be limited to those having the legal status to practice it. To appreciate the full meaning of such a classification, may we look briefly at the recent medical past.

CONTRIBUTORS TO MEDICAL SCIENCE

A figure at once towers above all the rest, the son of a French tanner, a chemist by education and training, the father of bacteriology, the discoverer of the effective method of combating infectious diseases, he who disproved the idea of spontaneous generation, and laid the scientific basis for Lord Lister's aseptic surgery: Could anyone have so little regard for the history of medicine as not to include Louis Pasteur, the trained chemist, among the great leaders of the profession?

The phagocytic action of wandering cells in the animal body was discovered by a zoologist as a result of his earlier studies on the lowest invertebrates. When a young man he left his professorship of zoology at the University of St. Petersburg and spent his life in the Institut Pasteur constantly investigating the reactions of the organism to disease. Certainly few could deny that medicine is proud to claim the numerous contributions of that devoted investigator, Eli Metchnikoff.

Every medical man looks with pride on the record of the young zoologist who first stained and demonstrated the spirochete of syphilis after others had sought for years in vain. The investigations of the same man on the ameba of dysentery, and his final courage in sacrificing himself in order to facilitate such investigations when he was little more than 35, make all students of disease salute so noble a student as Fritz Schaudinn. A long list of other scientific men, without a medical degree, in Europe as well as in our own country, could readily be mentioned who have contributed most important discoveries as aids to diagnosis and the control of disease.

On the other hand, many of the great discoveries in medicine, as well as in pure science, have come from the medical men themselves, Harvey, Huxley, Haeckel, Ehrlich, and in our own country, Smith, Gorgas, Russell and others. But practical medicine, as well as other applied sciences, can ill afford to separate itself from the indispensable aid which the pure scientists in the laboratories have to supply. The primary thing to be kept in mind is, that when the laboratory man is a master in his field it matters not what his training may have been, whether medical or otherwise; he fully values and appreciates the bearing of his science in all its applications. As Pasteur stated it, "There is no greater charm for the investigator than to make new discoveries; but his pleasure is heightened when he sees that they have a direct application to practical life." Huxley estimated that the money value of Pasteur's discoveries on anthrax alone saved the world in sheep and oxen enough to cover the whole cost of the war indemnity paid by France to Germany in 1870.

In order to appreciate more fully what any applied science may expect to receive from the laity, we might look still further back in medical history. Out of the long record of *materia medica* there have come two so-called specific drugs for the treatment of disease. One of these, quinin, was discovered by savage laymen, the Indians of South America, while the exact credit for the discovery of mercury in the treatment of syphilis is difficult to place, but belongs to the profession. The race for the discovery of specific treatments after about 2,000 years of medical practice ends in a tie

between the Indians of South America and the physicians of Europe.

Among the long used drugs of vegetable origin, valuable in the relief of disease, the laity had in their possession digitalis, nux vomica, opium and many more. Modern medicine is further aided in the use of many of these substances on account of the fact that their active constituents have been separated by the "lay" chemist in concentrated form.

One of the earliest and most important steps toward putting medicine on a scientific basis took place about 150 years ago when the celebrated Englishman, Jenner, then a young man not yet in the medical school and without a medical degree, was told by a Gloucestershire milkmaid that one could not have the disease smallpox after having had cowpox. Jenner found this opinion to be commonly held by the people of the county, and told a number of physicians about it. None of them at that time were interested in such knowledge. While Jenner was studying in London he lived two years in the house of John Hunter, and communicated to him this peculiar relationship between cowpox and smallpox; but Hunter was also apparently not interested, being absorbed in his own work. Jenner, however, was born with the creative temperament. He was a musician, wrote poetry, and was a keenly observing naturalist as shown by his studies of the hibernation of the hedgehog, and the habits of the cuckoo. The last study was communicated to the Royal Society. With true scientific inclinations he returned to Gloucestershire after having studied in London and began the first experimental work on immunity. The actual discovery was made by the milkmaids of Gloucestershire, but its meaning was appreciated by the young apprentice, Jenner, years before Dr. Jenner devised the method of vaccination which made it unnecessary to lead the person to the cow. And thus the history of medicine progresses, until today it is the proud recipient on which is bestowed electricity, the roentgen ray, radium, etc.

Two kinds of minds are valuable or really indispensable to medicine: one the discoverer, and it matters not who or where he may be; the other, the one who comprehends the significance of things. The latter is often rarer than the former; many knew what the milkmaids said about smallpox, but only Jenner appreciated its value; and in so doing he became one of the landmarks in the progress of civilization.

A subject becomes scientific when it has advanced to a stage at which its study depends on exact experiment. Physics and chemistry long ago arrived at this point, and biology has been developing on such a basis for more than thirty years. These are the fundamental sciences on which medicine must progress. They have already supplied a splendid foundation. Much of it was built by the professional physicist, chemist and biologist; the practitioner of medicine in many cases has comprehended the worth of the discovery and devised the technic by which it was applied to the treatment of disease. Has either party to the contract actually suffered from the shortcomings of the other? Should the two be divorced, or are either to be considered "lay" by the other? Only one answer is possible: Does the trained engineer teach the fundamentals of physics and chemistry to the engineering student or does the physicist and chemist? The latter; and with elementary scientific knowledge the young engineer builds with a better understanding of forces and materials.

PROGRESS OF MEDICAL EDUCATION IN THE
UNITED STATES

With this fragmentary review of the parts played by extrinsic elements in the general growth of medicine, we may proceed to a consideration of the development of medical education in the United States which has led to the present conditions in American medical colleges. And finally an attempt will be made to suggest methods for the future improvement of the situation.

As late as the seventh and eighth decades of the last century it might be said almost without exaggeration that there were no actual working laboratories in the medical colleges of this country. There were only the smallest number of medical men devoting their time and talent to investigations in the fundamental medical sciences. In Europe, on the contrary, there were valuable investigations under way in almost every country, and the medical courses were in many universities already well arranged on an orderly scientific basis. One need only recall the purely scientific work being done by Huxley and other medical men in England.

In France, Pasteur was influencing the medical profession, and in Germany and Austria there were chemists, morphologists, physiologists and pathologists of historical prominence. While in this country there was no professional anatomist, zoology was just being born as a result of the arrival at Harvard of the Swiss naturalist, Louis Agassiz. Physiology was soon to begin on the return of young Bowditch from studies abroad. Chemistry in the medical college was taught by lectures and exhibits, or was included in the course of materia medica. Embryology was unknown to American medical men, who had not appreciated the simple necessity of understanding how the machine is built in order best to repair it. The essential apparatus for the study of histology was thought to be unnecessary extravagance, and pathology in its effort to arise labored under similar handicaps. The dissection of the human body was attempted on material either in a state of decay or mummified by medieval methods of embalming. This was of little consequence, however, since the actual knowledge of the subject was always to be harvested from that perpetual source of supply, Gray's textbook.

These and many other primitive conditions obtained when our fathers, and actually when some of us, wandered through that garden of knowledge then known as the medical curriculum. My own sire regrets the distinction of having obtained the degree of Doctor of Medicine from the University of Virginia after a single year's effort. Experiencing, however, a slight sense of hesitation in applying his knowledge to healing the sick, he came to New York and attended what many at that time considered the leading medical school of the country. After another year at the feet of pedantic preceptors he was again honored with the diploma of Doctor of Medicine. Such an experience even at that date was uniquely American. Another of my paternal relatives traveled to Vienna in order to obtain work in pathology which was then almost unobtainable in any form in this country. Many men of these schools are occasionally heard to criticize the modern course, since it does not begin at once by introducing the student to the clinic as in their day. They forget momentarily that in those good days there was little alternative to a start in the clinic.

After 1890, conditions took a decided turn and a rapid improvement began, due, in some degree at least, to the influence of a number of men who had studied

abroad and become acquainted with the vastly superior state of affairs in the medical schools of Europe. Interest was at once developed in the fundamental medical sciences, and the necessity of greater knowledge and longer training was realized as qualifications for a successful career in the battle with disease.

The advance in scientific medicine based on the discoveries of vaccines and antitoxins made a better education of the physician not only necessary for the intelligent application of such treatments, but really essential for any one aspiring to add to the knowledge or discovery of similar remedies. Preventive medicine was born, but refused to grow in size, or develop in power, on nourishment other than studious effort and thoroughly scientific understanding.

This state of affairs came as a shock to many physicians and surgeons who had up to this late time combined with apparent success a daily practice of their profession with a professorship of anatomy, physiology or pathology. A few boasted of having filled one after another of these chairs on the road to their ultimate ambition, the professorship of medicine or surgery. Others taught a cluster of subjects—anatomy, physiology, etc.—and as Oliver Wendell Holmes expressed it, "he occupied not a chair at Harvard but a settee."

It now became evident, with some persuasion from the outside in certain instances, that the fundamental sciences on which medicine was to live and advance must be properly included and taught in the curriculum. *Where were the teachers and investigators in these sciences to come from?* The medical men of the country graduating before 1890 had not in all cases been sufficiently trained in the medical sciences to qualify them to teach and work in these subjects. At the same time, many prominent physicians and surgeons could not afford to sacrifice their professional practice. *The simple fact was that there were but few men trained in the medical schools available for these laboratory positions.* When one contemplates the schools of that time, how could there have been many such men? And this was the day that the call went out from the medical colleges to the universities of America for a supply of professional chemists, physiologists and morphologists to train the medical student in the sciences which must underlie the modern prevention and cure of disease.

Many men had been trained in the pure science departments of the universities, and as a matter of information, some of these had gone for their education to the universities solely on account of the fact that laboratory training was not then to be had in the medical schools. Many of these men with natural interests and inclinations toward the medical sciences responded to this opportunity to work in the medical colleges. They did not intrude themselves or come into these positions because there were no others to be had, but were invited, and entered solely through preference for the work and their interest in medical science. I know instances of chemists, physiologists and morphologists having had invitations which gave them the opportunity to choose between professorships in the universities or the medical college, with the salary equally short in both cases, but they chose the medical college. I know other examples of laboratory professors in medical schools having gone to chairs in the university. And I have known of one such case in which the medical college later urged the professor to come back to its department; but the invitation was declined. Men of ability usually choose the atmosphere in which they work most effectively.

At the present time the number of scientifically trained men in the medical laboratories is unusually large, and their record as contributors and teachers is far from discouraging. The American Association of Anatomists counts among its members the full time men of professorial rank in almost every department of anatomy in the United States. Of the full professors of anatomy there are forty-five with a medical school education, and twenty-seven have been educated in the universities. Among the professors with the degree of M.D., thirty-five are directors or heads of anatomic departments, while twenty-one of the non-medical professors likewise head departments. In this country there are seventeen assistant and associate professors of anatomy with the M.D. degree, and twenty-four men of similar rank who are doctors of philosophy or science. Therefore, of the professional anatomists, sixty-two have gone into the subject after receiving the medical degree, but only the smaller percentage of these have served as hospital intern or had any clinical experience other than that obtained during the last year of the medical course. The same, in general, is true of the European anatomists. As Dr. Symmers mentions, Guy's Hospital requires the anatomist to have passed the examination for a fellowship in the College of Surgeons. It must be known, however, that this is simply another examination: the candidate need never have served in a hospital or had clinical experience. I have met men studying on the continent for their fellowship examination, and it is largely a matter of cramming much like our state board and hospital examinations. The fellowship is sometimes taken by a chemist working in the laboratory merely to obtain the letters F.R.C.S., which mean much to some people.

After the medical graduate becomes a professional anatomist, his time and efforts are so completely devoted to the difficult task of learning the subject and problems of morphology, and the teaching of students, that interest in the practical aspects of medicine other than its educational phases is soon lost. It has been said in this country that the teaching of medicine is not a medical problem but an educational problem.

Fifty-one professional anatomists have received their morphologic training in the universities, and have developed an appreciation of the medical and surgical aspects of the subject through a contact with the clinics after becoming associated with the medical school.

In considering the members of the American Physiological Society, it is found that honors are equally divided as to the number of full professors from the medical school and scientific school groups. There are twenty-three professors of physiology with the M.D. degree, and twenty-three with either the Ph.D. or D.Sc. Of the assistant professors, ten have the M.D. degree and thirteen do not. Three of the professors of physiology, who were not educated in the medical schools, have filled with distinction the position of dean of three leading medical colleges, Johns Hopkins, Minnesota and Virginia.

The Bio-Chemical Society shows only three full professors and one assistant professor of chemistry in medical schools with the M.D. degree. There are twenty-two full professors and twelve assistant professors of chemistry with Ph.D. degrees in the medical colleges. The chemists are derived almost entirely from the scientific departments of the universities, and yet their recent contributions to the chemistry of metabolism and to exact medical diagnosis have been of the utmost importance. One of these Ph.D. pro-

fessors of chemistry has recently filled the office of dean of Washington University Medical College most successfully.

In pharmacology the conditions are reversed, there being sixteen full professors and eleven assistant professors with the M.D. degree, and only four full professors without the M.D. degree. It would be unnecessary to compare the recent accomplishments of pharmacology with those of biochemistry.

The numbers of professors in physiology and chemistry are seen to be fewer than in anatomy on account of two facts: In the first place, in departments of anatomy the courses in gross and microscopic anatomy are frequently each in charge of a full professor or at least of an assistant professor. The second reason for low numbers in physiology and chemistry is that in some of the smaller schools the two subjects are taught under the direction of one professor. There are still a few settees among the furniture of the faculty room in the medical schools. In some cases this is due to lack of men, but more often to lack of money.

Finally, on a percentage basis the men of professorial rank with the M.D. degree are thus distributed in the different medical laboratories: Of anatomists, those having the M.D. degree constitute 55 per cent., of the physiologists 48 per cent. and of the medical chemists only 10 per cent.

All of the head pathologists have the M.D. degree, yet many of the pathologic laboratories contain, among their staff, men without the medical degree. Several leading professors of bacteriology in the medical colleges have had their initial training in the scientific schools and do not have the degree of M.D.

These different percentages of doctors of medicine in the various laboratories indicate that the earlier in the medical course a subject is given, and the less that subject is taught in the clinical years, the more surely will the student fail to develop a lasting interest, and never come back as a laboratory worker in the subject. At present, chemistry is taken earlier in the course and is less used in the instruction by the general clinician than the other laboratory subjects. Thus few, if any, doctors of medicine come back into the chemical laboratory. Even in England many of the leading physiologic chemists have not taken the medical course. A number of these men are of international distinction—Plimmer, Hopkins, Bayliss, Schryver, Armstrong, Harden, Dakin, Barger and others. Physiology is considerably more used and reviewed in the later years of the course, and so more medical men are found in this laboratory. Anatomic knowledge is employed still more throughout the course, and more than half of the professors have the medical degree. Pathology, being the science of disease, is available only in the medical college, and is used throughout the curriculum. Here, as one would expect, all of the heads of departments have the M.D. degree; but several of these have also worked in the scientific school for a university degree. As the clinical instruction throughout the country becomes more and more scientific, and involves still more physiologic knowledge and more chemistry, the attraction of these subjects for the medical student will no doubt improve.

At present we see, therefore, a considerable proportion of men trained in the fundamental sciences working in the laboratories of the medical colleges. Do these scientists have a sympathetic appreciation of the medical situation, and do they obtain a knowledge of actual medical or clinical problems? They do, in the

case of those worthy of their hire. The M.D. graduate shows that he has an interest in medicine by having come to the medical college to study. In the case of choosing for a professorship between two men of equal ability, the preference should be, and is, always given to the M.D. by the medical college.

TRUE SITUATION IN THE SCHOOLS

It may be well just here to consider some of Dr. Symmers' statements of the situation in medical colleges in the light of the foregoing review. He says: "There are schools in this country in which the teaching in physiology and of physiologic chemistry is entrusted to men who have received no systematic training in medicine." This is correct, but does not quite convey the idea that in almost all medical colleges physiologic chemistry is taught by such men, and that half of the departments of physiology are under their direction. If we depended on medical graduates it would be impossible to teach chemistry in the medical colleges, and half of the departments of physiology would find it difficult to obtain a suitable director. Has the physiology taught and contributed by Howell at Johns Hopkins and Lusk at Yale and in New York been less useful to medical students than that taught by any two men that have passed through a medical course in this country? Has the work in biochemistry of Mendel, Folin, Benedict or Van Slyke been inferior to that of one or four men with medical degrees? Who contributes the textbooks of physiology and biochemistry most used by the medical students in the leading colleges of this country? The same texts are frequently used in the medical schools abroad, and some have been translated into continental languages.

To quote again: "There are at least two representative schools in this country in which the chair of anatomy is filled by men neither of whom holds a degree in medicine." This does not fully describe the situation, since there are twenty-one heads of anatomy departments who do not have a medical degree, and thirty-nine who have. Only very few of the thirty-nine did more than finish the last year of medical college, so that they have had no hospital or clinical experience other than that obtained in the medical course. Dr. Symmers fears that the anatomist without the medical degree is too short-sighted an individual to be able to enliven his course by constant reference to points of surgical value. Old songs all have a mellow tune! Eighteen or twenty years ago by no means all of the medical colleges in this country had professional anatomists teaching the subject; to put it gently, they understood little anatomy. Thus, some physicians still have dim recollections of surgical points learned in the anatomy class. They might realize, however, that they failed to receive a conception or an understanding of the principles of development and structure which enter into the make-up of the human body. These principles of structure have an important medical as well as surgical value. The good mechanic must not only understand the structure of his machine but should know how it is built and what each part does. The human body deserves at least such knowledge of its parts. In teaching the anatomy of fractures and dislocations to thirteen classes of military surgeons, I found them all to realize that the same knowledge of anatomy was involved after the fracture or dislocation as before. As a fact, it isn't any more the surgical points of value than the anatomic points of value, when properly given, which enliven the course. The study of living models,

which should begin on the first day, brings real life and interpretation into the modern anatomic course. It is probably best for the anatomists to teach anatomy and the surgeons surgery. Every one forgets the details, but the fundamentals of a subject are the laws which live in the mind of him who has known.

The teaching of embryology, Dr. Symmers says, "is commonly left to instructors few, if any, of whom are capable of vitalizing the intimacy between it and pathology, notably in the vast domain of tumors." Reversing the idea, the embryologist is often impressed by the inability of the pathologist to give logical interpretations, on account of a lack of first hand knowledge of embryology. Embryology is one subject that must be studied first hand in order to use it in deductive reasoning. There is a surprising number of able embryologists of international reputation teaching in American medical colleges, and Minot and Mall were their leaders.

"The teaching of histology is all too often entrusted to an assistant with the alphabetical distinction of a bachelor's degree in arts or science." This is a mistake in either the place or the time, as today in the United States a professor with one or two doctor's degrees generally gives the histology course.

How could any intelligent person, trained as a scientific investigator, camp for many years within the walls of a medical college, teaching a basic medical subject to students as well as doctors of medicine, without knowing what the problems of medicine and surgery must be? How could a medical student gather in so much during the last year or two of the course, that is, on supposition, beyond the grasp of the scientifically trained men who taught him during the previous two years? It should be comprehended that these laboratory men may learn first hand without a teacher. Every medical man does the same. Some students actually learn in spite of a teacher. The one great defect in the general school system as well as in the medical college is that the student is so rarely expected to learn for himself, he must be taught and too often from books. After all, however, it takes very simple mathematics to prove that the world would stand dead still but for the fact that each generation of students knows more than its teachers. This little *more* they learned for themselves, and this is the degree to which the generations push the world forward.

It must be realized that the men with the M.D. degree coming into the laboratories quickly lose touch with the clinical aspect of things in their effort to master and do creative work in the laboratory branch of their choice, while, on the other hand, the scientific man comes into the medical laboratory after being trained in his particular subject, and his effort for the first number of years is to acquaint himself with the medical bearing of things. Almost all such men that I know have studied general pathology and have attended systematically medical and surgical clinics for longer or shorter times.

Why is there this periodic excitement on the part of some clinicians and occasionally a pathologist, such as my friend Dr. Symmers, regarding the dangers to medical teaching and practice that might come from these men educated in the scientific schools? There is not an instance in history, so far as I have been able to gather, in which any harm has been done, and yet men of such training have worked in medicine for quite a long while in all the civilized countries of the world. The men who have aided in the past are not likely to

damage the future. But has the progress of medical education in this country been aided at all times by all the physicians themselves?

CHANCES FOR IMPROVEMENT

No man has been longer or more intimately connected with the development and progress of medical education in this country than Professor Welch. It is interesting to note that in organizing the School of Hygiene and Public Health at Johns Hopkins he has associated himself in the first place with another leader, Professor Howell, and has headed several of the chief departments of the school with men not of medical college training but of international reputation in their scientific lines. Public health and hygiene are certainly fields that should be entered by men of the medical profession.

How does a university choose its professors? In the case of a real university, by selecting the most eminent man available in the field, and certainly with little regard for his early college degrees. The remarkable progress in medical education has taken place since the better medical schools have adopted the same method.

Finally, what are the actual reasons why the medical schools do not produce a sufficient number of men for medical laboratory sciences? The first and most important reason is rarely mentioned, and that is, that the laboratories of the medical schools have not even yet been developed up to the university standpoint. The medical school is strictly on a college basis, the instruction is almost entirely by classes, and the departments are considered complete when the staff is sufficiently large to handle the routine curriculum courses. This is the college standard all over the world. Such a college is merely for educating the individual, and not for training and offering the atmosphere and opportunities for the mastery of a science and the investigation of its problems. This is the duty of the university. How do the great universities produce chemists, physicists and biologists? They accomplish this by conducting university departments of sufficient size to cover the chief phases of the subject, and by employing not one professor of chemistry in a department, but from four to six. Many schools of zoology have four, five or more men of distinction as professors in the laboratory, and here a student, already educated in college, can obtain a broad and thorough acquaintance with the problems of biology from men investigating its blind channels by observation and experiment.

In the second place, the usual routine inelasticity of the medical course causes the student to feel that he must not miss anything, and he is hurdled through with little opportunity to observe whither he is going. Now, it so happens that many of the medical colleges of England, and most of them on the continent of Europe, have more elastic arrangements; the student often spends longer in his actual medical education and almost always has an opportunity to ease up on the routine and become interested in some particular subject or branch of the medical organization. Then, particularly on the continent, the first condition comes into play. The laboratory departments of the medical school are developed on as complete a basis as the university departments, and there is not only one, but often four or five men of eminence working in the same laboratory of anatomy. This is often true even in the small universities, such as Freiburg, Würzburg and Jena. Therefore, the elasticity of the curriculum per-

mits the best students to become interested in the fundamental sciences, and the development of the departments in the medical schools is sufficiently mature to allow them not only to care for such men, but also to attract many of the best to come.

In this country there have been only a few such laboratories in the medical schools; but these have worked. The one in particular which recommends itself to my mind was the laboratory of anatomy at Johns Hopkins as conducted by the late Professor Mall. There was more than one professor of eminence in the department, and it had developed on a university basis. This laboratory, through the personality and ability of Mall, was able to perform the miracle of transmutation. It appealed to the medical student who had come with the primary object of entering the practice of medicine, and convinced him that medicine cannot live by practice alone, but that new truths await discovery on which the progress of the profession depends. The laboratory flourished to such an extent that it has supplied the heads of the anatomic departments in eight medical schools and has exerted a profound influence on all the rest. The salaries offered to induce these men, usually poor, to come into anatomy were notoriously small; but under Mall's influence there was no hesitation to accept low living for high thinking. Few, if any, other medical laboratories can boast of such a record, and it was established in spite of conditions.

Mall was a medical graduate, but there were no "lay professors" to his eyes. There were only those who possessed a knowledge of their subject and could contribute discoveries in aiding its progress, and others lacking such qualities. The first group he considered valuable; the second was not. Only on such a classification can medical science and medical education be improved.

Another anatomic laboratory of university dimensions is developing in the University of Minnesota Medical School. There are now at least four full professors and several assistant professors, about half with and half without the M.D. degree, engaged in investigation and teaching in this institute. It is interesting to recall that a university trained physiologist is the dean of this college. When we have most of the medical schools of the country with laboratory departments developed to this extent, there will no longer be a scarcity of medical students coming into laboratory work. But on the contrary, not only will enough of them desire a scientific pursuit to man the medical laboratories, but medical men will compete for the chairs of biology and the natural sciences in the universities.

Medicine, as well as every other profession, needs masters in their field, and past history has shown that they can be relied on to extend the field and properly teach the subject. A school need not desire an eminent physician as professor of anatomy, since such a man would rarely be an eminent anatomist; nor need it desire an eminent chemist as professor of medicine since, again, such a man would not be an eminent physician. An engineering school does not select a successful engineer, or even a trained engineer, to teach the fundamental principles of either chemistry or physics to the students of engineering. A medical graduate who desires to teach physiology does not become a physician but must become a physiologist. As Bernard Shaw puts it, "It scarcely becomes a waiter to have a barrister for a son; neither does it become a barrister to have a waiter for a father."

The increasing opportunities for full time clinical teachers and investigators, along with the tendency to include a fifth clinical year in the medical course, are factors which will obviously tend to make it still more difficult to attract the medical graduate into the laboratory subjects.

Lastly, the question of university salaries is a vital one, but let us not be deceived into thinking that this is the only element involved in keeping medical men out of the laboratories. The conditions mentioned above are certainly of great importance. Proper salaries, however, will do much to put the laboratory teacher on a more efficient and dignified basis. There are still two opposing parties in the campaign for the "full time" clinical teachers, but there is a single fusion ticket which every one favors for the "full paid" laboratory teacher. The directing professor of a laboratory department in the leading medical colleges should receive a \$10,000 salary, and other members of the department should be paid accordingly.

There must always be two parties to medical progress, the individual, it matters not who, contributing the fundamental discoveries, and the doctor of medicine, with a keen appreciation of the significance of things, to apply the discoveries in practice. The physician will appreciate the more keenly when he is trained by the best masters in the principles of the sciences which are certain to contribute the discovery.

HOSPITALS OF GREECE

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Reports received in Washington, prior to the sailing of the American Red Cross Commission to Greece, laid emphasis on the needs of the Greek hospitals, which were said to be overcrowded and short of supplies and equipment. Following up this information I made a careful study of the hospital situation as one of the first duties of the commission. The policy of detailed inspection was followed, and information secured at first hand regarding the situation.

The natural independence of the Greek character, and pride in Greek institutions, often masked the real need, and we discovered early that it was necessary to visit each hospital and to learn the actual conditions from personal investigation. The casual visitor was usually told by those in charge that, while there were many things they could use if they had them, they were getting along as well as the situation would permit. The true condition developed only after the establishment of mutual confidence. Some of our professional visitors, meeting well trained Greek physicians in charge of large hospitals, were at first led to believe that they had ample supplies and equipment. In one hospital we found 300 patients without proper beds or bedding, and the supply of drugs and other essentials was absolutely exhausted; and yet the pride of the officer in charge prevented him from feeling at liberty to acknowledge the real situation developed by the war. When later we sent a consignment of a few essentials, he was exceedingly grateful.

Another reason for making a personal investigation of each hospital was the criticism often heard of whole-

sale and indiscriminate distribution of supplies in other countries. The Greek commission decided that it would not be guilty of this error if it was possible to avoid it. Relief was administered only after a careful personal investigation by either the head of the department or some member of his staff, usually a physician, but if not, always an American trained nurse. The head of the department personally visited more than half of the hospitals to which relief was given, and many of them were visited several times.

Some well meaning friends in Washington and Paris thought that Greece had been in the war such a short time that there could be no great need for aid in Greece or in the Greek hospitals. The same argument made against aiding Greek hospitals would have applied equally well to France. These countries were not appealing to the American Red Cross as paupers and suppliants, but as our allies engaged in the greatest struggle of history and with the most desperate and unscrupulous combination of enemies ever met by the soldiers of peace-loving nations. It was just as much our duty to aid brave little Greece as brave big France. Both were prosperous, and in normal times able to meet their civic obligations. France had had many years of peace in which to develop her resources, while Greece had been almost constantly at war since 1912, and in addition had been torn asunder by internal dissensions and revolution, resulting from the disagreements between a pro-German king and a pro-Ally people. This struggle between the Venizelists and the Royalists was as much a part of the whole struggle of the Allies with Germany as was the Battle of the Marne.

The state of transportation and the difficulties arising out of the complicated control called for great patience and farsightedness in dealing with the problems. However, the assurance given to us by the officers of the national Red Cross, and the fact that the Greek government gave us free transportation of supplies from New York up to 300 tons a month, led us to believe that the first consignment of supplies ordered before leaving the United States would be in Athens on our arrival. Soon after we had made a preliminary survey of the situation, we began to send additional requisitions to Washington for the things we found absolutely necessary. The slow way in which supplies were received in Greece was no doubt due to conditions that could not be controlled, but it prevented the amelioration of much suffering and made impossible the saving of many lives.

We were assigned by the Greek government to the department of Mr. Jean Athanasaka, undersecretary of state for war, bureau of hygiene and sanitation, through whom we developed the lines of work which the American Red Cross could undertake for relief in Greece. This broad-minded and public-spirited official used every effort to forward our work.

The sudden cessation of hostilities in the Balkans was looked on by many who were not on the ground as another reason why American Red Cross assistance was no longer needed, in forgetfulness of the fact that it was impossible for the civilian, or even for the Greek government, to secure necessary supplies in the market, regardless of financial ability. Furthermore, while many citizens of Greece were rich, the government was poor. In fact, the Greek army was still intact, doing more or less active service in Russia, Asia Minor, Thrace, and Macedonia a year after the signing of the armistice; and the epidemics of influenza and of typhus kept a heavy burden on the hospitals.

CONDITIONS RESULTING FROM WAR

The war had wrought havoc with the Greek hospitals. Practically all the civilian hospitals had been converted into military hospitals. The epidemic of influenza was quite as widespread and severe in Greece as elsewhere. They had passed through epidemics of typhus in Macedonia, Epirus and the islands; and on looking back at the situation, it is easy to see why practically all of the hospitals had exhausted their reserves of equipment, stores and medicines. The richest and best equipped hospital in Greece had no adhesive plaster, gauze, roentgen tubes or cotton, not to mention many other hospital essentials, and during the six months following our arrival was not able to obtain these on the market. Many hospitals had no hypodermic syringes or needles, and no thermometers or anesthetics, and lacked many other necessary but less important items. As soon as relations of mutual confidence were established, we received almost daily, from both civilian and military hospitals, requests for the most ordinary, everyday supplies which they were unable to obtain from any other source than the American Red Cross.

There had been no adequate accumulation of stores since the Balkan wars for the day of need. The country was plunged into active participation in the world war by a blockade which made it impossible for her to import even the most essential articles. For the sake of the argument we might still admit that her wealthy citizens were financially able to supply all her needs; but however willing they may have been, to do this was impossible. The world's stock of hospital supplies was all in the hands of the Allies or the Germans. Under the circumstances, this meant that all the surplus available to allied or neutral countries was in the United States, where it was impossible for the private purchaser to buy them or to secure transportation for them. England and France had no surplus stocks to sell. The United States was supplying them. All the world's supplies were required for the Allied armies, and were under Allied control. Prior to her entrance into the war on the side of the Allies, Greece was practically shut off from the world's markets and got little or nothing; and after she entered the war she got only such portion as was necessary for keeping her army in the field and supporting her military hospitals, which was indeed a scanty allowance. There was no way in which the civil hospitals could be supplied, and at the time the American Red Cross arrived in Greece, practically all the reserve stores had been exhausted. In fact, it was this very situation which caused the Greek Red Cross, in May, 1918, to send an appeal to the American Red Cross, and which determined the national Red Cross in Washington to send a commission to Greece.

A second object in making inspections of Greek hospitals was a desire to acquaint the American public with modern Greece, the home of the father of medicine, Esculapius, and his great successor in the science of healing, Hippocrates. Greece has made a wonderful start in providing her people with hospital facilities. She is far ahead of any of her neighbors, owing to the keen intelligence and the widespread education of the Greek people; and the conditions of need we found were due to wars and epidemics, and not to a disregard and ignorance of the value of such institutions. We also hope that in view of our acquaintance for several months with this splendid little nation, the Greek people

will be willing to accept a few suggestions by way of constructive criticism. I have left out of this general statement many details, but these will all be found in the reports of the commission to the national Red Cross in Washington. Accompanying these will be about 200 pictures of Greek hospitals and their personnel.

While most of the hospitals were originally intended to provide only for the poor, there is an increasing tendency to extend the service to all classes. Many of those, even in small communities, have excellent buildings, beautifully situated, often surrounded by well kept gardens, and showing a desire to make the surroundings attractive. Often the absence of the same attention to comfort and attractiveness on the interior is in sharp contrast to the surroundings. One is struck by the absence of evidence of active participation of the Greek Orthodox Church in the organization of their hospitals. There seem to be no orders of monks or sisters wholly devoted to the care of the sick. The development of hospitals has been left largely to lay initiative. On the other hand, almost every hospital has its chapel. What Greek administration has already done in building and equipping hospitals is an excellent illustration of the enlightened progress which this people has made. They have always kept in close touch with France, Germany and Italy, and the methods of organization and equipment used are largely drawn from these sources. This makes the situation more difficult for an American to understand. One sees little in Greece to show contact with England or America.

DATA COLLECTED

In making hospital inspections, we devised a brief form, in order to have the reports uniform. It was expected that these data would provide only the essential facts. This form gave the name, location, character, management, and superintendent, directress or matron; physicians, surgeons and specialists in charge; hospital records, training school, nurses employed and how trained, number of beds and whether free, paid, surgical, medical, children, obstetric, soldiers or special; the facilities offered by operating room, dressing room, laboratory, roentgen department and pharmacy; and remarks covering any other interesting and important facts.

Numerous conferences were held with members of the ministry, hospital officials, physicians and others. We always found them actively interested in developing their institutions.

One circumstance that seriously interfered with preparing detailed reports on the Greek hospitals was the rapidly changing conditions as the country passed from war to peace. Many temporary hospitals had been established. Practically all civilian hospitals had been converted into military ones, and the process of reorganization was rapid and involved constant changes in our data. For example, one hospital of about forty beds was twice taken over by the military and twice returned to its civilian management; was through two epidemics of typhus and one epidemic of influenza, and at the time of our second visit was again administered by the military authorities to provide hospital care for a second epidemic of influenza among the soldiers. While this is rather an extreme case, it illustrates one of the difficulties we encountered in estimating the value of a given hospital. It is hardly necessary to say that a civilian hospital that has passed through so many

changes of management within two or three years has little left with which to begin a normal civilian hospital life in a country so far away from the source of supply as Greece has been during and since the war.

HOSPITALS OF EASTERN MACEDONIA

This report would be incomplete without special mention of the hospitals in eastern Macedonia, which was the main scene of relief work by the American Red Cross. This district of Greece must be classed with Belgium and Serbia in the suffering that the war brought on its citizens. They not only suffered the natural privations and hardships due to being situated in the war area, but they had recently passed through two wars that had entailed great suffering. Prior to this, they had lived under Turkish rule, which gave them constant hardship from misgovernment; and during the long years in which the grasp of Turkey over her European territory was weakening, Macedonia was the scene of a fierce Bulgarian propaganda almost as devastating as war. The hatred of generations of conflict was around them. Thousands (150,000) were carried from their homes into Bulgaria, where they existed two years under a system of cruelty worse than slavery. Their cities and villages were burned and pillaged, and after the Bulgarians were driven out desolation reigned everywhere. This was the condition when we first entered eastern Macedonia at Kavala early in November, 1918. The deported population was just beginning to return. The military hospital of Kavala was a tobacco warehouse where tobacco crates took the place of beds. The sick were pouring in, but there was little or nothing we could do at that time to help them. The civil hospital had five typhus patients and no others. There was no other provision for the sick in a city which had claimed more than 40,000 inhabitants. Drama was a little better off, but not much. Her small civilian hospital had been taken over for military purposes, and when abandoned by the army was little more than a shell, without supplies or equipment, although this city of 25,000 inhabitants had not suffered to the same extent as some of her neighbors. Seres, formerly a city of 20,000, had suffered more than either Kavala or Drama, and her hospital was practically ruined, so far as service to the sick was concerned, until it was refurnished and its supplies replenished by the American Red Cross. The villages had suffered equally. The sick were on every hand, and there were no supplies or equipment for the most essential comfort.

In aiding these institutions, we encountered many serious difficulties. The long distance from Greece to America, and the great demands of other countries on American supplies, were great handicaps. The time consumed in getting supplies seemed intolerably long, and not infrequently when they arrived the quantities were altogether insufficient and many important things were missing. Much time was lost by the sudden decision to reorganize the work of the Red Cross in the Balkans and place the several commissions under a general commission for the Balkan states. Not only was time lost by this reorganization, but many supplies intended for Greece were diverted to other fields. No doubt, in some cases the conditions in other countries were more urgent; but more often the diversion of supplies was due to a misconception of the situation based on information from sources that could not have had sufficient and proper information.

CLASSIFICATION OF GREEK HOSPITALS

While the hospitals of Greece could naturally be divided into three classes, civilian, military and special, during the active progress of the war they were all military. During this stage the military hospitals were divided into permanent, temporary and civilian, taken over for military purposes. It was necessary for the government to establish purely temporary hospitals in addition to those taken over, and some of these could scarcely be called hospitals. For example, one so-called hospital was nothing more than a series of single walled tents in which more than 800 patients were lying on the ground with nothing but thin mattresses or blankets under them. These conditions were the best that could be had at the time. A number of hospitals, such as hospitals for the insane, were visited, but no attempt was made to study them in detail, as the extending of emergency relief was all that the American Red Cross could undertake.

We inspected and have reports on practically all hospitals in Greece, of which forty-seven were military (or being used for military purposes at the time) and fifty were civil, making a total of ninety-seven. Seventeen of those classified as military will return to civilian service as soon as the country is on a peace basis. These hospitals have beds for more than 20,000 patients. Practically all the military hospitals and the majority of the civilian were given substantial assistance by the Greek commission of the American Red Cross.

A word is due regarding the way in which our work has been received in Greece. As has been said elsewhere, we first met an attitude of pride in their institutions and a spirit of independence and reserve in seeking aid from the American Red Cross. We have rarely been made to feel that there was any disposition to impose on us in any way. On request they have stated their needs fairly and have accepted what we could give them in an attitude of delighted appreciation. The files of the Greek commission of the American Red Cross will show a large number of letters of appreciation from managers, physicians and boards of directors, of the most kindly and appreciative tone. Often the name of the "American Red Cross" will be found on the marble tablet containing the names of benefactors which is usually placed in the main hall of a Greek hospital.

CONCLUSION

The time for reorganization is at hand. Greece, which is a peace-loving country like America, is looking forward to a long period of peace when there will be opportunity to develop and improve her institutions, and we have had ample indication that she will then turn to her allies for suggestions and help. The previous leadership led her to provide only for the army and for the poor, with the result that in most of the hospitals the elements of comfort, cheer and social and moral improvement, which we consider so essential, are lacking. The vase of flowers, the screened window and porch, the dainty tray, the music, and many other things which come with the training, skill and human touch of the trained nurse will change these bare wards from couches of distress and suffering to homes where the sick may be surrounded by all the comforts of a home with the addition of all those touches of human sympathy which an educated and trained nurse instils. The three outstanding needs of most Greek hospitals are, modern sanitary appliances, fly screens, and proper

training schools for nurses. To meet this last need the American Red Cross will establish in Athens a training school for nurses on modern American lines. The splendid educational advancement of Greece along other lines makes her ready and, judging by many expressions made by her citizens, willing to accept new standards for her hospitals. It is in this that American influence can be of great service. Our constant visits to the hospitals and consultations with the managers, physicians, nurses and others interested have convinced us that there will be radical changes in the hospital ideas in the near future. In another chapter of this report will be found a brief detailed analysis of each hospital. In securing these data we have seen every department of almost every hospital in Greece, and we trust that the accumulation of data and the analysis of our findings may lead to a new understanding of what the hospital stands for in a community. During our inspections we uniformly made a list of the more essential needs of each institution, and in making our requisitions on Washington, Paris and the Balkan Commission for supplies, we based them on the actual conditions. Our great difficulty was to get the supplies most needed.

EMPYEMA AT THE CINCINNATI GENERAL HOSPITAL DURING THE INFLUENZA EPIDEMIC*

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As a natural result of the pandemic of influenza of 1918-1919, there has accumulated a literature sufficiently extensive to form a library of moderate size. A large proportion of published papers deal with the subject of empyema; and since for the first time in the history of the disease, hundreds of thousands of men, in the prime of life, were congregated in the close quarters of army camps and camp hospitals, it is natural that the preponderance of articles should treat of the disease and its sequelae as observed under these conditions. This fact lends justification to a presentation of this study of empyema, based on experiences during the epidemic, in the surgical services of the Cincinnati General Hospital.

An apology might seem indicated for the incompleteness of many of the records, particularly the bacteriologic; but this is accounted for by the fact that there was a dearth of physicians in civil life and that at one time seventy of the nurses were ill with the disease.

From Oct. 1, 1918, to May 1, 1919, there were admitted to the Cincinnati General Hospital 3,688 cases of influenza, of which 625, or 16.6 per cent., proved fatal. Whereas this death rate from influenza appears high, it must be remembered that only the seriously ill sought admission to the hospital wards. Among these 625 deaths, five were in cases of empyema which came under our surgical care. Altogether, fifty cases of empyema were transferred from the medical to the surgical service, or were primarily admitted to the surgical service, though the latter was not often the case. In many of the 625 cases, empyema was recognized by exploratory aspiration, but was a small factor in the death rate. As was experienced elsewhere, a very large proportion of the patients died from the toxemia inci-

dent to the pulmonary complication, before the condition of the patient or the course of the empyema warranted surgical intervention.

In many of these quickly fatal cases, pleural effusion of greater or less extent was doubtless present. It was early recognized by the medical staff that influenza toxemia with moderate pleural effusion should be treated by aspiration alone, and that early surgical interference of greater magnitude was apt to be followed by speedy death, whether as a result of the interference or despite it cannot be determined. In our surgical services, aspiration in the cyanotic stage was practiced in only two cases, but both proved fatal. It was evident that the cyanosis was not the result of pulmonary compression from pleural effusion, but was caused by the toxemia due to hemolysis. In two cases, aspiration of small quantities of turbid fluid was followed by recovery.

That later interference in cases of empyema offers a better possibility of recovery is manifest by our series of forty-six cases in which operation was performed by incision, with three deaths in the hospital and one two days after release. The average stay in the hospital before operation was $14\frac{7}{10}$ days. Some of the patients were not admitted until a day or two after the inception of the disease, and it is therefore fair to assume as an average that at least sixteen days elapsed before operation.

The average age of the patients was 21.6 years, somewhat below the average in military camps; fourteen of the patients were under draft age. It might be inferred, therefore, that the low mortality rate in our series of empyema cases might be attributable to the lower average age of our patients, in accordance with the well known fact that metapneumonic empyema is much more tractable to surgical interference in young subjects than in those of more advanced years. Curiously enough, however, there were three deaths among the fourteen patients under draft age, their ages being 15, 16 and 5 years, respectively. On the whole, the age incidence of the disease in the civil practice of our hospital did not differ materially from that which obtained in the military and camp hospitals.

It may well be claimed that the type of empyema which prevailed in the influenza epidemic among the civil population differed in severity from that observed in military hospitals. It is regrettable that our bacteriologic examinations were not complete; the streptococcus alone was found in eight cases; the pneumococcus in seven; both streptococcus and staphylococcus in nine; and both streptococcus and pneumococcus were found in six cases.

The treatment instituted in all cases of empyema was that of drainage with immediate occlusion of the pleural cavity, after the manner I have previously described.¹ Because of it, or despite it, the mortality rate was only 9 per cent.; although certainly in two, and possibly in three of our cases, there was a double empyema, necessitating bilateral drainage. In none of these three cases, however, did the disease affect the two sides at the same time; there was an interval of from two to three weeks between the operations.

The mortality rate after empyema operations is ordinarily not considered very high, and yet we find that "in 299 consecutive cases observed in so excellent an institution as the Mount Sinai Hospital, during the period of ten years, the mortality reached the formidable

* Read before the Southern Surgical Association, New Orleans, Dec. 16, 1919.

1. Ransohoff, Joseph: A Simple Method of Draining Empyema, J. A. M. A. 66: 1196 (April 15) 1916

figure of 28 per cent."² The low mortality rate in our series (9 per cent. in forty-six cases, including some bilateral) warrants the publication of this report, and justifies in a measure the assumption, or perhaps presumption, that the method of treatment bore some relation to the favorable results.

The operations were for the most part performed under local anesthesia (in twenty-nine of forty-six cases), and whenever the intercostal space was ample, rib resection was not resorted to. In twenty-six cases rib resection was performed, and in twenty, intercostal drainage without rib resection. An ordinary drainage tube was used, with collapsible tube attached with or without a shield. There is always some danger of the shield's coming away from the rubber tube. One of our patients, a lad of 16, still carries such a shield within the thoracic cavity. He left the hospital forty-one days after operation, without the slightest discharge; the roentgen ray shows the shield in close relation to the chest wall. In most cases a tube was used without a shield, being introduced through an opening just large enough to permit its introduction. The incision was made at the most dependent point in order to assure efficient drainage; but not so near the posterior median line as to interfere with the free passage of the pus into a receptacle. The pus was, of course, never allowed to escape rapidly, and I am quite sure that the fluttering of the mediastinum, which is such an element of danger in rapid evacuation of the pleural contents, was thus avoided. The pleural opening and the outer incision were at once made watertight by sutures.

In only one instance did death occur on the table, and this in one of the extremely toxic cases referred to above. Irrigation with the chlorinated soda or other solution was not practiced in our cases during the early postoperative stage, although from military hospitals came paeans in praise of this procedure. In the later stages if the discharge continued, we resorted to the use of the Carrel-Dakin method with good results. As a primary measure, while the patients are still very weak, I believe that there is not a little danger connected therewith. It should always be borne in mind that in a considerable number of cases of empyema, particularly those following the insidious creeping pneumonias of influenza, subpleural abscesses, often of diminutive proportions, are discovered; it is because of the rupture of one of these abscesses that the pleurisy in reality develops. Injection of an irritating solution into the pleural sac is, therefore, always associated with the danger of irrigating the bronchial tree, the only tree for which irrigation is contraindicated. In not a few instances in which irrigation was practiced later, the fluid was expectorated by the patient and further irrigation had to be avoided. In only one of our cases did we have the unusual complication of septic peritonitis:

Briefly, the case was that of a medical student in a training camp, who, because of dislike of the surroundings in the military hospital immediately after the armistice, was discharged as well, although he had been ill for ten days. He entered the hospital with an empyema, streptococcic in character, and was operated on forty-four days after the inception of the disease. Three weeks later there developed what seemed to be a perforative appendicitis, for which a laparotomy was done. Streptococcic peritonitis was found; the appendical peritoneum was injected, though not more than the rest of the peritoneum, with plastic lymph and seropurulent effusion. An open pulmonary fistula necessitated the

discontinuance of the Carrel-Dakin treatment. The patient recovered and left the hospital with a small cavity 266 days after his admission. He has since been sent by the government to Roswell, N. M., for tuberculosis.

The average duration of stay in the hospital after institution of drainage was forty-three days; at the end of this period twenty-nine patients left with the wounds entirely or practically closed and the rest with considerable drainage. This seemingly high average is due to three patients, remaining 96, 203, and 266 days, respectively.

In order to check the end-results in our cases, the patients were followed through the social service. One man died shortly after leaving the hospital; his condition at the time was very serious and he was released against the advice of the physicians. Eight who recovered could not be traced by the social service. Of the rest, one is being attended at the surgical clinic for a slight pleural fistula, three have reentered the hospital for secondary operations, while the remaining patients have been found by the social service to be in good health and at work.

We may, therefore, state that our results with occlusion drainage have been satisfactory. The hospital mortality rate was 9 per cent., including fatal issue in one patient removed against advice. I am not aware that equally satisfactory results have been published from any of the large military hospitals. In comparing results, it would be unfair to charge our good results to the method of treatment alone, since in the large airy quarters of our new permanent hospital better results are obtainable for the relief of respiratory affections than in the cramped quarters of hastily constructed military camps. This factor, however, is not alone responsible for our favorable statistics, since it is evident that the mortality rate of 16.6 per cent. for influenza per se in the Cincinnati General Hospital is only a little less than the average in military camps. It is almost needless to say that in the after-treatment of our drainage cases the patient was quickly advised and instructed in the use of forced expirations by means of Woulfe bottles, and in such thoracic gymnastics as would aid in the expansion of the lung.

CONCLUSIONS

Finally, if I were permitted to interpret the experiences which we have had at the Cincinnati General Hospital with empyema during the period of the influenza epidemic, and with its treatment, I would crystallize them in the following conclusions:

1. Empyema complicating influenza is in itself not responsible for death; too early operative measures should be avoided and should be limited to simple aspiration.

2. Operation not earlier than the end of the second week gives the best results. Rib resection is indicated only when sufficient space is not at command without it.

3. General anesthesia is not necessary in most cases, but in our experience does not increase the mortality rate of the operation.

4. The old methods of drainage should be given up for some type of the occlusion method, by which the entrance of air into the pleural cavity is prevented and the egress of pus facilitated. A suction apparatus attached to the tube is deemed unnecessary.

5. Flushing of the cavity with Dakin or other solution is unnecessary, except when defervescence does not occur, which indicates that spontaneous sterilization of the cavity is not progressing normally.

2. Moschcowitz, A. V.: Surg., Gynec. & Obst. 28: 537 (April) 1919.

6. The small pneumothorax which sometimes remains after the healing of a cavity, as has been demonstrated by the roentgen ray, is negligible, since it disappears spontaneously in a short time.

Twenty of the operations were performed by myself, the remainder by various attending surgeons of the hospital, to whom I am greatly indebted for carrying out the suggestions which I believed essential to securing so low a mortality in the treatment of our empyema cases.

The fact that we were enabled to trace end-results in all but eight of our cases shows one of the many advantages of an efficient hospital social service.

THE TREATMENT OF MUCOUS COLITIS *

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The name mucous colitis (myxomembranous colitis) stands for a poorly understood clinical entity, and I shall therefore preface my remarks by a brief review of what is implied in the condition as I understand it. It may be defined as a condition characterized by the formation in the large bowel of great quantities of abnormal mucus. It should not be termed "colica mucosa" or "mucous colic," for colic occurs in only a small proportion of the cases. The disease may occur at any period of life from infancy to old age, and contrary to the prevailing belief, is encountered in males quite commonly as well as in females. It is probably hereditary to some degree, as I have found it repeatedly in parent and child, when I have usually noted in the roentgenogram the presence in each of the same type of redundant or looped colon, often with ptosis.

Though mucous colitis is of frequent occurrence, yet it appears to be infrequently recognized. The importance of its recognition is evident if we realize that, although at times the condition of the bowel may be merely incidental to more important lesions, it is often most prominently associated with serious states of physical debility or of mental instability. I would not say that it is a cause of these, but it does strikingly increase their manifestations, and its cure is not infrequently accompanied by their disappearance.

In severe mucous colitis the three outstanding manifestations are: abdominal pain, intestinal putrefactive toxemia and neurotic manifestations. Whether the patients are classed as suffering from colitis, or from neurasthenia or psychoneurosis, or from auto-intoxication, the mucous colitis must be treated or the patient will not be relieved of the other manifestations.

Usually, the patients seek a physician, not because of the colitis, but rather for persistent constipation, abdominal pain or distress, lack of physical energy, obstinate or recurrent headache, failure of physical or intellectual vigor, mental depression or complete nervous breakdown. Though they may have noticed strings of mucus in the stools, the patients commonly do not mention this unless interrogated. Hence, in a patient showing nervousness, depression of spirit, and lack of the usual forcefulness, it is well to search for a possible mucous colitis.

DIAGNOSIS

As there is no distinguishing factor other than the mucus, the diagnosis rests on: (1) the observation by the patient of the passage of mucus, either as strings accompanying the feces or as a complete mucous stool; (2) the finding of the characteristic mucus in a stool submitted; (3) the detection of the characteristic mucus after a test dose of castor oil or a test colon irrigation, or (4) the observation through a sigmoidoscope of a dry mucous membrane in the upper rectum to which are clinging the heavy, tenacious sheets of mucus. If mucous colitis is sought for only when there is colic, many of the most important cases will be overlooked.

Mucus.—This is tenacious and appears mostly in yellow, brown or sometimes black jelly-like masses, or in more or less desiccated plaques, strings, ropes, or scablike membranes. The strings may be many inches in length, and on being teased out in water prove to be casts of the bowel, or broad ribbons. Patients sometimes mistake them for intestinal worms. The mucus adheres with great tenacity to the wall of the bowel, so that when encountered postmortem it is removed with difficulty, even with forceps; von Noorden reports that he was unable to drive it off with a strong stream of water from a hydrant. Hence, it is not uncommon to find blood spots on the expelled mucus, as if it had been torn away like a scab. As a rule, the mucus bears only a few leukocytes and is without fibrin. In some of the persistent cases I have frequently noted about the mucus an odor that is entirely different from that of the stools, slightly suggestive of dead fish just thrown up on the beach and before they have become offensively putrefactive.

Besides mucus there are occasionally found quantities of blackish or brownish, gritty, irritating intestinal sand. Some authors report the frequent presence of blood in the stools (Mummery found it in 60 per cent. of cases), but after thousands of examinations I can report that this is not usual, and occurs mostly when the scablike membranes come away. It is regularly present in cancer cases, and frequently with polyposis; but in these cases the mucous colitis is not the important feature.

Pathology.—The changes are indefinite; the colon sometimes shows very slight alterations or even rarely no recognizable lesion, but usually the mucous membrane is more or less damaged. In some of the colons removed at operation the mucous membrane of the cecum and ascending colon has revealed a universally distributed area of inflammation, and the whole wall of this part of the intestine has shown atony, dilatation and poor nutrition. In some cases Keith has demonstrated absence of the normal nerve elements of Auerbach's plexus with consequent cecal and colonic stasis. The colon is often redundant or looped, and there is sometimes laxity of the abdominopelvic walls with ptosis of the transverse colon and of one or both flexures, with perhaps a movable cecum. In the persistently toxic cases, pyorrhea alveolaris and gastric achylia are not uncommon findings. Rarely cancer of the colon, polyposis, diverticulosis or some other localized lesion may underlie the condition. Not infrequently the descending colon is found in a spastic state.

Pain.—In a large proportion of the cases a certain amount of discomfort is manifested at some stage of the disease. It may range in intensity from nothing more than a little soreness to paroxysms of the most distressing colic; its location may be variable or con-

* Read before the Alumni Association of the University of Buffalo Department of Medicine, June 21, 1919, and the Medical Society of Atlantic County, N. J., Nov. 14, 1919.

stant, and in the latter event it has not infrequently led to a futile operation for some supposedly serious abdominal or pelvic lesion. At times, the whole colon, or a part of it, is found to be tender. The colic is the direct result of the attempt by the bowel to expel long-retained and clinging mucus; persistence of the attacks may be taken as an indication that not all the mucus has been liberated. The mucus, acting as an irritant, induces spasmodic contraction of a portion of the colon, and the pain is due to tension in the distended portion above this. The spasms do not produce the painful manifestations, for, as Hurst has shown, bowel pain comes from distention, not from contraction. The pain ceases after the reestablishment of the peristaltic reflex with dilatation below and contraction above.

It is to be remembered that pain of significant degree is lacking in some of the cases, and in many is absent for considerable periods. Yet even during the painless periods the symptoms are more manifest when the mucus is retained, and become less so following its expulsion.

Constipation.—In some cases several stools a day are passed, yet constipation exists, for the cecal cess-pool seems never to be emptied. Constipation is not necessarily a condition of infrequent defecation, but is rather one of insufficient or retarded defecation (Hurst); colon irrigations have shown that there may be considerable cecal retention of putrefactive contents, though the bowels seem freely open.

Intestinal Putrefactive Toxemia.—Without doubt, the neurotic manifestations and the condition of mental and physical fatigability may in many instances be traced directly to a chronic toxemia caused by the absorption of harmful chemical substances formed in the bowel. And it is probable not only that the constipated bowel of mucous colitis favors bacterial proteolysis, but also that the damaged mucous membrane promotes the absorption of deleterious material. The subject of intestinal toxemia is too large to be dealt with here; it is important to remember, however, that quite often the treatment of mucous colitis involves extensive consideration of the associated toxemia. There may be mucous colitis without putrefaction of the colon contents, or there may be putrefaction of the contents without colitis, but the two conditions are often associated.

COMPLICATIONS

Occasionally we encounter bronchial asthma, urticaria, angioneurotic edema, or erythema, complications which suggest either protein sensitization as a result of absorption of minute amounts of unchanged protein through the diseased bowel wall, or the possible absorption of some chemical formed in the bowel. For instance, histamin is at times a product of intestinal putrefaction, and when absorbed in sufficient amounts is capable of producing asthma, urticaria and angioneurotic edema.

A phenomenon, usually associated with gastric atony and observed by me in a few cases, is tetany.

Nervous or Psychic Manifestations.—Many of these patients, though not by any means all, have a variety of nervous symptoms. These may range all the way from a simple impressionability and hypersensitiveness in insignificant matters to severe nervous breakdown or such mental instability, lack of self-control and irresponsibility of action as to bring the patient to the borderline of insanity. Indeed, it is often quite impossible to decide whether the mucous colitis or the

psychoneurosis is the primary condition. Conspicuous in many are lack of self-confidence, absence of initiative, autosuggestibility, spells of discouragement, and fatigability, both mental and physical. Interesting are the phobias, such as the dread of visitors, of riding in a train, and of being alone at home or in the city streets. The colitis may begin with, or be aggravated by, a nervous strain, such as worry over money matters, over a wayward child, over a husband who drinks or over some skeleton in the closet, or by the assumption of social or business responsibilities that seem utterly beyond the patient's powers.

In a person of dominant type this onset of inability to cope with the daily responsibilities makes for discouragement, mental depression and fits of dejection. I have known strong men, physicians, lawyers, heads of great business, to be overcome by their feelings of helplessness and to burst into tears in my office. I have seen the president of a great concern weep while saying, "Doctor, I cannot face my directors at tomorrow's meeting." I have heard a medical school professor cry, "It's of no use my lecturing any more, I cannot hold the boys, I have lost my power." One patient, a strong man who had repeatedly put up a 100 pound dumb-bell as many as nine times, in the most doleful manner deplored the fact that he could not then get it up once. And each of these men, as the mucous colitis yielded to treatment, regained his old dominance and power. Sometimes such patients have slipped back again, and have been found to have a new access of the colitis.

What is the relation of the bowel trouble to the nervous system? Perhaps in some of the cases there is the same underlying cause for both the intestinal and the nervous symptoms. Among neurologists it is customary, however, to consider that neurasthenia or a psychoneurosis requires two conditions for its production, namely, an underlying mental deficiency, and a provocative factor the most pronounced of which is fatigue. Yet perhaps the underlying mental deficiency is not such an absolute requirement, for Féré says that "fatigue often provokes ideas of negation, persecution and disparagement," whereas Dubois remarks that "exaggerated fatigue may induce neurasthenic states in the best balanced individual." If, then, fatigue is the great provocative factor, may it not be that mucous colitis is one of the important producers of fatigue, either of itself or through the production of toxic substances? Certainly fatigue and fatigability are among the most striking accompaniments of mucous colitis, the patients being readily brought to a state of exhaustion by serious reading, by visitors, by responsibilities of any kind, or by physical exertion. In fact, they may feel fatigued even though they do nothing. So it is my belief that one of the important causes of these neurasthenic or psychoneurotic conditions is the fatigue or the fatigability which accompanies a mucous colitis.

Furthermore, as mucous colitis may induce fatigue or fatigability, so fatigue from other causes may increase the colitis. Therefore, one of my rules for such patients is "Never get tired, physically, mentally or emotionally."

PROGNOSIS

I have seen many patients in serious nervous states, who, after the cure of the bowel trouble, have ceased to be more than normally nervous; and because of the possibility or probability of such a happy result, I lay stress on the treatment of the bowel. I believe that

in a large number of these cases a cure is possible, but usually only after persistent treatment for a long time. And I believe that continued or repeated severity in the symptoms is often the result of neglect by the patient or the physician. The classification of the patient as a "neurasthenic" makes the outlook hopeless, for the physician then does nothing. The height of absurdity was reached by a speaker at a recent meeting of the Pennsylvania State Medical Association, when he said that "the prognosis is absolutely hopeless, the treatment is nil, and the sole prophylaxis would have been to sterilize the grandfather."

TREATMENT

In determining the method of treatment, two facts stand out prominently: (1) that retained mucus is harmful mucus, and (2) that the cure requires a long course of treatment. I am wont to tell my patients that a year is the minimum time in which a cure can be effected. The treatment is directed at the prevention of the accumulation of mucus, and at the removal of the associated conditions, such as colic, constipation, intestinal toxemia, disturbed gastric conditions, bad mental states and depressed general health. We shall take up, first, the treatment of the condition when there is no colic, or after the attacks of colic, and then the treatment of attacks of colic.

I. Treatment in Cases Without Colic or After the Attacks of Colic.—This is designed (a) to prevent accumulation of mucus; (b) to overcome constipation and intestinal toxemia, and (c) to improve the nervous and general health.

(a) To overcome accumulation of mucus, one of the best measures is a weekly purge with castor oil, or perhaps calomel and salts, or a purgative blue mass or calomel pill. This may be supplemented by colon irrigations every day or two for a week, and then every three or four days for two to several weeks longer, or once a week for longer periods of time. For this colonic lavage the patient should be on the left side for the first gallon of water in order to clean out the lower colon, and then on the back for the rest of the irrigation in order to enable the fluid to reach the cecum. Sometime preceding the lavage the bowels should be emptied, if necessary by an enema, in order to avoid carrying feces back to the cecum and to avoid starting up by the lavage the defecation reflexes which will prevent the passage of the water into the upper colon. The liquid used should be rather hot, and I regularly employ tap water, though occasionally sodium bicarbonate solution, a dram to the pint (sodium bicarbonate is changed to carbonate by heat). Physiologic sodium chlorid solution is not employed, because it makes the patient thirsty. The amount required is usually from 12 to 24 quarts, and it should be given slowly, with the reservoir about two feet above the patient. Frequently the putrefactive cecal contents are reached only after 4 or 5 gallons have been employed. If the irrigation does not bring out the mucus, this may be expelled one or several hours later. I always consider an irrigation a failure if no water is retained to be evacuated after the irrigation is finished, or if the water returns clear throughout; obviously, in such cases the liquid has failed to get past the spastic descending colon or sigmoid. Recently transduodenal lavage with 4 per cent. sodium sulphate solution has been employed with reported success. I have not used it for this purpose.

It is to be noted that when the mucus is readily discharged from the bowel the patient is safe; danger threatens when the mucus stays in and is not readily loosened and expelled. Many of the patients learn this fact, and when the mucus suddenly ceases to appear they will use every endeavor to clear out the bowel in order to avoid a renewal of their symptoms. Sometimes a cathartic taken the same night as an irrigation that seems unsuccessful may bring away great quantities of mucus that has apparently been softened by the irrigation water.

(b) The treatment of the constipation and intestinal toxemia is that of any form of constipation. There should be insistence on regularity of bowel movements, but restriction of the use of enemas and colon irrigations. I have seen patients who had come to think that any abnormal sensation could be removed only by enema or irrigation, and who had acquired the habit of using these several times a day. The diet must be ample, for in case of lack of food residue it will be necessary to keep increasing the laxatives. A diet containing bran, fruits and coarse vegetables may be effective, but in the beginning this is usually more harmful to the bowel than a mild tonic laxative. Exercise does not help to overcome constipation, except as it may result in increased appetite. There have been many athletes among my constipated patients. If there is ptosis of the abdominal viscera with laxity of the abdominopelvic walls (and these are exceedingly common), the patient should wear an inelastic binder for mechanical support, and should be put on exercise to help to strengthen the abdominal muscles. The patient should drink freely of water.

The best of laxatives is usually a softening and bulk-producing agent, such as liquid petrolatum, cascara agar, phenolphthalein agar, or small doses of milk of magnesia or salts. But these are not always effective and frequently must be supplemented by one of the tonic laxatives, cascara, rhubarb, aloes, senna, or senna with sulphur in the form of compound licorice powder. A measure of occasional value is the retention in the rectum over night of from 4 to 16 ounces of olive or cottonseed oil. In these chronic cases the drastic cathartics may be successful in getting out mucus, but should be employed only seldom. If such measures as these do not overcome the stasis and the toxemia, the question of surgery should be seriously considered.

Hemorrhoids are a bad complication, as they prevent the use of irrigations, enemas or such strong cathartics as castor oil. They may be treated by the nightly instillation into the rectum, by means of a soft rubber ear syringe, of 60 c.c. of warm olive or cottonseed oil to be retained over night.

(c) Improvement in the nervous and general health.

The diet may have to be modified according to the conditions of the stomach and upper bowel (achylia, hyperchlorhydria, gastric atony, etc.), and to overlook these is to fail in the treatment; but, in general, at the outset the diet should be of the bland lactofarinaceous type. Later there may be a gradual transition to a coarser type with sufficient vegetable and fruit. But there should be at all times limitation in the amount of readily putrefactive proteins, as found in animal flesh, eggs, beans, peas and lentils, these being replaced, if possible, by much milk in the dietary. Of these proteins, in my experience, those of chicken and egg are most prone to produce putrefaction; and peas and beans are more harmful when dried than when

green. The coarse diet at the outset, as advocated by von Noorden, is likely to give rise to gastric disturbances, particularly flatulence, and it seems quite rational to assume that an excessive quantity of coarse, indigestible, fermenting food will do more harm to some of these damaged colons than any mild laxative drug. But in all cases the diet should be ample and its quantity insisted on, for these patients readily acquire the habit of undereating because of a suspicion that this, that, or the other article of food does not agree with them.

If there is any definite surgical condition in the abdomen, such as appendicitis, cholelithiasis, adhesions, bands or pelvic disturbances, it should be overcome. In persistent cases, some surgeons operate on the bowel itself: (1) For cleansing and medicating the colon; as by appendicostomy or cecostomy, for the purpose of permitting daily irrigations through the whole colon. But these must be continued for from six months to two years (Mummery), and the procedure is not, in my opinion, a valuable one. (2) For overcoming stasis or for the removal of diseased portions of the bowel, by plication of the cecum, ileosigmoidostomy, cecosigmoidostomy, partial colectomy and complete colectomy. The indications for radical surgery and the choice of surgical procedure I shall not attempt to discuss here.

Occupation, recreation and rest in proper proportion should be advised. The patients must not be allowed to coddle themselves. They should get up before breakfast and not lie in bed in the morning; they should recline when possible, at a later period in the day, perhaps best for one or two hours after the midday meal, and they should retire early. They should give less time than usual to social or business responsibilities or give these up entirely, and they should not receive too many visitors. They should avoid adding unnecessary responsibilities to the necessary ones; for example, in a schoolteacher, the taking of extra college courses on Saturday, and on Sunday the teaching of Sunday School; in a business man the devotion of his evenings to club committees or to study. They should not undertake reading of too serious a character. It is of paramount importance that, for the time being, patients give up their ambitions, whether social or otherwise. They must, however, have some recreation, preferably golf, horseback riding, bathing or other outdoor exercise, or attendance at games in the open air.

The great rule is that patients must never get unduly fatigued either physically, mentally or emotionally. I explain to them at the outset that they are temporarily handicapped, and therefore cannot do as much as normal people. On the other hand, I do not allow them to shirk all responsibility, but try to get them to do as much as lies well within their powers, encouraging them to attempt more and more till their full powers are restored. Some women with money take matters too easily and are prone to become chronic invalids, self-centered, hypochondriac, "hipped" on themselves, and leading useless lives. They go from one physician to another, or to sanatoriums, read numerous books about their disease and its treatment, and refuse to permit their ailment to be forgotten for a moment. These patients should be induced to avoid medical books and constant examination of their stools, and in every way they should be encouraged to use their faculties and their muscles in a sensible manner, neither too much nor too little. A wise nurse is a

great help in managing the daily life of the female indolent patient.

General hygienic measures, such as cold spinal douches, or alternating cold and hot douches, cold morning baths, cold rubbings up and down the spine, calisthenics, and general massage, with very gentle abdominal massage, are of distinct advantage. A help in the treatment is a change of scene to get away from oversolicitous or nagging friends, or from the wear and tear of home or business. He was a physician of deep perception who replied to the inquiries of the overanxious wife: "Madam, your husband needs a rest. One of you must take a vacation." A visit to one of the spas may furnish rest and recreation away from business and friends and amid pleasant surroundings, with the advantages of hydrotherapy and perhaps the daily ingestion of laxative waters. It is well to remember that nervous people do not sleep or rest well in high, mountainous regions.

The use of tobacco and alcohol, and usually also of coffee, should be prohibited.

Bromids, in doses of from 1 to 2 gm. (15 to 30 grains) once or twice a day are indicated for a short time during the most nervous periods.

In severe cases the patient should be put to bed in charge of a competent nurse. It is bad practice, because of the effect of loneliness, to keep the patient in bed without an attendant.

II. *Treatment of Attacks of Colic.*—This resolves itself into measures (1) to relieve pain and neurotic symptoms, and (2) to promote evacuation of the mucus. These patients feel pain keenly and may writhe in the attacks of colic, and they may even throw themselves out of bed.

1. The pain and neurotic symptoms may be relieved by rest in bed, a large dose of bromid, 2 to 4 gm. ($\frac{1}{2}$ to 1 dram) by mouth, a hypodermic of atropin sulphate, 0.001 gm. ($\frac{1}{65}$ grain), with codein phosphate, 0.03 gm. ($\frac{1}{2}$ grain), and hot applications to the abdomen in the form of a hot water bag, electric pad, poultice or stupe, or a hot bath. On account of habit formation in neurotic subjects, morphin should not ordinarily be employed; but when the recurrence is not frequent and the attack is very severe, morphin may be the best remedy. To relieve the colic the best single drug is atropin; it is of no use for the cure of the colitis.

2. To promote the evacuation of mucus one may use (a) a large dose of castor oil by mouth. This acts by making vigorous peristalsis, which, coming from above the mucus, tends to separate this from above downward and to carry it onward, while at the same time it abolishes the spasmodic obstruction through the peristaltic reflex which produces dilatation below and contraction above. (b) Colon irrigations with tap water or a solution of sodium bicarbonate, a dram to the pint, should be given warm and at low pressure (2 feet). On account of the spasticity of the descending colon it may be impossible to get the liquid up into the colon at first, but persistence and gentleness may result in success. Irritants, such as silver nitrate, should not be employed in the already highly sensitive colon.

Often the combination of castor oil by mouth, codein and atropin hypodermically, and colonic lavage will be followed by relief and sleep. But if the attack is very severe and persistent, and especially if the irrigation is unsuccessful, it is a good plan to put the patient in the knee-chest position and to inject slowly into the

colon from one-half to one pint of warm olive oil or cottonseed oil, to be retained over night or as long as possible, a towel being placed over the anus and a rubber sheet on the bed as protection in case of leakage. This injection is often followed by the passage, a few hours later, of the oil and an abundance of mucus, with disappearance of the colic and no recurrence for a long time, if at all.

57 West Fifty-Eighth Street.

METHODS OF ADMINISTERING SALINE AND OTHER SOLUTIONS TO INFANTS AND CHILDREN*

JOHN AIKMAN, M.D.

ROCHESTER, N. Y

The administration of physiologic sodium chlorid and other solutions to replace fluids lost from the body is a valuable method of carrying certain cases over critical periods. Loss of fluid is more serious in children because of the vomiting that so often accompanies grave illness, and because of the difficulty of giving water by mouth. A relative acidosis may easily result, which in a few hours may greatly increase the gravity of the attack. The reduction of fluid is marked in cases with a history of numerous watery stools, characterized by a rapid loss of weight, hollow eyes, and drawn, pinched expression of the facies. It is my object here to present an outline of the several methods of administering fluids, and to discuss their relative merits.

The method of greatest service is that which will permit the introduction and retention of large amounts of fluid with the greatest ease to the operator and with the least danger and discomfort to the patient.

OUTLINE OF METHODS

1. *Administration of Fluid by Mouth.*—If a child can take and retain sufficient quantities by mouth, it is obvious that no other method is necessary, except for special indications, such as a great loss of blood as the result of hemorrhage.

2. *Rectal Administration.*—The introduction of fluids by rectum, either through enemas, return flow tubes, or by the drip method has been employed for some years with satisfactory results. If the fluid is properly introduced, there is no doubt that considerable absorption takes place. The method is objectionable in children, because of factors not encountered in adults. Unless the child is prostrated, he is apt to be restless, making the retention of the tubes very difficult. It takes considerable time to introduce the necessary amount of fluid, and the child is more or less disturbed thereby, which interferes with his rest. The fluid is apt to be promptly expelled, especially in diarrhea, and there is always some doubt as to the amount which has been absorbed. However, a great variety of fluids may be given by this method, and there is no special danger attached to the procedure.

3. *Hypodermoclysis.*—In children, especially very small children, small amounts of fluid can be quickly given by this method through a Luer syringe and an intravenous needle, or it can be given by gravity. We have often given fluid in several different areas at

the same time. The procedure is very painful and causes restlessness, especially in older children. The amount that can be given is quite limited. While absorption is slow it is sure. It is safest to use physiologic sodium chlorid solution, although I once used a fresh solution of 1 per cent. sodium bicarbonate in two children over 5 years of age who were desperately ill with ileocolitis accompanied by vomiting and very frequent stools. No trouble resulted from repeated injection of fluid, and both children made an uneventful recovery; there is always danger that solutions of sodium bicarbonate will change in character and cause a slough. These cases were seen several years ago; under similar conditions today I would give physiologic sodium chlorid solution by another method that would better answer the indications and cause much less pain.

4. *Intravenous Injection.*—It is not necessary to mention all the fluids that may be given by this method. It is estimated that an amount equal to one sixtieth of the body weight can be introduced through the veins, but much more can be used if the loss of fluid has been extreme. Excretion of the fluid begins at once; if prolonged results are to be obtained, it is often necessary to give repeated infusions. The limited amount that may be given and the difficulty of entering the vein of a small child are the chief objections to this method. With proper technic the method is safe, but it will be acknowledged by any one who has tried it that it is difficult to make an intravenous injection on a small, active infant, especially into the veins at the elbow. In order to overcome this difficulty, other methods have been devised.

(a) *Intracranial Injection:* In an infant with open fontanel this offers the best means of introducing fluid into the blood stream. The method was first studied by Tobler and was introduced in this country only a few years ago by Helmholz. By this technic, the fluid can be injected through the anterior fontanel directly into the superior longitudinal sinus. As the sinus lies from 2 to 5 millimeters from the skin, it can be easily entered if the fontanel is not closed; at the posterior angle of the fontanel the sinus is wider and deeper. The child is held prone on the table by an assistant, while the needle is introduced in the median line just in front of the posterior angle. If the child is quiet, it is very easy to withdraw blood or to introduce fluid; by means of a Luer syringe, rubber tubing and a three-way cock any amount of fluid can be given without removing the syringe. The needle should be short, and the long point usually found on intravenous needles should be filed away. If a glass syringe is attached before introduction of the needle, constant suction may be maintained for the purpose of discerning when the sinus is entered. If negative pressure is not produced, blood will not flow so quickly, while the operator may push the needle through the inferior wall of the sinus, blood flowing only when the needle is withdrawn. This accident may also be avoided if the needle be introduced at an angle, directed backward.

Any solution adapted to intravenous administration can be given in this way; with physiologic sodium chlorid, glucose and other mild solutions there is practically no danger. It is also an excellent method for transfusion of citrated whole blood in infants.

In cases with a closed fontanel, the external jugular vein can often be used successfully.

(b) *Injection in the Femoral Vein:* This method is practiced in this city by several physicians working

* Read before the Rochester Pathological Society, Nov. 19, 1919.

in the venereal clinics and has produced satisfactory results, especially in children. Arsphenamin may be given in this way to very small infants, and although repeated injections have been made on the same child, no serious complications and no cases of thrombosis have been reported.

While it is possible that the method was previously in use by others, it was introduced in this city some years ago by Dr. E. T. Wentworth, who elaborated the following technic, which has since been followed by himself and others:

If the injection is to be made into the right femoral vein, the operator should stand to the right side of the patient, and with the fingers of the left hand palpate the femoral artery as it passes under Poupart's ligament midway between the anterior superior spine of the ilium and the symphysis pubis. The fingers cover the artery while a medium-sized intravenous needle is introduced into the vein just to the left of the finger tips. The needle may be pushed straight in or at an angle directed upward and backward. A syringe is attached to the needle, and constant suction is maintained until a flow of blood shows that the vein has been entered; the syringe can then be removed and the fluid introduced by gravity. If a Luer-Kaufman syringe with a glass offset is used, the solution can be introduced immediately through the syringe itself.

By this method the intravenous administration to children of any age is greatly simplified; if arsphenamin can be given with so little danger, then certainly saline, glucose and other mild solutions can safely be used.

These modifications make the intravenous introduction of fluid comparatively easy; the child is disturbed only little, and a definite amount of solution may be given quickly, although the amount that can be given at one time is limited.

5. Intraperitoneal Injection.—This was first used in St. Bartholomew's Hospital and was introduced in this country by Howland. Blackfan and Maxcy have reported the successful employment of this method.

The instruments needed are a medium-sized intravenous needle, an infusion bottle and rubber tubing. The skin of the abdomen is carefully sterilized with tincture of iodine and alcohol. The skin and subcutaneous tissue are picked up between the thumb and forefinger, and the needle is introduced in an upward direction through the abdominal wall in the midline just below the umbilicus. Care must be taken to avoid piercing a distended bladder, and while there is also danger of puncturing the intestine, no record of this accident has come to my attention. In cases in which necropsy was performed there was found a small hemorrhagic area in the abdominal wall and peritoneum, but no injury of serious importance.

When the needle has passed into the peritoneal cavity, the solution is introduced by gravity. At first I used a Luer syringe; but later I found it much easier to employ the infusion bottle. I have always used warm physiologic sodium chlorid solution, of which from 100 to 250 c.c., in older children from 300 to 400 c.c., may be given every twelve to twenty-four hours, in fact, if no untoward signs develop, fluid may be given until the abdomen becomes slightly distended. However, the injection must be made slowly in all cases, and overdistention of the abdomen must be avoided. After the operation, the abdomen is covered with a sterile dressing. It has been shown by the phenolsulphonephthalein test and by necropsy that from 40 to 60 per cent. of the fluid is absorbed in one hour. The remaining solution acts as a reserve, the gradual absorption of which explains the more protracted improvement as compared to results obtained by other methods.

We had used the other methods at the Infants Summer Hospital, but this year we chose the intraperitoneal route for children who had lost large amounts

of fluid by vomiting and diarrhea. It proved superior to all other methods because of the ease and rapidity of administration, the volume of fluid that can be given at one time, and the certainty that no fluid will be lost. The results from this treatment are remarkable; and although it has been used only in the most serious cases, the results have been most satisfactory.

The following case is reported to show that repeated injections may be made without injury to the intestine:

Rita C., aged 1 year, weighing 11¼ pounds, was admitted to the Infants Summer Hospital, August 18, with a history of vomiting and diarrhea for the previous ten days. She was born at eight months, the delivery being instrumental; the birth weight was 7¾ pounds. The child had been breast fed until the present illness when she was put on condensed milk.

On admission the child had a wasted appearance and was semiconscious. The physical examination revealed slight stomatitis, coldness of the extremities, weakness, and great loss of water from the tissues; the temperature was 101.6 F.; the pulse, 148. Stimulating treatment was at once instituted. On the first day she retained one-half ounce of rice water, vomiting all other fluids; on the second day seven stools were passed and very little fluid was retained. The feces contained blood and mucus. There was no improvement in the bowel condition on the third day, and the loss of fluid was producing great prostration. Since no results followed administration of fluid by rectum or the use of stimulants hypodermically, 100 c.c. of physiologic sodium chlorid solution were injected intraperitoneally, with favorable results. It was not until the thirty-fifth day of the disease that the child passed normal stools; even then the bowel condition was far from satisfactory. During this time there had been an average of seven mucous and bloody stools daily; in fact, many of the movements were thick mucus stained with blood. For days in succession she would take less than 1 ounce at a feeding, and vomited a great part of all fluid ingested. She failed to such an extent that it did not seem possible that she could live another day. The temperature ranged from 99 to 102.6, most of the time above 101 F. In all, ten injections of saline solution were made through the abdominal wall, ranging in quantity from 100 to 250 c.c., six being over 200 c.c.

The fluid carried the child over the critical days until the bowel condition began to improve. We had never before seen a child recover after so long and severe an illness. The recovery is evidence of the value of this method of treatment and of the safety with which repeated injections may be made through the abdominal wall.

SUMMARY

1. The administration of saline and other solutions is frequently of great value in carrying children over critical periods of illness, especially in diarrheas with marked loss of fluid.

2. When it is impossible to give fluid by mouth or rectum, intravenous or intra-abdominal injections are indicated. If puncture of the superficial veins proves difficult, the superior longitudinal sinus or the femoral vein may be selected.

184 Alexander Street.

Sanitation in Universities.—Environment plays an important rôle in disease causation and prevention. This is especially true of communicable diseases. It is most important to know and to regulate, so far as possible, the conditions under which students live, the food and water ingested, the air breathed, etc. The division of sanitation is therefore no minor part of a university health service, and ample provisions must be made for this branch of the work. The environment of the student, both on and off the campus, must be regulated and made as sanitary as possible.—John Sundwall, *Pub. Health Rep.*, Nov. 7, 1919.

Clinical Notes, Suggestions, and New Instruments

A NEW METAL TIP POSSESSING OBVIOUS ADVANTAGES FOR USE ON GASTRIC OR DUODENAL TUBES

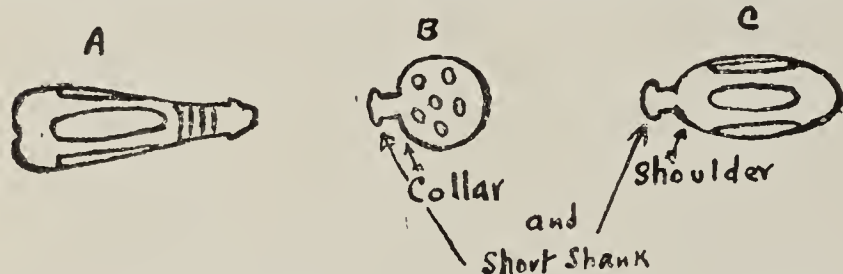
B. B. VINCENT LYON, A.B., M.D., PHILADELPHIA

Chief of Clinic, Gastro-Enterological Department, Jefferson Hospital;
Attending Physician, Methodist Episcopal Hospital

It is with reluctance that I am calling attention to a new tip for duodenal tubes because there are many excellent ones already on the market; but I feel sure that it will interest those members of the profession who are doing gastro-duodenal work because it possesses certain definite advantages over any other type with which I am familiar. Perhaps I might better say that it does away with certain disadvantages common to nearly all others.

All duodenal tubes are swallowed rather easily by most patients, but many patients encounter temporary difficulty when the tube is withdrawn from the duodenal zone to the stomach, and more especially difficulty when it passes the glottis on its upward journey, at which time cooperative swallowing control is required on the part of the patient. This applies particularly to all tips of the olive or ball type on account of the shoulder or collar on the proximal side of the tip. They go down easily, but they are much more likely to "hang" at the glottis coming up.

To obviate this difficulty I have been trying out, during the past year, a tip quite similar to that designed by Rehfuß,



Three styles of tip for duodenal tubes: A, new style tip with no shoulder or collar and with a long and serrated shank; B, ball type tip with objectionable collar and short shank, and C, olive type tip with objectionable collar and short shank.

but of elongated pear shape instead of olive shape. The tip is ground down to a tapering proximal end of the same caliber as that of the rubber tubing. Therefore, in withdrawing this tip, all obstruction at the glottis is done away with. All patients, especially those well "tube broken" to many varieties of tips, are unanimously in favor of this one; and after all it is the patient who can furnish the best endorsement in such a matter.

The second advantage of this tip lies in the fact that its shank is slightly elongated and slightly serrated so that the rubber tubing, even when old, will stick closely to this tip under a stout pull without the necessity of its being tied and knotted with a silk thread. The latter point seems to me a very objectionable feature; for these knots instead of getting softer after boiling become distinctly harder, and I feel sure in many cases they traumatize the gastric or duodenal mucosa, especially in the latter zone where the tube may be left in situ for many days for feeding purposes, because the duodenal lumen is comparatively small and the peristaltic action vigorous.

The only duodenal tube with which I am familiar that does not possess the disadvantages I have just stated is the one designed by Jutte. This tube, I believe, is the easiest to pass to the stomach or duodenum, and I still continue to use it very frequently for such treatment as transduodenal lavage; but I do not like it for duodenal feeding because the perforations at the tip of the rubber tubing are so small that they frequently become obstinately plugged with the feeding mixtures. And for the same reason, I have discarded the use of this tube in diagnosis on account of the difficulty of aspirating many catarrhal residuums: and especially have I had difficulty in draining the biliary tract on account of the heavy viscosity of many biles.

Another point worth mentioning in gastroduodenal work is that the tube should be fitted with a glass window situated from about 8 to 12 inches from the proximal end, instead of with the metal connections in common use, so that the aspirated material may be inspected before it reaches the aspirating syringe, vacuum bottle or collecting vessel. By this means, material of special interest may be segregated for special study. This is of paramount importance in gall-bladder and gallduct diagnosis.¹ A medicine dropper answers very well if the capillary tip is of the same caliber as that of the rubber tubing, or larger; or special small connecting glass tubes may be obtained from any physicians' supply house.

These tips may be obtained through the Physicians' Supply Company, Sixteenth and Sansom streets, Philadelphia.

1828 Pine Street.

CAUSTIC BURN OF THE EYE FROM INDELIBLE INK OR LEAD *

WILLIAM H. ELMER, A.B., M.D., ROCKFORD, ILL.

Though injuries to the eye from the introduction of indelible ink or indelible lead are not very rare, the recorded cases have not taken on the aspect of a caustic burn. Therefore this case is presented:

REPORT OF CASE

Oct. 13, 1919, Miss F. L., aged 20, waitress, complained of pain in her left eye, and said that some ink had entered it twenty-four hours before. She was unable to state how this had happened; she realized that something was wrong only by the symptoms she had suffered, and knew it was ink by the appearance of the eye.

Examination revealed R. V. 20/20, L. V. 20/30, tension 0, both eyes. The left lower lid was slightly swollen, and the palpebral and bulbar conjunctiva of the lower fornix was congested, chemotic, and stained an intense purple, the color of the common indelible pencil lead. The stain increased in intensity downward, and among the tarsal folds was a clean cut, almost black ulcer, as if a fragment of the lead had rested there and exerted its effect strongly at one point. With a probe, it was ascertained that the ulcer was quite deep, almost penetrating to the infra-orbital margin. Almost the entire conjunctival surface beneath the lower lid stained with fluorescein. The upper lid and underlying conjunctiva were negative. There was slight staining of the lower margin of the cornea; the iris was clear, and the pupil of moderate size, but it responded rather sluggishly to light. Examination of the media and fundus detected nothing further.

The eye was irrigated thoroughly with sterile water till the waste showed no color, and then as much as possible of some black granular matter on the ulcer was removed with wet applicators. Atropin, 1 per cent., and argyrol, 20 per cent., were used; and after the conjunctival sac had been filled with sterile petrolatum, a patch was applied and the patient was sent to the hospital for further attention. Petrolatum was used in the eye every two hours for the next day, at the end of which period, iritis was found to be setting in. Atropin was started immediately and used every four hours next day, with the petrolatum continued at two hour intervals. On the following day the pupil was well dilated; and the petrolatum having been discontinued for a short time, fluorescein showed epithelization to be taking place slowly; but the patient was complaining of pain over the left cheek bone, and there was intense tenderness over the left infra-orbital margin, and some swelling and redness. Nasal examination disclosed no indications of maxillary sinusitis, and further investigation by means of the roentgen ray was refused. Dry heat to the painful region was ordered, and atropin, argyrol and petrolatum were used three times daily. Slight adhesions that were forming were broken up with a

1. Lyon, B. B. V.: Diagnosis and Treatment of Diseases of the Gall-bladder and Biliary Ducts: Preliminary Report on a New Method, J. A. M. A. 73:980 (Sept. 27) 1919.

* From the "Johnson Clinic."

probe. On the third day epithelization was complete except for the ulcer and a slight area around it, the pupil remained dilated, congestion was subsiding, and the pain and swelling over the cheek had improved. On the fifth day, there was no staining with fluorescein, congestion was slight, the purple stain was disappearing, and the complicating symptoms had vanished, whereupon the patient was discharged, to report at the office next day. The appearance at this visit was almost normal, the dilated pupil, slight congestion, and purple discoloration alone remaining, so she was ordered to use a boric acid eye-wash and argyrol, 20 per cent., once daily, and to report again a week later. When last seen, October 25, the eye appeared quite normal with 20/20 vision in each eye. A small scar was visible at the site of the ulcer, but there was no deformity from cicatricial contraction.

COMMENT

How this caustic substance could have entered the eye was not ascertained. Cosmetics for eyebrow and lid margin use might have been the source (and the patient was strangely reticent about the whole affair), but such accidents have been known to occur from pencil lead, though the effects have not been as violent as in this case. A case is quoted in a personal communication to me as having occurred from this source, the same purple stain having resulted, but with no ill effects and with complete recovery in twenty-four hours after use of 1:3,000 mercuric chlorid ointment.

The complicating pain and tenderness over the infra-orbital margin seem to me to have been due to a moderately severe periostitis from penetration of the irritant through the tissues.

DEMONSTRATION OF TUBERCLE BACILLI IN THE SPINAL CORD OF PATIENT SUFFERING FROM TUBERCULOUS MENINGITIS *

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REPORT OF CASE

History.—J. F. K., a private, aged 19, admitted to the medical ward of U. S. Army Debarkation Hospital No. 5, Feb. 2, 1919, stated that while on the transport that brought him back to this country from overseas he had an acute attack of bronchitis, which was associated with severe headache, and pains in the chest, back and bones. A few days prior to his admission to the hospital he had suffered considerably from gastric distress.

Physical Examination.—The patient appeared very restless and nervous, and seemed excitable. The head, neck and scalp were negative. The pupils were equal and reacted to light and accommodation. There was no increased intra-ocular tension and no rigidity of the neck.

Examination of the lungs disclosed a small area of impaired resonance at the base of the lower lobe of the left lung, posteriorly. At the end of inspiration, a few fine subcrepitant râles were heard. There was a small area of bronchophony. Examination of the heart was negative.

The clinical diagnosis made at this time was a left bronchopneumonia following influenza.

Clinical Course.—From the day of admission until February 4, there was no change in the patient's condition. February 4, he complained of slight pains in the back of the head.

Urinalysis made, February 3, revealed a specific gravity of 1.030, some albumin, but no sugar or casts. A blood examination made on the same day revealed 12,200 leukocytes.

February 5, the patient still complained of headache, and examination disclosed the presence of a slight amount of rigidity of the neck. As a result of this examination, a tentative diagnosis of tuberculous meningitis was made, and a

lumbar puncture was immediately performed. The fluid withdrawn was slightly turbid. After the lumbar puncture, the headache was relieved.

Examination of the cerebrospinal fluid, February 5, gave a cell count of 222. Smears failed to show the presence of organisms, and the culture remained sterile. The Wassermann reaction of the spinal fluid was negative, and no tubercle bacilli were found in the smears. Examination of the blood disclosed 9,200 leukocytes.

February 7, a second lumbar puncture was performed. This time the fluid spurted from the needle and appeared to be under pressure. Thirty c.c. of fluid were withdrawn. Smears failed to demonstrate the presence of organisms, and the cultures remained sterile. No tubercle bacilli were found, and the Wassermann reaction was negative. No sugar was found in the fluid. Differential leukocyte count revealed 75 per cent. lymphocytes and 25 per cent. polymorphonuclears.

By February 8, the muscular rigidity had very materially increased, and Kernig's sign was present. February 9, the patient developed complete retention of urine, so that he was unable to void and had to be catheterized.

Urinalysis, February 9, demonstrated the presence of albumin in moderate amounts, and a few pus cells and a few casts. The urine showed a pure culture of *B. coli*.

February 10, the patient was very cyanotic and was confused a great deal, mentally. A lumbar puncture was performed, and 100 c.c. of fluid were removed. The cultures remained sterile, and no organisms were found in the smears. No tubercle bacilli were found, and the Wassermann reaction was negative.

February 11, the patient died.

Necropsy Findings.—Necropsy was performed two hours after death by First Lieut. Paul H. Christian.

When the brain was removed, a fair amount of clear straw-colored fluid escaped from beneath the meninges. A few fresh adhesions were found at the base of the brain; otherwise its appearance was normal.

Examination of the spinal cord revealed no adhesions between the cord and bony structures. When the meninges were removed, however, a few slight adhesions were observed between the cord, covering a space about 2 cm. in length, beginning at the lumbar enlargement and extending upward. In this area were also found slight subdural hemorrhages, and petechial hemorrhages were found in the cord substance.

The right lung appeared normal. The left lung showed evidences of resolution in one or two areas. In the upper lobe, posteriorly and near the base, there was a spot about 4 cm. in diameter that was undergoing resolution.

The heart was contracted, and there was no evidence of any inflammatory condition. The valves were apparently normal.

The liver, spleen, kidneys and pancreas presented no unusual pathologic condition. The bladder was dilated, and contained about 800 c.c. of fluid.

Postmortem diagnosis was bronchopneumonia undergoing resolution, and a tuberculous meningitis.

Microscopic Examination.—The section from the base of the brain showed great round cell infiltration of the pia, and this infiltration was especially marked about the blood vessels. There were also in the pia areas of granular necrosis, with much nuclear debris: these areas were occasionally surrounded by typical epithelioid cells. No giant cells were seen. Perivascular round cell infiltration was also seen in the cortex.

In the section from the lumbar portion of the cord there were dense, small round cell infiltration of the meninges, and large areas of caseation, surrounded by epithelioid cells. In the adventitia of many of the blood vessels in the pia, there was a definite formation of tuberculous tissue.

In the sections stained for acid fast bacilli, there were found a few typical acid fast bacilli in the sections from the cord. No bacilli were demonstrated in the sections from the brain.

The microscopic diagnosis was tuberculous meningitis.
122 South Michigan Avenue.

* From the Medical Wards of U. S. Army Debarkation Hospital No. 5, Grand Central Palace, New York.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(Continued from page 177)

CALOMEL CATHARSIS

Mild mercurous chlorid is the typical cholagogue cathartic, a term that might be applied to those agents that have a tendency to produce particularly dark or bile-colored bowel evacuations. That certain cathartics, notably calomel, have such action, is a well established clinical observation. Trouble arose when this foundation of fact was left behind and fancy was permitted to assign to these agents a special action on the liver. Nothing seemed more logical than this supposition, though, it appears, nothing is farther from the truth.

It took much investigation and controversy to establish the fact that only a small number of substances increase the secretion of bile and that this does not include any one of the cathartics. The cause of the dark color of the stools following the use of many cathartics is evidently a mechanical one, a more rapid sweeping of the contents out of the intestine, so that there is less time for reabsorption of bile and change in the color of bile pigment. In the case of calomel, to this must be added the fact that grayish-green stools occur even when no bile enters the intestine, owing to the formation of colored mercury compounds, such as sulphid and oxid. A third factor, which also might have something to do with the bile colored purging produced by calomel, is its preservative effect on bile pigment, demonstrable in the test tube, due to inhibition of putrefactive processes responsible for conversion of bile pigment into fecal pigment.

MODE OF ACTION

Calomel, being insoluble in the mouth and the stomach, passes through without affecting them in transit. Indeed, one of the chief advantages—as well as disadvantages—of calomel is its inoffensiveness to palate and stomach. It is one of the few purgatives that can be given in spite of nausea and vomiting. At times it stays in the stomach when nothing else will. On the other hand, the ease with which this subtle poison can be given invites its abuse, especially in children.

As soon as the calomel enters the intestine, it is attacked by the alkaline pancreatic and intestinal juices, which decompose it into mercury and yellow mercuric oxid. The latter dissolves slowly and incompletely in the alkaline intestinal fluid. The small quantity of mercuric ions thus liberated excites peristalsis and, at the same time, inhibits absorption of fluid. These effects are so much greater in the small intestine than in the colon that calomel is unreliable as a cathartic. The abnormal amount of fluid in the large intestine may be completely reabsorbed, giving rise to

diuresis instead of catharsis, unless this reabsorption is inhibited by a saline purgative. Hence, administration of a saline cathartic in connection with calomel catharsis has come to be an established custom. As calomel acts slowly, requiring from ten to twelve hours, while the salines produce their effect in about two hours, the two agents are usually given with an interval of eight or ten hours between them: generally, the calomel at night, and the saline in the morning.

Unfortunately for its use as a cathartic, some of the calomel becomes absorbed, giving rise to the danger of mercurial poisoning, which is much more influenced by the length of time the mercury stays in the bowel than by the size of the dose: for, when the calomel is promptly swept out of the intestine, it is safe in almost any dose; while a small amount may lead to poisoning, if, by reason of intestinal obstruction or other delay in evacuation, the calomel becomes absorbed to any great extent. Another factor that influences absorption is the presence of solvents. Particularly objectionable is iodid, which, even when taken separately or previously, changes calomel into mercury (metallic) and mercuric iodid and readily dissolves the latter. This change results in a great increase in local irritation—wherever the calomel comes in contact with the iodid—and in greater absorption of mercury. Bromids and alkalis are less obnoxious in conjunction with calomel. Alkali, in the form of sodium bicarbonate, is frequently combined with calomel on the supposition that this increases the efficacy of the latter. The increase in solubility of calomel under the influence of chlorid or hydrochloric acid, under the conditions that prevail in the system, is so slight as to be of no toxicologic importance. An investigation by the A. M. A. Chemical Laboratory¹ showed that the combination of calomel with antipyrin becomes dangerous in the presence of sodium bicarbonate, as, in such a case, from one sixth to one fourth of the calomel may become converted into a soluble mercury salt. The idea that acid drinks, such as lemonade, should be avoided in conjunction with calomel has been shown to be erroneous.

CALOMEL POISONING

It is not necessary, in this place, to draw the picture of calomel poisoning. Suffice it to say that this condition affects most especially the two ends of the alimentary tract: the mouth and the colon, and that the kidney is next in order. In the mouth, it produces ulcerative stomatitis, which somehow is connected with the presence of teeth, especially carious teeth. Toothless infants do not develop it. The necrosis starts at the dental margin of the gums and where the teeth are in relation with lips, cheek and tongue. The fact that mercurial stomatitis is characterized by a pathologic condition similar to that of ulcerative stomatitis and Vincent's angina should render calomel contraindicated in the presence of these conditions. If a patient has ever been salivated, calomel should not be used again, for he is liable to show exceptional susceptibility. As mercurial colitis is characterized by a symptomatology and even a pathology much like that of dysentery, one should be cautious, when using calomel in dysentery or enterocolitis, not to confound the symptoms produced by calomel with those of the disease. In these

* This is the fifteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

1. The Incompatibility of Antipyrin, Calomel and Sodium Bicarbonate, J. A. M. A. 56: 287 (Jan. 28) 1911.

conditions, its continued administration should certainly be avoided. As mercury has a great affinity for the kidney, calomel should not be employed, excepting with the utmost precautions, as a cathartic in kidney disease, unless it be in a syphilitic. In certain cases of nephritis, even a small dose of calomel may precipitate uremia.

As calomel is so unreliable a cathartic that it needs be associated with other purgatives to secure its evacuation, as it is liable to act as a poison, and as we have an abundance of satisfactory nontoxic cathartics, the use of calomel as a mere purge is unjustifiable. Of course, in a patient suffering from syphilis it might be the cathartic of choice. It might also be of special value as a purge in the presence of vomiting. Calomel should never be given without other indication than simple constipation. It is absolutely unsuitable for self-medication by the laity.

The main reason for its popular use as a purge is its alleged action as an intestinal antiseptic. That it is not an intestinal disinfectant is generally admitted, nor has its action as an intestinal antiseptic been definitely proved.

INDICATIONS

As calomel is so inoffensive to the stomach, it is the purgative *par excellence* in the presence of nausea or vomiting, provided one is certain that intestinal obstruction does not exist.

Calomel finds its classical employment in "biliousness," a syndrome that follows indiscretions in diet, whether it be excessive indulgence in food by a healthy person or mere relative excess in an invalid. This condition is characterized by yellowish coated tongue, fetid breath, anorexia, headache, lassitude, subicteric tinge of skin and conjunctivae, and highly colored, scanty urine. But the chief indication for it is believed to be the presence of clay-colored stools, whether there be constipation or diarrhea; and, for reasons given above, it will certainly change the color. Whatever the exact pathology of the condition, free purgation is usually followed almost immediately by amelioration of symptoms; and calomel-saline purgation is believed to be more efficient in this condition than the use of other evacuants. Indeed, its very efficiency is a danger: for it encourages the patient to continue in his overeating, knowing that he can escape the punishment or greatly mitigate it by his dose of calomel. This abuse of the digestive and eliminative organs cannot but lead in time to chronic degenerative changes, insidious in onset but incurable when present. How much better for an individual inclined to "biliousness" to limit his food intake to his digestive capacity than to gorge himself with food only to purge himself of the excess after it has commenced to harm his system. In view of the remarkably slight intestinal irritation produced by a therapeutic dose, calomel is often employed in summer diarrhea and in dysentery. In these conditions, castor oil is preferable, unless coexisting nausea or vomiting renders the administration of the oil impossible. For reasons previously given, it should be used merely as an initial course. Prolonged administration might increase the damage.

Calomel is employed, by many physicians in a routine manner, as the initial purge in acute febrile conditions of all kinds. Experience in such cases, both with and without calomel, does not demonstrate any difference

in favor of those patients that had received calomel. One sees, on the other hand, every now and then—fortunately but very rarely—cases of mercurial stomatitis as the result of this practice, most commonly perhaps among patients who have had a succession of different medical advisers and a succession of "initial" doses of calomel. Hence, when one is not the first to be called on the case, it is best to omit the dose of calomel; and it would probably be just as well to omit this dose on the principle of *nil nocere* in other cases likewise.

ADMINISTRATION

So called "broken dosage" is, at present, the method of choice in the giving of calomel. The advantage claimed for it is a greater effect from a total small dose than could otherwise be obtained, each instalment coming in contact with fresh portions of solvent. At the same time, there is less danger of poisoning if the total dose is retained and absorbed, than if a dose of 0.60 gm. (10 grains) were given. Whether the total dose of from 0.06 to 0.12 gm. (1 to 2 grains) is given in portions of 0.006 gm. ($\frac{1}{10}$ grain), 0.010 gm. ($\frac{1}{10}$ grain) or 0.030 gm. ($\frac{1}{2}$ grain) at intervals of fifteen minutes, thirty minutes or an hour is chiefly a matter of convenience; though, it is claimed that, in the presence of vomiting, the smaller dosage and longer intervals serve best. The rule is sometimes given that the dose of calomel for children should be once or twice as many centigrams ($\frac{1}{16}$ grain) as the age of the child in years. In practice, however, but little difference usually is made between the dose for the child and the dose for the adult; for, in either case, only that portion of the dose becomes active that is dissolved; and this depends on the amount of alkaline digestive secretion, which is proportionate to the size of the individual. Nevertheless, some such rule as that given prevents the administration of large excess; provided, of course, the adult dose is not exceeded, which will be reached according to the rule at the age of 3 or 6.

Owing to the smallness of the dose and the heaviness of the calomel, a diluent is necessary in prescriptions for calomel powders. Sugar, sugar of milk, or sodium bicarbonate are the usual diluents.

Rx	Mild mercurous chlorid	Gm.
	Sugar of milk	0|06
		0|24
	Mix and divide into four powders.	
	Label: One every half hour.	

For children, sugar is the preferable diluent. However, the most elegant way of prescribing calomel is in the form of sweet tablets, each containing 0.006 gm. ($\frac{1}{10}$ grain) and up, which are now marketed by nearly all manufacturing pharmacists.

(To be continued)

Group Medicine.—The experience of military service will have rendered thousands of physicians familiar with methods of organization and accustomed them not only to the treatment of individual patients, but to coordination of work with other doctors. The return of these physicians to private life may well be occasion for stimulating the organization of medicine and for helping the institutions in which group medicine is practiced. Members of the medical profession, men who are concerned with public health work, or with the administration of hospitals and dispensaries, should not permit the leadership in developing medical organization to pass out of their hands. Group medicine is a necessary progressive step in the practice of medicine for the public service.—M. M. Davis, *Am. J. Pub. Health* 9:362, 1919.

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SATURDAY, JANUARY 24, 1920

SPIROCHETE TRANSMISSION IN RAT-BITE FEVER

The demonstration that dangerous spirochetes may be present in rats and become the etiologic agent in the so-called rat-bite fever of man and animals is only a few years old.¹ Meanwhile the widespread distribution of the micro-organism in various parts of the world, including cities of the United States, has been ascertained by bacteriologic examination of rats caught at random.² The current belief is that the spirochetes find their way into the excretory ducts of the salivary glands and the tubules of the kidneys, and that the infection in true rat-bite fever comes through the saliva of the biting rodent. This assumption has been assailed of late, however, by a group of investigators at the Kitasato Institute for Infectious Diseases in Tokyo.³ According to them, in the infected wild rat, albino rat and guinea-pig, the spirochetes of rat-bite fever, in the early stages of the infection, are detected principally in the blood; but after two weeks a large number appear in the connective tissues, and as time goes on this number is gradually increased. That is, this spirochete is always distributed numerously in the subcutaneous and submucous tissues of the eyelids, lips, bridge of the nose, and tongue, and is especially abundant in the reticular connective tissues of the vascular sinus surrounding the follicle of the tactile hair of the upper eyelids and lips. It is also usually, if not always, found abundantly in the capsules of the salivary and lymph glands, in the heart wall, in the adventitia of the aorta and large arteries within the visceral organs, and sometimes in the endocardium of the heart. It can also be detected in the spleen, the liver, the suprarenal glands, the kidneys, the parenchyma of the salivary and lymph glands, etc. The Japanese investigators assert that the spirochete is neither excreted through

the saliva from the salivary glands nor mixed into the saliva through the normal mucous membrane of the mouth cavity from its submucous source. Furthermore, the excretion of the organism in the urine was found to be comparatively rare. The spirochete has never been detected in the intestinal contents of wild rats and guinea-pigs or in the bile of guinea-pigs.

How, then, are we to suppose that the spirochete finds its way into the organism that it attacks? The more recent experiments do not favor the view that this spirochetosis can spread by mere contact, or that its distribution is facilitated by such skin parasites as fleas and lice. Attempts to produce infection by instilling contaminated blood into the eyes of susceptible animals were unsuccessful in securing transmission through the intact conjunctiva; and the undamaged mucous lining of the alimentary tract also appears to be a barrier to the spirochetes introduced by mouth. The few positive infections may be attributed equally well to abrasions of the mucous membranes which permitted an invasion of the tissues.

To explain the exit of the spirochete from its source in the host, if it does not pass out through the saliva, Kusama, Kobayashi and Kasai³ assert that the infected wild rat, and also the infected guinea-pig, usually become very irritable and furiously bite any objects coming in their way, often suffering an abrasion and even bleeding in the lips or gums. The spirochete is then given an opportunity to escape from the submucous tissue, or the circulating blood, through the defective point in the mouth. It becomes possible, therefore, that the spirochete may be thus transferred by the bite of an infected rat to the body of a healthy rat or even a human being.

LOW BAROMETRIC PRESSURE AND CHANGES IN CIRCULATION

Mountain climbing and likewise the more easy ascents to mountain heights by the modern alpine railways are not infrequently attended with symptoms of malaise. Experiences of this sort long ago emphasized the fact that high altitudes or low barometric pressure may interfere with the normal workings of the human machine. There was a time not long since when the physiology of altitude had little more than academic interest. The modern conquest of the air by man has brought about a new attitude. As the physiologic experts in military aeronautics have lately pointed out,¹ the purely scientific aspects of life under conditions of low barometric pressure are themselves deserving of careful investigation. The fact that altitude plays a part in therapeutics and forms a feature of climatology as applied by medicine, furnishes another reason why the subject should be placed on a rational basis, while the coming into prominence of aviation, which requires

1. Futaki, Takaki, Taniguchi and Osumi: *J. Exper. Med.* **23**: 249 (Feb.) 1916. Ishiware, Ohtawara and Tamura: *Ibid.* **25**: 45 (Jan.) 1917.

2. The Cause of Rat-Bite Fever, editorial, *J. A. M. A.* **65**: 1285 (Oct. 9) 1915; Further Observations on the Cause of Rat-Bite Fever, *ibid.* **66**: 894 (March 18) 1916; Spirochetes and Rat-Bite Fever, *ibid.* **68**: 1482 (May 19) 1917; Experimental Rat-Bite Fever, *ibid.* **69**: 125 (July 14) 1917.

3. Kusama, S.; Kobayashi, R., and Kasai, K.: The Rat-Bite Fever Spirochaete with a Comparative Study of Human, Wild Rat and Field Vole Strains, *Kitasato Arch. Exper. Med.* **3**: 131 (Oct.) 1919.

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, 1918, p. 7.

a man to ascend into the air as the bird, frequently to moderate and sometimes to great altitudes, furnishes a third reason why we should know what constitutes fitness for life in rarefied air.

Certain effects of transferring man to high altitudes are already well appreciated. The partial pressure of oxygen decreases as the barometer falls in ascending into the atmosphere. Consequently the eminent French physiologist Paul Bert predicted more than forty years ago that the blood of persons and animals living at high altitudes would be found to have a greater oxygen-carrying capacity than that of corresponding individuals living at lower levels. This prediction has frequently been verified. Thus, the red corpuscles charged with the function of binding and transporting oxygen vary in numbers at sea level between 4.5 and 5.4 millions per cubic millimeter; at Colorado Springs, altitude 6,000 feet, between 5.5 and 6.3 millions; and on Pike's Peak, altitude 14,110 feet, between 6 and 8.2 millions. The percentage of hemoglobin, the compound concerned in the oxygen transport, has simultaneously been shown to increase at Colorado Springs at least 10 per cent. on the average above the content at sea level; while at Pike's Peak an increment of 44 per cent. has frequently been noted. The percentage of oxygen capacity in the blood at sea level varies between 17 and 18.7; at Colorado Springs, 20 and 21.7; and on Pike's Peak, approximately 27.4. In general, for every hundred mm. fall in atmospheric pressure there is an average rise of about 10 per cent. in hemoglobin, and this rise is approximately the same for women and men.

The conventional records have been obtained from observations made after hours or even days of exposure to the effects of high altitude and lowered partial pressures of oxygen in the atmosphere. The aviator makes his transitions with incomparably greater speed. Mountain ascents, even when made passively by railway or motor, are slow—8,000 feet in an hour and a half or longer—as compared with altitude flights in an aeroplane. Can the aviator, who ascends with much greater speed and has already reached heights beyond that of the highest mountains on the globe, benefit from any compensatory physiologic reactions such as have been described? To this question the medical research laboratory of the air service at Mineola, N. Y., has contributed some answer.² The blood changes were studied in men subjected to lowered barometric pressures or to low oxygen, 10 per cent., for intervals not exceeding two hours. The changes in a pressure chamber were made at a rate that would be comparable to ascending in the air at the rate of 1,000 feet a minute. The altitudes employed were 425, 395 and 380 mm. of mercury, which are the pressures ordinarily encountered at 15,000, 17,000 and 18,000 feet, respectively. The blood changes were definite in thirty-five trials, or

78 per cent., of all examinations made by Gregg, Lutz and Schneider at Mineola. The majority of the men required between forty and sixty minutes for the increase to become definite; 13 per cent. showed a well defined increase within twenty-six minutes. In the experiments with 10 per cent. oxygen, 57 per cent. gave the increase in hemoglobin. In fifteen cases in which the erythrocytes and hemoglobin were determined, corresponding changes occurred in both; 66 per cent. were positive. The erythrocyte increase ranged between 3.8 and 20 per cent.; the hemoglobin, between 3.2 and 9.8 per cent. These results are not due to barometric pressure per se: they represent the response to lowered oxygen pressure in the environment, however this may happen to arise.

Obviously, under conditions of oxygen shortage, tissues may be better supplied with this element not only by an increase in corpuscles which carry it but likewise by a more efficient circulation. A more rapid blood flow also represents a form of compensatory reaction to the oxygen deficiencies at high altitudes; and it has been observed to occur quite independently of any added physical exertion or other extraneous influences, such as fatigue or cold. In general, it may be said that the heart works at an increased rate in all postures at the high altitude. The amount of increase in the pulse rate varies in different persons. Some men will show at the high altitude, such as 14,000 feet, an acceleration of only a few beats over the low altitude rate, while others show an increase of 10 or more beats per minute. Lutz and Schneider,³ likewise working at the laboratory of the air service at Mineola, have found that the heart rate responds to slight changes in oxygen tension. The acceleration in the majority of men examined began between oxygen partial pressures of 113 and 128 mm., corresponding to barometric pressures of 542 and 610 mm. In at least 25 per cent. of all cases, the first response occurred at oxygen partial pressures of about 137 mm. or less, corresponding to a barometric pressure of 656 mm. (4,000 feet). The initial response occurred at about the same oxygen tension each time a person was exposed to a decreasing oxygen tension by the several methods used. The systolic blood pressure maintained its normal level in the majority of cases.

It is not easy to understand how compensatory responses in the nature of rapid increments in the number of red corpuscles, whereby the unit volume of blood can carry more oxygen than normally at a given oxygen pressure, occur in such short periods of time as those involved in an hour's flight. It can scarcely be supposed that the cells are created anew thus rapidly in the organism. There is little evidence that the increased number of corpuscles is due solely to an actual concentration of the blood by loss of water. For the present it seems more likely, as Schneider and

2. Gregg, H. W.; Lutz, B. R., and Schneider, E. C.: The Changes in the Content of Hemoglobin and Erythrocytes of the Blood in Man During Short Exposures to Low Oxygen, *Am. J. Physiol.* **50**: 216 (Nov.) 1919.

3. Lutz, B. R., and Schneider, E. C.: Circulatory Responses to Low Oxygen Tension, *Am. J. Physiol.* **50**: 228 (Nov.) 1919.

Havens⁴ have suggested, that the "rapid increase is brought about in part by throwing into the systemic circulation a large number of red corpuscles that under ordinary circumstances at low altitudes are sidetracked and inactive, and in part by a concentration resulting from a loss of fluid in the blood."

THE SAFEGUARD AGAINST BACTERIA IN THE UPPER AIR PASSAGES

It has been assumed, until quite recently, that healthy and intact skin and mucous membranes are practically impenetrable to bacteria that may lodge on them. The mechanical protection offered by the surface covering of the deeper tissues and vessels within them is, however, known to be lost when bruises or contusions destroy the outer layers or otherwise alter their normal continuity. Zinsser⁵ has pointed out in this connection that the defense of the intact mucous membranes is by no means unassailable. While many kinds of organisms can be implanted on mucous membranes with impunity, a number of others may cause local inflammations thereon and may, furthermore, pass through them into the deeper tissues and thence into the general circulation. In illustration of this Zinsser states that gonorrhea is ordinarily a disease of implantation on a mucous membrane, and that diphtheria bacilli and streptococci give rise to a localized disease on the pharyngeal and nasal mucosae, the latter germs not infrequently penetrating from the initial point of lodgment on the mucosa into the deeper tissues and the blood stream, causing septicemia or bacteremia. Perhaps local physiologic or functional injury, such as congestion or catarrhal inflammation without demonstrable lesions, is sufficient to permit penetration by micro-organisms.

Latterly the membranes of the pharynx and adjoining regions of the nose and throat have become centers of great interest in the investigation of avenues of entrance for certain bacteria. The upper respiratory tract has been considered not only as a portal of entry but also as a site of persistence for the virus of some of the most serious diseases. Before the real significance and rôle of the mucous membranes there involved can be adequately comprehended, it will be necessary to learn much more than is now known regarding the factors that determine the survival of bacteria in the nasopharynx. An attempt in this direction has recently been reported by Bloomfield⁶ from the Medical Clinic at the Johns Hopkins Hospital. Large numbers of an easily recognizable nonpathogenic organism, *Sarcina lutea*, were introduced on the mucous membranes. It was usually impossible, even after a short period of time, to recover the sarcinae swabbed in large amounts on the tongue, nasal mucosa,

or into the crypts of the tonsils. Disappearance from the nose was somewhat slower than from the other sites; yet in only one instance could any of the organisms be recovered in twenty-four hours, and in no case after two days. Such findings testify to the tendency to rapid disappearance of the introduced foreign micro-organisms; and as the culture doses were vastly greater than those involved in any natural infection, the results, says Bloomfield, indicate the remarkable efficiency of the mechanism present in the upper air passages for disposing of the organism investigated in his studies.

There is reason to assume that this protective function of the areas involved is not necessarily simple or uniform in character. The possible flushing action of the secretions and the ejection of them in various natural ways from the nose and mouth represent mechanical factors. The possibility of chemical bactericidal action on the part of the secretions is also to be reckoned with. Finally, one must take into consideration biologic modes of resistance, such as phagocytosis or the effect of normal mouth bacteria on the invader. From his initial investigations with the single species mentioned, Bloomfield tentatively attributes the effectiveness in the disposal of the micro-organisms to a prompt and marked bactericidal effect exerted by the saliva and mouth secretions. This seemed to be independent of the bacteria normally present in the saliva. The reaction of the mouth secretions and mechanical cleansing played little if any part. It will be interesting to learn more about the safeguards against more virulent organisms and why they break down or fail in certain cases.

Current Comment

VACCINATION WITHOUT SCAR

An ancient joke relates that a "chorus lady," requiring vaccination, insisted that it be done so that the scar would not show. As a result, she took the virus in a spoon. It now appears that there may be another way of avoiding the scar without resorting to a spoon, viz., by hypodermic injection. During the last four years Major Goodall¹ of the Canadian Army has been experimenting with such a method. After using it on 6,000 soldiers and children he claims these advantages: (1) the absence of an open wound subject to infection; (2) the ability to dispense with dressings; (3) the high percentage of "takes"; (4) the comparative mildness of the local and systemic reactions; (5) the rapidity, and (6) the great ease with which it can be done in children. There were no accidents in his series. One man had a small slough which later healed over without any difficulty, and a few others had badly swollen arms. The advantages of such a method, if perfected and found reliable, are so obvious that it is not surprising that others have experimented with it in the past. Chauveau was probably the first, in 1886-1887, to show that it could be used in animals and in man. He tried

4. Schneider and Havens: Am. J. Physiol. **36**: 380, 1915.

5. Zinsser, H.: Infection and Resistance, New York, 1914, p. 13.

6. Bloomfield, A. L.: The Fate of Bacteria Introduced into the Upper Air Passages, Bull. Johns Hopkins Hosp. **30**: 317 (Nov.) 1919.

1. Goodall, J. R.: Am. J. M. Sc. **158**: 721 (Nov.) 1919.

it also intravenously. It would seem from the experiments of Kraus and Volk² that Goodall might have lessened the severity of his reactions by using one thousandth of the dose. As would be expected, only very small amounts of the virus are needed for the subcutaneous injection. Casagrandi and later Knoepfelmacher showed that enough of the virus passes through a Chamberland candle to permit the use of the filtrate for subcutaneous vaccination. The literature is summed up by Knoepfelmacher,³ he was not satisfied at that time that the immunity conferred with this method would be as lasting as that with the old. In view of the importance of the suggestion, it is desirable that two questions be settled: first, whether or not the method actually produces an immunity, and second, the permanency of the immunity.

THE LESIONS OF TYPHUS FEVER

After death from typhus fever there are no constant characteristic lesions visible to the naked eye. The rash may have faded, and the organs, in uncomplicated cases, may show only congestion. It follows that an anatomic diagnosis of typhus fever can be made only on the basis of microscopic studies, if at all. Recent investigations summarized by Nicol⁴ and extended by him through the systematic microscopic examination of material from a large number of cases of typhus fever in which death occurred in all stages of the disease, have shown definitely that typhus exanthematicus is to be regarded as a systemic disease of the smaller arteries and the capillaries. There are necrosis and proliferation of the endothelium, associated with perivascular infiltration of leukocytes and other cells, especially in the skin and the central nervous system, and, to a less degree, the myocardium and practically all the other organs. The medulla, particularly about the olivary bodies, seems to be a favorite seat for this process, which sometimes may pass into a hemorrhagic encephalitis. Usually these characteristic arteriolitic and periarteriolitic foci disappear if the patient survives, but small scars may result. The localization of the changes in the medulla and upper part of the cord would seem to explain such symptoms as disturbances of deglutition, respiration and circulation, and no doubt death often results from lesions in the central nervous system; in cases of sudden death, lesions of the myocardium may be the cause. In about half of the cases complications, chiefly pneumonia, appear to determine the fatal outcome. Of the secondary invaders, streptococci are the most important. The demonstration of a widespread, focal arteriolitis and periarteriolitis in typhus fever is of great interest and value not only because it gives a better insight into the nature of the disease and the causation of the symptoms but also in that it provides new and important means for recognition of the disease in isolated or obscure cases referred to the pathologist for diagnosis by postmortem examination. We know that typhus may occur in cities like New York; and in

cases of death from what seems to be acute infection without any definite gross lesions, a thorough microscopic examination, with the vascular lesions of typhus in mind, would seem to be highly desirable.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES—ITS CENTENNIAL

One hundred years have passed since the appearance of the first number of the *American Journal of the Medical Sciences*. Like the centenarians whose pictures appear in the daily press it is still going strong, with eyesight undimmed and digestion unimpaired. When interviewed as to the causes responsible for its long life it responded:

The *Journal* has been instrumental in molding medical thought not only here but also abroad, for being, with one exception, the oldest medical periodical in the English language it has been able to play a leading rôle in bringing before the profession of other lands the medical contributions of this country. Those who today guide the destinies of the *American Journal* are keenly aware of the heritage that is theirs and the responsibilities that it entails. It will ever be their earnest endeavor to maintain the high ideals in medical journalism for which this publication has so long been conspicuous. . . . They aim to make the *Journal* of the future the same honest, scientific, helpful periodical that it has been in the past.

We congratulate this centenarian on its high ideals and its enviable record: It has recorded the achievements of a century of American medicine — something certainly to be proud of.

DIAGNOSTIC VALUE OF EXAMINATION OF THE SPINAL FLUID

Since Quinke first introduced lumbar puncture, a very considerable development has taken place in the methods of examining the cerebrospinal fluid obtained by this procedure. At present, as Solomon¹ points out, there are five methods of examination in common use. These are the Wassermann reaction, tests for an increase in albumin, tests for globulin, the colloidal gold test of Lange, and the cell count. As these different tests have been developed there has always been a tendency on the part of their discoverers to herald them as more or less specific in character. Since the opening of the Psychopathic Hospital in Boston, a large series of spinal fluids have been examined by these different tests, and Solomon's article summarizes the results of this experience. There are two main conclusions to be drawn from his work: first, that the Wassermann reaction in spinal fluid is pathognomonic of neurosyphilis, although it may occasionally be absent in such cases; and second, that the other tests mentioned are not pathognomonic tests but are indicative merely of some inflammatory process involving the central nervous system. The analysis of the results obtained at the Psychopathic Hospital makes it clear that, with the exception of the Wassermann reaction, none of these tests, either singly or in combination, are characteristic of any one disease. It does not seem to matter whether the process is a meningitis, an encephalitis, a tumor with sympathetic meningitis,

2. Kraus and Volk: Wien. klin. Wchnschr. **19**: 620, 1906.

3. Knoepfelmacher, W.: Handbuch der Technik und Methodik der Immunitätsforschung. Jena **1**: 682, 1908.

4. Abstr. Norsk Mag. f. Lægevidensk. **80**: 1359, 1919.

1. Solomon, H. C.: Nonconcomitance of Spinal Fluid Tests, Arch. Neurol. & Psychiat. **3**: 49 (Jan.) 1919.

inflammation following a vascular insult or a trauma, or a disease like multiple sclerosis. The result, so far as the changes in the spinal fluid are concerned, is essentially the same, namely, one or a combination of the reactions mentioned is produced. In one case, only pleocytosis may be present; in another case, the colloidal gold reaction may be positive and the other tests negative; in still other cases, combinations of these reactions occur. The examination of the spinal fluid is of such great value as a diagnostic aid that it is important that its limitations should be recognized. As Solomon points out, no spinal fluid can be said to be negative unless all of these different tests have been carried out. It is to be anticipated that further refinements in the examination of the spinal fluid will be developed; but it would seem from these studies that at the present time we can deduce from the examinations mentioned that a patient is suffering either from neurosyphilis or from some other inflammatory condition of the cerebrospinal system. In cases in which added elements like bacteria are present, the specific cause of the inflammation can frequently be detected; and this is true not only of acute infections but also of a large proportion of cases of tuberculous meningitis.

THE DIET IN PREGNANCY

In 1889, Prochownik recommended a "dietary for the purpose of avoiding the necessity of premature labor." He concluded that it is possible, through dieting the mother, to limit the weight of the child, and even retard the ossification of its bones. Unfortunately, his statements never seem to have been adequately confirmed. Recently Ehrenfest¹ analyzed the original paper of Prochownik. As a result, he believes that the author selected his cases in such a way that an especially favorable impression is produced. A survey of obstetric literature since Prochownik's original publication indicates that his views have received considerable attention, but the discussions are either quite neutral, or else the authors condemn Prochownik's views unqualifiedly. The few animal experiments available also offer no good evidence for the limited dietary. From the biologic point of view, present conceptions are that the fertilized ovum is an individual organism controlled by the placenta, an organ endowed with an active vitalistic function securing the substance essential for the development of the fetus from the maternal organism. It is also pointed out that the size of the fetus, including its general skeletal development, weight and length combined, is of more importance in the mechanism of birth than merely the weight alone. As a result of analysis from all these points of view, Ehrenfest concludes that the pregnant woman should not be permitted to eat to excess by responding, without restrictions, to the increased food desire created by the food demands of the fetus. It is his belief, however, that pregnancy causes an increased demand for food, which should be given in the form of nutritious, easily digestible substances. In the Prochownik diet, proteins are substituted for carbohydrates, and the

water intake is greatly reduced. Obviously, such a diet must be very carefully controlled and supervised, since it may actually be responsible for toxemic conditions, far more serious than any increased weight of the fetus. The adoption of routine treatments on the basis of *a priori* reasoning alone is not scientific medical practice. The question is one capable of easy proof by scientific research in any good hospital.

Association News

THE NEW ORLEANS SESSION

New Orleans and the American Medical Association

The *New Orleans Medical and Surgical Journal*, in its current issue, contains an editorial on the coming annual session of the American Medical Association, to be held in New Orleans, April 26 to 30. It says:

"Many remember New Orleans at the time of the 1903 meeting. The glamor of a Latin city, rough jeweled by modern civilization, set apart among the traditions of a people, still mourning its chapters of sad experiences of most a century and hard to rouse. The spirit of hospitality still alive, and ready to welcome, found a Crescent City full of kindness to those who traveled far to see and sense the Old Metropolis of the South.

"Our streets were none too clean; our hotels old fashioned and limited in number; our water supply of uninviting, muddy purity; our sewage still undisposed of in any sanitary fashion, and the vista of pleasant residences marred by unsightly cisterns, on which many households still relied for their potable and ablutionary water.

"Since 1903, yellow fever, plague and disastrous storm have visited New Orleans, and at last the fighting spirit of its people has been aroused.

"It will be a new New Orleans in 1920. To those who knew us of old, there will still be the landmarks where culinary feasts may satisfy epicurean appetites. The old French quarter still preserves its architecture and its traditions. The varying patois, argot, gombo and creole French may be heard, mingled with the Italian, which has easily been grafted in the quarter. The sightseers may still find the most of the sites of old New Orleans history, which has been much aided by the Historical Society, now exhibiting in the old Spanish Cabildo at Jackson Square.

"But leave the sentimental region and traverse the main streets of newer New Orleans and see how all has changed in these few years."

"A 'stroll on Canal Street' is a thing of the past—there is the same hurry and bustle as on State Street, or Chestnut Street, or Fifth Avenue, or Charles Street, in our Northern sister cities. Great buildings have risen, banks have stepped into the air; hotels have multiplied, streets have been paved; the sewage has been controlled; the drainage settled; and the faucet at the bath, or at the font, brings crystal water as sweet and alive as from a perpetual spring, furnished by our great Mississippi, which still rolls by and as ever fondly embraces our old and new city in its crescent fold."

Medicated Alcohol.—Pharmacists who hold a permit and have given bond are allowed to medicate alcohol and sell it for nonbeverage purposes in quantities not exceeding one pint, provided they first medicate it in accordance with any one of nine formulas specified by the commissioner of internal revenue, U. S. Treasury Department. Phenol, liquor formaldehydi and mercuric chlorid are the chief of these denaturing agents. The container of such medicated alcohol must bear a "poison" label. The sale by pharmacists of medicated alcohol for industrial purposes is prohibited. It is sold chiefly for rubbing purposes.—*Illinois Health News*, October, 1919.

1. Ehrenfest: Diet of the Mother During Pregnancy, *Am. J. Obst.* 80: 441 (Oct.) 1919.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Smallpox in East Moline.—The health authorities, January 12, unearthed a flagrant violation of health rules in East Moline, where six out of a family of eight were found to be suffering from smallpox without a physician in attendance.

Personal.—Dr. O. Alfred Olson, Rockford, is reported to have been arrested in a raid on communists in Rockford, January 8.—A committee of the Oak Park Physicians' Club, consisting of Drs. Arthur M. Corwin, Harry J. Stewart, Leslie W. Beebe, and Clarence E. Hemingway, January 15, cleared Dr. Thomas E. Roberts of charges that he had received remuneration for services as director of the American Red Cross Bureau in Oak Park.

Hospital Items.—Improvements costing about \$700,000 are being made at St. John's Hospital Farm, near Riverton. The next building to be erected will be for crippled children. Other structures included in the plans are a home for mentally deficient girls, a hospital for those suffering from nervous diseases and a building to be used for convalescents coming from St. John's Hospital in Springfield.—Additional buildings which have been begun at the Alton State Hospital will represent an investment of \$500,000 and will increase the capacity of the institution from 700 to 1,300.

Influenza.—Influenza is reported pandemic. The disease is of relatively mild type and few deaths are being recorded.—At the United States Naval Training Station, Great Lakes, an order was issued January 14, prohibiting gatherings in buildings and barracks, and forbidding visitors. Up to noon, January 19, 578 cases of influenza had been reported, with fifty cases of pneumonia, and three deaths.—In Chicago influenza is said to be spreading at the rate of 1,000 new cases a day. Up to January 20, 4,095 cases had been reported, with thirty-three deaths, and 891 cases of pneumonia, with 159 deaths.—Hospitals are so overcrowded that operations with the exception of emergency operations are not to be performed during this crisis.—Health Commissioner Robertson has appointed a commission of pathologists to act with the department of health in this emergency, consisting of Drs. Ludvig Hektoen, Robert Zeit, W. Henry Wilson, Arthur I. Kendall, David J. Davis, Edward O. Jordan, William A. Evans and C. St. Clair Drake.—There is a shortage of trained nurses, but the health commissioner believes that this condition will be alleviated if the recent graduates of the courses in home and public health nursing will accept positions.

Chicago

Sanitary District Health Activities.—At a meeting of the stock yards branch of the Chicago Medical Society, January 15, the activities of the sanitary district as a function in the health of Chicago were discussed by Dr. Willis O. Nance, president of the sanitary district.

China as a Field for American Activities.—The possibility of China as a field for American commerce, finance and industry were set forth in an illustrated lecture by Dr. E. H. Hume, head of the medical department of Yale-In-China, an institution maintained at Changena, at a banquet of the Yale Club of Chicago, January 10.

New Officers.—At the twenty-eighth annual meeting of the Chicago Ophthalmological Society, held in Chicago, January 19, the following officers were elected: president, Dr. Alfred N. Murray, Chicago; vice president, Dr. William R. Fringer, Rockford; secretary, Dr. Francis Lane, Chicago, and counselor, Dr. Ephraim K. Findley, Chicago.

Medical History of the War.—Three Chicago physicians are playing an important part in the preparation of the medical history of the world war. These are Drs. Casey A. Wood, Frank Billings and Harry E. Mock. The history will comprise about twenty volumes, will be encyclopedic in character, and it is promised, will be promptly issued. The first volume, which has to deal with the hospitals of the United States, was written by Dr. Wood, is now completed and is ready for press. Drs. Mock and Billings are preparing

the history of reconstruction dealing with the rehabilitation of disabled soldiers.

Hospital Asks Millions of Dollars.—At a meeting, January 17, a five-year program of expansion for the Wesley Memorial Hospital became assured. This involves the addition of \$10,000,000 worth of new buildings and the raising of an endowment fund of from \$10,000,000 to \$15,000,000. Sufficient funds have already been pledged to insure construction of the first of the four new buildings desired, which will be utilized as an addition to the nurses home. The second building will be a new section to the hospital proper which will add 1,200 beds to its capacity, a building for contagious diseases will next be erected and lastly a new power plant.

Banquet for Dr. Wood.—Dr. Casey A. Wood, the well known ophthalmologist of Chicago, has decided to retire from the practice of his specialty. The Chicago Ophthalmological Society gave a reception and banquet in honor of Dr. Wood on the occasion of its twenty-eighth annual meeting, January 19, at the Hotel LaSalle. Dr. William L. Noble presided as toastmaster, and the following responses to toasts were made: "Dr. Wood as the Ophthalmologist," by Dr. Lucien Howe, Buffalo; "Dr. Wood as Writer and Editor," by Fielding H. Garrison, Lieut.-Col., M. C., U. S. Army; "Dr. Wood as Professor of Ophthalmology," by Dr. Harold Gifford, Omaha; "Dr. Wood as Military Surgeon," by Dr. Walter P. Parker, Detroit; "Dr. Wood as Ornithologist and Comparative Anatomist," by Prof. Henry B. Ward of the University of Illinois. Brig.-Gen. H. S. Birkett, Montreal, dean of the Medical Faculty of McGill University, brought greetings from that institution. The society voted to confer honorary membership on Dr. Wood and the certificate was formally presented by Dr. Willis O. Nance. Dr. Heman H. Brown then presented Dr. Wood with a richly bound book containing the autographs of all persons present at the banquet. Dr. Wood left for his new home in Palo Alto, Calif., January 20, and expects to devote his energies to researches in comparative anatomy, working along special lines.—On January 17, the Society of Medical History was addressed by Col. Casey A. Wood on the subject "William Bailey, Author of the First Ophthalmic Treatise in English"; by Fielding H. Garrison, Lieut.-Col., M. C., U. S. Army, on "Medical Men and Music," and some remarks on the medical history of the war.

The Narcotic Problem.—At the monthly meeting of the council of the Chicago Medical Society, January 14, the committee on the narcotic problem, consisting of Drs. Joseph L. Miller, Whalen, Betz, Scelesh, Fowler and I. C. Gary, reported that the federal government, in the enactment of the Harrison Narcotic Law, had made no provision for handling the problems arising from its enforcement. Although a project is under consideration for delegating to the United States Public Health Service the institutional treatment and care of addicts, no appropriation has been made for this purpose, and therefore the state, municipality, or the physicians of the city must handle this exceedingly difficult problem. Apparently very few municipalities have made any effort to meet the situation, and in the few that have undertaken it the effort has not been rewarded by a high degree of success. Under the law only two classes of addicts may be prescribed for, excepting in the course of a bona fide reduction cure. Persons suffering from an incurable disease such as cancer or tuberculosis may be given prescriptions by the physician directly in charge, for a sufficient amount of the drug for their immediate use, and "addicts suffering from senility or the infirmities attendant upon old age" may only be given the "minimum amount of narcotic in order to sustain life." Addiction is not recognized as an incurable disease. The chief problem, therefore, is handling the addict who does not come under these two classes. The law, as construed by the supreme court, holds it a crime for any one to furnish an addict with a narcotic merely to satisfy his craving for the drug. The only circumstances in which such a person may be given a narcotic is in the course of a reduction cure, and this should be carried out in an institution. Addicts, when the drug is withdrawn, fall into the sick class and should be handled as are other indigent sick individuals. The committee had conferred with the authorities of the Cook County Hospital to determine whether or not they were willing to resume the responsibility of caring for these indigent sick. They consented to undertake the work, and will establish a dispensary at the hospital to which all patients may be referred. After the patient has been restored to apparently good health, the social service department of the hospital will attempt to secure him a position

and to exercise such friendly care as is deemed advisable. The addict, not of the first or second class, who refuses to enter a hospital would be denied a prescription as is required by law. This plan then, leaves unsolved the problem of this class of addicts. A member of the committee has conferred with the secretary of the police force, who informed him that warrants could be issued for this group of addicts on the basis of disorderly conduct or vagrancy, and they could then be confined in the Bridewell where a cure could be given, and with Judge Olson who willingly offered the cooperation of the courts in carrying out this measure. The Internal Revenue Bureau has expressed its willingness to furnish an official to supervise the work. Under this agreement the county hospital will classify and act as a clearing house for all addicts and treat those who can be induced to take the cure. The committee recommended that the council of the Chicago Medical Society accept the offer of the Cook County Hospital, that a committee of the society be appointed to assist the hospital in carrying out the measure and that the Internal Revenue Bureau, Judge Olson, the superintendent of the hospital, and chief of police each be furnished with a copy of the plan. The council, on motion, concurred in the recommendations of the committee which was continued.

INDIANA

Medical Board Officers.—The state board of medical registration and examination at its meeting, January 13, elected Dr. James M. Dinneen, Fort Wayne, president; Dr. William A. Spurgeon, Muncie, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Moses S. Canfield, Frankfort, treasurer.

New Officers.—At the annual meeting of the Indianapolis Medical Society, January 6, the following officers were elected: president, Dr. James H. Taylor; vice presidents, Drs. Maxwell A. Bahr and Robert E. Repass, and secretary-treasurer, Dr. Leslie H. Maxwell. The retiring president, Dr. Charles F. Neu, in his address urged that the society open headquarters in a home of its own, and the new president said that some action will be taken this year in this regard.

Personal.—Edgar C. Loehr, Noblesville, is seriously ill at St. Vincent's Hospital.—Dr. Aldine E. Morgan, for the last three years at the head of the Indiana State Soldiers Home, Lafayette, has resigned to accept a similar position in the Marion Branch, National Soldiers Home.—Dr. George S. Bliss, superintendent of the Indiana School for Feebleminded Youth, Fort Wayne, has resigned.—Dr. Martin L. Arthur, Patoka, has been appointed physician of Gibson County, succeeding Dr. Amos H. Rhodes, Princeton, resigned.—Dr. Hugh J. White, Hammond, has been appointed deputy coroner of Lake County.

MARYLAND

Personal.—Dr. John M. T. Finney, associate professor of surgery in the Johns Hopkins Medical School, has been invited to accept the chair of surgery at Harvard University, his alma mater, and has left for Boston to meet the directors of Harvard University.

Fund Complete.—Announcement has recently been made that the fund of \$15,000 to complete the payment on the Medical and Chirurgical Faculty building, has been raised. This fund was started last summer by Sir William Osler, who sent a check of \$1,000, expressing the hope that the sum would be raised before Christmas. The fund was completed Christmas eve.

Data Lost in Fire at the Johns Hopkins.—Valuable data and records, covering two years' research in the cause and effect of influenza, made by Dr. Thomas M. Rivers, an authority on this disease, and the laboratories of Dr. Bayne Jones and Dr. Lloyd D. Felton, containing apparatus and data of inestimable value, were destroyed in the fire which recently broke out on the top floor of the pathologic building in the Johns Hopkins Hospital group. The researches of these three physicians cannot be replaced in months.

Improvements at Johns Hopkins Hospital.—The work of repairing the pathologic building of Johns Hopkins Hospital, which was partially destroyed by fire recently, will be begun at once. Most of the damage done to the building was confined to the top floor. In addition to improving the pathologic building, the one-story structure used as a free dispensary, which has been inadequate, will be replaced by a modern structure, in keeping with the other buildings on the grounds. Plans have been prepared for the erection of a five-

story dispensary on the same site, and the building will be erected within a short time.

Report of Fort McHenry Hospital (U. S. Army General Hospital No. 2).—This army hospital reached its full maturity in 1919. From Jan. 1 to Dec. 1, 1919, there were admitted to the post, 14,277 patients, of whom 13,048 have since been discharged or removed. There were 3,285 surgical operations during the year and all but eighteen patients passed through successfully. In July there were 419 operations and no deaths, and in March, 418 operations and only one death. It has cost approximately \$3,000,000 to maintain the hospital during the year.

Psychiatric Ward at Marine Hospital.—A special ward for the treatment of patients suffering from war neuroses and mental disorders has been instituted at the Marine Hospital, Baltimore. Treatment is given to discharged members of the army, navy and marine corps under charge of the United States Public Health Service. The hospital covers District No. 4, comprising Maryland, Virginia and West Virginia. Asst. Surg. Henry E. St. Antoine has been placed in charge of the work and at present has about twenty-five patients in his care.

Dental Clinics in Schools.—Health Commissioner C. Hampson Jones has taken the first steps toward establishing municipal dental clinics in public schools in Baltimore. The work has been made possible through an appropriation of \$5,000 provided in the 1920 budget by the board of estimates. The first move will be the rehabilitation of two volunteer clinics conducted previous to January 1, by students of local dental colleges, under the supervision of Drs. B. Merrill Hopkinson and B. Holly Smith of the oral hygiene council. Five clinics, including the two already established, will probably be conducted this year, under the supervision of the health commissioner, by young dentists who may receive pay for the work. Should five clinics be established, one of them will be for colored pupils and under supervision of colored physicians.

Social Service Department at Mercy Hospital.—A new social service department was opened at the Mercy Hospital, Baltimore, January 15, under the auspices of the National Catholic War Council, whose name it will bear. This department, with headquarters at the dispensary in Mercy Hospital, will see that the poor sick of the city are given every attention, either at the hospital or in their homes. Ex-service men who are in need of medical treatment will be especially welcomed. Every day from 11 a. m. to 2 p. m. all persons suffering from the ordinary diseases will be treated; from 1 to 2 p. m. daily there will be clinics for those suffering from eye, ear, nose and throat trouble or from children's diseases. On Tuesday, Thursday and Saturday, from 1 to 2, persons suffering from skin diseases will be treated. At the same hour on Monday and Friday afternoons, orthopedic patients will be treated. The nurses in charge will not only attend to those at the dispensary but will also visit the homes of the sick. In cases where children become orphans or cannot be cared for properly by relatives, they will be given medical attention at Mercy Hospital, before being admitted to institutions. Poor persons who are bed patients at the hospital will be visited at their homes after dismissal from the hospital by nurses, who will see that they are kept in good health. Special features of the dispensary are clinical laboratories and a roentgen-ray department. All persons admitted to this department will be treated free.

MASSACHUSETTS

Flattery Medal.—A bronze bas-relief medal given by Maurice Douglas Flattery to Harvard University in 1918, has just been received by the university authorities and will be awarded later "to the person the President and Fellows of Harvard may adjudge to have made a discovery in any branch of science that would result in the greatest good to humanity in the prevention of disease or conservation of health in the broadest sense." The gift is one of a series made by Mr. Flattery, and is based on securities valued at \$7,500, the income from which is to be utilized for the annual award of a medal and \$500 in cash.

MISSISSIPPI

Hospital Opened.—A thoroughly equipped hospital has been opened at Water Valley by Drs. Leonidas S. and George A. Brown, Water Valley.

Hospital Site.—The Mississippi Methodist Conference Hospital will be located at Hattiesburg, according to a

decision of the commission which had the duty of choosing between several towns that were competing for the location of the hospital.

Personal.—Dr. M. P. Winkler, Schula, has been appointed physician for the Belmont State Farm in Holmes County.—Dr. Clyde R. Stingily has succeeded Dr. T. R. Wilson as director of the state hygienic laboratory. Dr. Stingily had previously been connected with the laboratory for twelve years.

Public Health Association Meeting.—At the annual meeting of the Public Health Association held in Jackson, Dr. William H. Frizzell, Brookhaven, was elected president, and Drs. Thomas E. Hewitt, Liberty, Amite County, Paul G. Pope, Gulfport, and F. J. Underwood, Monroe, were elected vice presidents.

Epidemic Diseases.—Dr. C. L. Williams reports that he is investigating the outbreak of dengue fever at Woodville and is satisfied that the disease was brought there by a woman visitor from Porto Rico.—Dr. W. S. Leathers has sent C. M. Ship, state investigator, to Crowder to combat a smallpox epidemic.

Hygiene Department Established.—There has recently been organized at the University of Mississippi a department of hygiene under the auspices of the Interdepartmental Social Hygiene Board, Washington, D. C., and Dr. Elise McLaurin Rutledge, Memphis, Tenn., has been placed in charge of this department.

Support Compulsory Physical Education.—Dr. J. W. Provine, Clinton, president of Mississippi College; Dr. D. C. Hull, Meridian, formerly head of the Millsaps College, and Dr. Zeno Wall, Clinton, and other prominent citizens of Mississippi have accepted membership on the Mississippi Physical Examination Committee which is conducting a campaign to obtain the compulsory physical education legislation as approved by the state department of education.

New Officers.—The secretary of the Homochitto Valley Medical Society informs us of an error in the statement which appeared on page 1536 of THE JOURNAL, Nov. 15, 1919, in which Franklin County was omitted from the societies which make up the Homochitto Valley Medical Society. The vice presidents for these counties are: for Adams County, Dr. John W. D. Dicks, Natchez; for Amite County, Dr. Hiram K. Butler, Liberty; for Franklin County, Dr. Charles E. Mullens; for Jefferson County, Dr. George M. Barnes, Red Lick, and for Wilkinson County, Dr. Charles E. Catchings, Woodville. Dr. J. N. Ullman is secretary-treasurer of the society.—At the meeting of the Harrison-Stone County Medical Society at Gulfport, December 9, the following officers were elected: president, Dr. Edward C. Parker; vice presidents, Drs. Charles A. Sheeley, Gulfport, and George A. McHenry, McHenry, and secretary-treasurer, Dr. Daniel J. Williams, Gulfport.—At the meeting of the Jones County Medical Association held at the South Mississippi Charity Hospital, Ellisville, in December, Dr. Willie N. Blount was elected president; Dr. Ellison H. Williamson, Soso, vice president, and Dr. John R. Kittrell, Laurel, secretary-treasurer.—Washington County Medical Society at its meeting in Greenville, January 9, elected Dr. E. G. Martin, Benoit, president, and Dr. Woodson A. Stevens, Greenville, vice president.

MISSOURI

Smallpox in St. Joseph.—January 6, eleven cases of smallpox were reported in St. Joseph, making the total number more than fifty.

New Officers.—At the annual meeting of the Buchanan County Medical Society at St. Joseph, the following officers were elected: president, Dr. Louis G. Dandurant; vice presidents, Drs. Harry S. Conrad and Thomas M. Paul; secretary, Dr. Francis X. Hartigan, and treasurer, Dr. John M. Bell, all of St. Joseph.

Physicians' Building.—A fourteen-story building is to be erected at Eleventh and Cherry streets, Kansas City, to be used entirely by physicians and dentists. The building will cost about \$1,250,000 and the project is said to be supported by the Jackson County Medical Society and Kansas City Dental Society.

New County Hospital.—The county court has called for an election in February on a proposition to issue additional bonds to the amount of \$57,500 for the new county hospital that is to be erected in Fulton. The first bond issue of \$75,000 carried by a large majority but it was found that this was not sufficient to complete the building.

Personal.—Dr. Major G. Seelig has been appointed professor of clinical surgery in the School of Medicine of Washington University, St. Louis.—Dr. H. T. Barnes, Nelson, has been appointed superintendent of the Confederate Home, Higginsville.—Dr. Joseph J. Bansback has been appointed director of the venereal disease clinic of St. Joseph.

Influenza or Winter Cholera.—A condition which has been called winter cholera has been prevalent in children of Kansas City for more than a month. The dominant symptoms are acute indigestion, attended by nausea and diarrhea. No report has been made thus far of the seriousness of the disease. Its appearance at about the same time that influenza is prevalent in other parts of the country suggests the possibility that the condition is the intestinal form of influenza.

Health Survey and Demonstration.—The United States Public Health Service has undertaken health surveys and demonstrations in several localities of the state whereby it is hoped to establish standards for child work in the school and home. The study will be confined to those communities which afford the best prospects of putting the work on a permanent self-sustaining basis. Dr. Carlisle P. Knight, U. S. P. H. S., is in charge, assisted by Dr. Lydia A. De Vilbiss. The state board of health, American Red Cross, Missouri Tuberculosis Association, boards of education, women's organizations and city officials are cooperating in this work and the staff is made up of specialists in the different branches of medicine, nurses, field workers and clerks. The purpose is to conduct a comprehensive field investigation and demonstration in child hygiene along modern, scientific lines. In addition to this it is planned to organize a division of child hygiene within the state board of health and to assist and encourage local child hygiene activities. As a first step, agents of the Public Health Service will make a house-to-house canvass in the localities selected, and physicians and public health nurses will make visits where there are children of preschool age. Birth registration will be stimulated, prenatal supervision will be provided whenever possible or desired, and a modern health crusade will be conducted in the schools by teachers, nurses and physicians with the active cooperation of the state tuberculosis association. Schoolchildren will be examined and where necessary, suitable treatment will be recommended. Each community will be asked to make the work permanent, particularly that part of the work which provides for a full-time health officer in each community, and for the regular examination and treatment of the children.

NEW YORK

Personal.—Dr. Malcolm F. Lent, formerly medical director of Stony Wold Sanatorium, Lake Kashaqua, has been appointed supervisor of tuberculosis of the state department of health.—Dr. Herman M. Biggs, state commissioner of health, was reappointed by the governor for a term of six years, January 12, and the appointment was unanimously confirmed by the senate on the same day.—Drs. Thomas M. Holmes, Delmar, and James H. Mitchell, Jr., Cohoes, have been appointed coroner's physicians of Albany County succeeding Drs. Charles E. Bailey and James E. McDonald.

Public Water Supplies.—In an investigation made by the state department of health of the sanitary quality of the public water supply of Syracuse the question arose as to the elimination of tastes and odors due to algae growths. It has been suggested that copper sulphate be applied at the upper end of the twenty-mile conduit followed by aeration at the distributing reservoir.—Chlorination plants have recently been installed for the treatment of public water supplies at Gloversville, Gouverneur, Saratoga Springs and Sulphur Creek.—The board of water officials is considering the installation of a coagulation and sedimentation basin to be operated under pressure in connection with the pressure mechanical filters now in use at Cobleskill.

New York City

Influenza Cases Increase.—The records of the health department show that for the period from January 12 to January 16, inclusive, there were 291 new cases of influenza reported as against 97 in the preceding week.

Drug Trafficker Gets Prison Sentence.—Dr. M. A. de Preta, who was convicted of writing 50,000 prescriptions for narcotic drugs for drug addicts, was sentenced by the federal court to four years imprisonment at Atlanta. Dr. de Preta was released on \$20,000 bail pending an appeal which was entered.

New Hospital Building.—The Hospital for Deformities and Joint Diseases has purchased four parcels of real estate adjoining its present holdings. The new purchase forms a portion of the site on which a new \$1,000,000 building is to be erected for the hospital.

Personal.—Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research has gone to Progreso, Mexico, and will then proceed to Merida, to carry on confirmatory studies of *Leptospira icteroides*, and to test on a larger scale the curative properties of his specific serum.

Society of Medical Jurisprudence Opposes Health Insurance.—At the 306th regular meeting the New York Society of Medical Jurisprudence the subject of compulsory health insurance was discussed from the legal and medical standpoints by the outgoing and incoming presidents of the society. The society went on record as opposing compulsory health insurance.

Vacancies in Montefiore Staff.—The medical director of Montefiore Home and Hospital for Chronic Diseases, Gun Hill Road (East 210th Street), announces that there will be vacancies on the resident medical staff. Applications in writing may be addressed to Dr. Sigfried Wacksmann, medical director of the hospital, or applicants present themselves in person between 10 a. m. and 12 m. daily.

Great Demand for Nurses.—The annual meeting of the directors of the Henry Street Settlement was held at the Cosmopolitan Club on the evening of January 7. It was shown that the demand for nurses was constantly increasing in all boroughs, and had never been greater than at present except during the influenza epidemic. The institution has trained 176 nurses for public health service including graduate and undergraduate students.

Proper Feeding of Undernourished Children.—The Bowling Green Neighborhood Association, organized five years ago for improving health, living, and recreation conditions in the Bowling Green district, has established an experimental restaurant where it serves three meals a day to needy children to bring about the proper feeding of undernourished children. This is part of an experiment in a six months' campaign to instruct parents in the proper feeding of children.

Rockefeller Aid to Canadian Medical Schools.—In response to many inquiries regarding the distribution of a portion of John D. Rockefeller's gift to medical education, Dr. George E. Vincent, President of the Rockefeller Foundation, has issued a statement explaining that no definite policy would be adopted regarding the disbursement of the fund until after conferences were held with a large number of Canadians representing all the important institutional and geographic interests of the Dominion.

Schick Test for Children Entering School.—The health department has made arrangements whereby children entering school for the first time in February next will receive circulars relative to the value of the Schick test. Parents will be urged to have this test performed either by the family physician or by the school medical inspectors. The bureau of laboratories of the department of health is instructing the medical inspectors of the bureau of child hygiene in the technic of making these tests.

Rockefeller Foundation Buys Plot.—The Rockefeller Foundation has purchased a plot of ground, approximately 500 by 200 feet, between Sixty-Seventh and Sixty-Eighth streets, just north of the site of the hospital of the Rockefeller Institute of Medical Research. The property was formerly owned by the Presbyterian Hospital, and is assessed at \$100,000. While no definite statement has been made as to the use to which this acquisition is to be put, it is believed that it is to provide for a considerable extension of the institution's work.

Health Department Orders Study of Measles.—Because of the increase in the number of cases of measles in this city Dr. Copeland, health commissioner, has sent a letter to the division of laboratories, of which Dr. William H. Park is director, asking that a serious study of the disease be undertaken at once. During the ten days preceding January 12, 2,221 cases were reported to the health department; while at the present time from 200 to 300 cases are reported daily. Dr. Copeland states that the appearance of such a large number of cases at this time is unexpected as the disease is usually at its maximum in May.

Prohibition of Loud Noises.—At a recent meeting of the board of health a new section was added to Article 12 of the Sanitary Code which provides that automobiles and other motor vehicles equipped with gasoline or other internal combustion engine, shall be constructed so that the exhaust from

such engine is made to discharge into a muffler or other device which will prevent loud or explosive noises; and no person having the management or control of any such automobile or vehicle shall suffer or allow the exhaust from such engine to discharge into the open air, or otherwise than into a muffler or other device which would prevent loud or explosive noises.

Czecho-Slovakian Fellows of Rockefeller Foundation.—The following four physicians from Czecho-Slovakia have joined those who are now studying American methods of administration in medical schools: Drs. Zdenek Bernard, a Bohemian, 29 years of age, a graduate in 1914 of the University of Prague, who is making a special study of the organization of hygienic work in factories and the latest methods of treating venereal disease; Dr. Hynek Pelc, a graduate in 1918 of the University of Prague and later attached to the sanitary service in Cognac, France; Dr. Jaroslav Hulka, a Bohemian and graduate from the University of Prague in the class of 1919, who will devote himself to tuberculosis problems, and Dr. Karel Driml, a graduate of the University of Prague in 1914, who specializes in bacteriology and gynecology. All of these physicians have had medical experience during the war, and one was wounded in line of duty. Eight Chinese physicians, eight Chinese undergraduate medical students, four Chinese nurses, eleven medical missionaries on furlough from China, four physicians from Brazil and one physician from Salvador are also studying in America under fellowships from the Rockefeller Foundation.

PENNSYLVANIA

Philadelphia

Medical Club Meets.—The annual election and reception of the Medical Club of Philadelphia was held at the Bellevue-Stratford January 16. The officers elected were, president, Dr. Francis X. Dercum; vice presidents, Drs. Barton Cooke Hirst and Levi J. Hammond; secretary, Dr. William S. Wray, and treasurer, Dr. Lewis H. Adler.

Hospitals to Unite.—The Women's Hospital and the Women's Medical College Hospital have decided to unite. Announcement was made January 16. Committees from both hospitals had been appointed to form plans for a platform of affiliation; they will be vested with advisory powers and will arrange for a combination of dispensaries and the establishment of a purchasing department.

Personal.—Dr. Charles D. Hart has accepted the appointment as member of the board of prison inspectors for the Eastern Penitentiary.—Drs. Alice Weld Tallaunt and Maud Kelly who served with the French Society for Devastated France, Dr. Marianna Taylor, St. Davids, Pa., Friends Reconstruction Unit, Dr. Caroline Purnell, Commissioner to France, from the American Women's Hospitals, Dr. Regina Downe, Dr. Mary N. McLauchlan and Dr. Edith T. Morehouse of the American Women's Hospitals, Dr. Marie K. Formad of the Women's Overseas Hospital, and Dr. Laura Hunt of the Red Cross were the guests of honor at the medical college luncheon at the Adelphia January 16.

CANADA

Smallpox.—Smallpox is reported to have broken out in Winnipeg, and the medical authorities of Manitoba have placed a ban on all travelers from the south who cannot produce satisfactory certificates of vaccination.—Smallpox is reported to have broken out in twenty-six new centers throughout the province of Ontario, and the province is still virtually under quarantine.

University News.—Prof. Clarence Moore has resigned the chair of biology in Dalhousie University, Halifax, N. S., and has been succeeded by Prof. Dowell Young of Cornell University.—President, Sir Robert Falconer of the University of Toronto in his annual report, states that while the attendance has increased, the staff has decreased. The staff in 1917-1918 numbered 413, while in 1918-1919 it was 369. The total registration of students is 3,356.

Personal.—Sir Robert Borden, premier of Canada, is now on his way to Florida suffering from the effects of his exertions during the world war. He expects to be away for about six months.—Dr. John Brown, Jr., Toronto, has been made head of the physiological department of the Y. M. C. A. of North America, succeeding Dr. George J. Fisher. His title will be Senior Secretary of the Physiological Department, Home Service Committee, of the Y. M. C. A.—Major Ambrose L. Lockwood, D. S. O., M. C., Brookville, Ont., is

leaving for the Mayo Clinic, Rochester, Minn. Major Lockwood was with the Royal Army Medical Corps from 1914 to 1919.—Dr. Archibald P. Knight, emeritus professor of biology, Queen's University, Kingston, Ont., will succeed Dr. Archibald B. Macallum, retired, as representative of the department of naval service on the biologic board of the Dominion government. Prof. Robert F. Ruttan, McGill University, Montreal, has also been appointed a member of the board, to fill the place vacated by Prof. John George Adami, Montreal.—Capt. Baldur H. Olson, M.D., Balfour, recently resigned as medical superintendent of the Balfour Sanatorium, B. C. He is succeeded by Dr. Francis J. Kenny.

Plans for Queen's University Medical School.—A committee of the trustees of Queen's University at a meeting held, Jan. 3, 1920, unanimously agreed on plans for the reorganization and improvement of the medical school at Kingston. A full-time dean and an adequate number of full-time clinical professors are to be secured. The university expects to obtain entire control of the Kingston General Hospital. The hospital pathologic department will be further developed; a new system of records including a complete follow-up record will be installed, and a superintendent obtained who will be responsible for the medical administration of the hospital under the supervision of the university. It is estimated that the cost of rebuilding the hospital will be approximately \$750,000, of which sum \$550,000 is already assured. The expense of securing additional full-time clinical professors and the further development of the pathologic department will be approximately \$35,000, making a total estimated expenditure of \$785,000.

Hospital News.—A new psychopathic clinic has been opened in connection with the Winnipeg General Hospital with thirty-two beds. The administration of the department will be under Dr. Alvin T. Mathers.—The municipal hospital at Fort Rouge, Man., is to be enlarged at a cost of \$1,000,000. It will be situated on the Red River, will have very extensive grounds and will be completed in 1921.—Seven new hospital districts are being established in Manitoba. They are Birtle, Deloraine, Melita, Pipestone, Souris, Ericksdale and Russell. The aggregate cost will be \$200,000, authorized under the Manitoba Municipal Hospital Act.—A children's pavilion in connection with the provincial sanatorium was recently opened by Premier Martin at Fort Qu'Appelle, Sask.—The amalgamation of the Protestant General Hospital and St. Luke's Hospital, Ottawa, is said to be not far distant. Both boards have approved of the scheme. When the hospital assets are transferred to the city of Ottawa, it is hoped to have a 500 bed hospital.

GENERAL

Society Meeting.—The annual meeting of the Mid-Western Section of the American Laryngological, Rhinological and Otological Association will be held in Colorado Springs, Colo., February 7.

Malaria.—A joint resolution authorizing the United States Public Health Service to cooperate with the states in the investigation and control of malaria and appropriating \$500,000 for this purpose was introduced in Congress, January 7, by Senator Harris of Georgia, and referred to the Public Health Committee.

Restrictions on Cuban Travel Removed.—Surgeon-General Blue, U. S. P. H. S., announced, January 6, that all restriction on travel between the United States and Cuba had been removed. Restrictions had been placed on this travel on account of the arrival to the United States from Cuba of several people suffering from smallpox.

Bacteriologists Elect Officers.—At the annual meeting of the Society of American Bacteriologists held in Boston recently, Dr. Charles Krumwiede, Bronxville, of the New York health department was elected president; Dr. F. C. Harrison, president of McDonald College, Montreal, vice president, and Dr. A. Parker Hitchens, Indianapolis, secretary (reelected).

Deaths Following Eating Ripe Olives in New York City.—During the past week newspapers recorded the deaths of six persons in New York City from eating olives. The brand of olives at fault has not yet been stated nor are the details available. It is stated, however, that the deaths were probably due to poisoning with toxins of *Bacillus botulinus*, similar to deaths occurring in Canton, Ohio, and in Detroit, also following eating ripe olives.

Porto Rico Physicians Hold Meeting.—At the annual meeting of the Porto Rico Medical Association held in San

Juan, December 19, 20 and 21, under the presidency of Dr. Jorge del Toro, the following officers were elected: president, Dr. Pedro Malaret, Ponce; vice president, Dr. Pedro Del Valle Atilas, San Juan; secretary, Dr. Agustin A. Langier, San Juan; treasurer, Dr. Jacinto Aviles Borrero, San Juan, and counselor, Dr. Rafael Lopez Sicardo, San Juan. It was decided that the next meeting of the Association be held at Ponce, Dec. 11 and 12, 1920.

Uniformity of Labeling.—The Committee on Agriculture of the United States Senate recently held hearings on the bill of Senator Calder of New York to bring about uniformity in labeling of food and drug products in interstate commerce. The bill was designed to eliminate the conflicting regulations made by the various states. In view of the fact that the Department of Agriculture has interposed objections to its practicability and has presented an opinion seriously questioning the constitutionality of the bill, it is probable that the bill will not receive the approval of the committee.

Mental Hygienists to Meet.—The third annual convention of the Mental Hygiene Society of the United States and Canada will be held in New York City, February 4-5, under the auspices of the National Committee for Mental Hygiene and the Committee on Mental Hygiene of the New York State Charities Aid Association. The mental hygiene lessons of the war are to be one of the chief subjects of consideration at the meeting, at which Major-Gen. Merritte W. Ireland, Surgeon-General, U. S. Army, will preside. Dr. Pearce Bailey will describe the examinations which were used to determine in advance whether or not the soldiers would bear the strain of war, and Dr. Thomas W. Salmon, medical director of the National Committee for Mental Hygiene, will describe methods whereby the procedures employed in dealing with mental and nervous diseases in the American Expeditionary Forces may be applied in civil life. At this meeting twenty-two states and Canada will be represented.

Association for the Advancement of Science.—The seventy-second meeting of the American Association for the Advancement of Science and the affiliated national scientific societies was held in St. Louis, December 29 to January 3, under the presidency of Dr. Simon Flexner, New York. A change in the constitution was made which changed the title of Section II from anthropology and archeology to anthropology and that of Section I from psychology and philosophy to psychology. On the evening of January 1, the presidential address on "Present Problems in Medical Research" was delivered. Among the officers elected were: Dr. L. O. Howard, Bureau of Entomology, Washington, president; Prof. E. L. Nichols, Cornell University, Ithaca, N. Y., general secretary; E. K. Strong, Jr., Carnegie Institute of Technology, Pittsburgh, vice president, Section I, psychology, and Dr. Joseph Erlanger, Washington University, St. Louis, vice president, Section N, medicine.

Bequests and Donations.—The following bequests and donations have recently been announced:

Home of the Merciful Saviour for Crippled Children, Rush Hospital for Consumptives, Children's Seashore Home, Chelsea, N. J., and Children's County Week Association, Philadelphia, each \$1,000 and the residue of the estate after a few private bequests to the Episcopal Hospital, Philadelphia, for the maintenance of two free beds.

King's Daughters Memorial Hospital, Greenville, Miss., a donation of \$5,000 from the Goyer Company, Memphis, Tenn., for the hospital building fund.

St. Peter's Hospital, Charlotte, N. C., a donation of \$10,000 in memory of his grandson, Hamilton C. Jones, III, by W. A. Irwin, Durham. The donation is to be used to build an annex to the hospital, including a children's ward and maternity ward.

Grant Hospital, Chicago, \$100,000; Alexian Brothers' and Michael Reese Hospitals, Chicago, each \$5,000; United Charities of Chicago, \$5,000, by the will of Mrs. Catherina Seipp.

Children's Memorial Hospital, Chicago, \$10,000, the earnings of the Rummage Shop for the endowment of a bed in the hospital in memory of Dr. Walter Shield Christopher.

Bills in Congress.—Representative Henry T. Rainey has introduced in the House of Representatives a bill to provide for the care and treatment of drug addicts identical to that introduced in the Senate by Senator France of Maryland, Chairman of the Committee on Public Health and National Quarantine.—The Public Health Service is supporting a bill introduced by Hon. James E. Reed of Missouri for the purchase of a site and erection of a new hospital in St. Louis, to take the place of the old Marine Hospital which has been conducted under the auspices of the Public Health Service. An appropriation of \$1,600,000 is requested, and it is reported that the donation of a considerable amount of land will be made to the Government by St. Louis interests in the event that the bill is passed.—The Public Health

Service is also interested in the purchase of the West Baden Hotel at West Baden, Ind., to be operated as a government hospital.—Senator Kenyon of Iowa has favorably reported the bill heretofore passed by the House of Representatives, "for the promotion of vocational rehabilitation of persons disabled in industry." The purpose of this legislation is to enable civilians who have been permanently disabled or injured in industrial pursuits, to learn trades in order to carry on gainful occupations. The measure is similar in character to that providing for soldiers who have been injured in the war. The bill provides for cooperation with the various states and requires that each state shall expend in the work the same amount as that expended by the federal government within that state.—A bill has been introduced by Representative J. S. Webster of Washington which will permit any Surgeon, Assistant Surgeon, or other medical officer of the Public Health Service who resigned for the purpose of entering the army or navy to be restored to his former position in the Public Health Service.

FOREIGN

Work of Zionist Unit.—The report of the American Zionist Medical Unit, a body of about fifty physicians and nurses which began to function in Palestine in 1918, under the leadership of Dr. Isaac M. Rubinow, New York shows that it has established three hospitals, six dispensaries, three bacteriologic laboratories, two training schools for nurses and has organized sanitary squads in Jerusalem, Jaffa, Haifa, Tiberias, and Safed. The unit has also inaugurated a campaign against the mosquito and malaria, and in four weeks the mosquito-infected cisterns of Safed were reduced from 35 per cent. to 5 per cent.

Stammering Children.—There are about 1,200 stammering children attending elementary schools in London. The London County Council, realizing that such children are handicapped in getting employment, is about to organize special classes for them before they leave school. The classes will be started in different parts of London, and teachers, specially qualified for dealing with speech defects, will be appointed. The traveling expenses of children attending the classes will be paid by the council. The children will receive about twenty lessons in speech training.

Help for Foreign Physicians in Need.—The *Ugeskrift for Læger*, Copenhagen, relates: "Committees have been organized in Denmark, Norway and Sweden to aid those suffering most from the war. The aim is to help where the need is greatest, namely, in Austria, in the Baltic countries and in Belgium, and also in Poland and in Germany. It is planned for colleagues to help colleagues or their families, that is, for physicians to help physicians, clergymen to help clergymen, and so on. The plan is to send parcels or money, a package of food, clothing, soap, etc., every week or second week until the end of March, or to offer to take children into one's home. The central committee supplies the addresses of those who have applied for aid, and the aid is extended through the committees or the Red Cross. By this arrangement it is insured that the parcels, etc., will reach the addressees and that there will not be duplication of efforts."

LATIN AMERICA

Organization of the Mexican Medical Association.—Dr. Rosendo Amor E., acting dean of the school of medicine of the National University of Mexico, has been making a trip through various states, organizing branches of the Mexican Medical Association. Branches have already been established at Querétaro, Celaya, Guanajuato, León and Aguascalientes. The officers of the Aguascalientes Society are the following: president, Dr. Francisco C. Macías; secretary, Dr. Manuel I. Rodríguez, and treasurer, Dr. Alfonso M. López.

The Medical Profession in Colombia.—In an editorial in the November issue of the *Repertorio de Medicina y Cirugía*, Bogotá, Colombia, attention is invited to the possible effect on the medical profession of that country, of the new conditions in other countries created by the war. Our contemporary is apparently in fear that the young physicians graduating by the thousand from European and American universities may go to Colombia "in search of peace, freedom and money." The *Repertorio* is especially alarmed at the migration from the United States which it terms picturesquely "the land of the voracious eagle, the stars and stripes" and lays stress on the presence of some American physicians in various Colombian cities and the number of patients who go to Panama to be treated by American physicians.

Government Services

Personnel of the Medical Department

For the week ending Jan. 16, 1920, the medical department of the Army contained 2,117 medical officers, including 1 major-general, 2 brigadier-generals, 167 colonels, 159 lieutenant-colonels, 515 majors, 798 captains and 475 lieutenants. The Medical Reserve Corps contained 4,413 officers, an increase of 65 over the previous week. These were distributed as 2 brigadier-generals, 74 colonels, 276 lieutenant-colonels, 1,257 majors, 1,829 captains and 975 lieutenants. The records of the general staff show 7,539 medical reserve officers as of Jan. 16, 1920. It is explained that these figures are not an absolutely accurate statement of the Reserve Corps as they include about 1,500 of the latest recommendations from which declinations have not been deducted, and do not include a number of recommendations which have been forwarded from the Surgeon-General's Office to the Adjutant-General's Office but which have not yet been acted on in the latter office.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA	MICHIGAN
San Diego—Churchill, J. F.	Detroit—Jackson, H. H.
San Francisco—Cummins, F. A.	MONTANA
Ryan, R. C.	Billings—Clarke, F. B.
CONNECTICUT	NEBRASKA
West Haven—Clarke, R. D.	Pawnee City—Flory, P. J.
ILLINOIS	PENNSYLVANIA
Chicago—Burrows, L. A.	Philadelphia—Loftus, J. E.
INDIANA	Longaker, H. G.
Corydon—Thomas, A. G.	York—Schellhamer, W. H.
LOUISIANA	VIRGINIA
New Orleans—Israel, J. P.	Richmond—Emmett, J. M.
MARYLAND	WASHINGTON
Baltimore—Fear, R. D.	Edwall—Brugman, J. C.

Foreign Correspondence

PARIS

DEC. 18, 1919.

Award of Prizes by the Academy of Medicine

The Academy of Medicine held its annual meeting, December 16, at which the secretary, Professor Achard, read the names of those to whom the academy had awarded prizes for the year 1919.

The Adrien Buisson prize of 10,500 francs, which is given every three years to the originator of the best method of treating recognized diseases that in the present stage of medical science are regarded as incurable, was bestowed on Dr. Sacquépée, agrégé professor at the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce, and on Dr. de la Vergne, of the government military bacteriologic laboratory at Strasbourg.

The Théodore Herpin prize of 3,000 francs is given to the author of the best work on epilepsy and nervous diseases, and was bestowed on Dr. Fernand Netter of Paris.

The Henri Huchard prize of 6,300 francs was awarded to Dr. Clair of Paris for having eminently distinguished himself during the war of 1914-1918 by the care he gave to the sick and wounded.

The Berraute prize (a 3,092 franc 3 per cent bond) was bestowed on Dr. Paine, director of the institute for cancer research in Brompton, and on Dr. Albert Peyron, head of the military laboratory for cancer research in the Hôtel-Dieu, Paris.

The François-Joseph Audiffred prize (a 24,000 franc 3 per cent. bond) is to be given to the person, without provisions as to nationality or profession, who within a time limit of twenty-five years beginning with April 2, 1896, shall have discovered a curative or preventive remedy which shall be recognized by the Academy of Medicine as efficacious or sovereign in the treatment of tuberculosis. This prize was not awarded.

Death of Troisier

Dr. E. Troisier, physician of the Hôpitaux de Paris and agrégé professor of the Paris Faculty of Medicine, died

recently, after a short illness, at the age of 75. Troisier, who was born at Savigny, department of the Ardennes, April 6, 1844, was descended from a family of physicians. His classical study was done in the *lycée* at Reims. Later he came to Paris to study medicine. He was appointed hospital physician in Paris in 1879. He became agrégé professor the following year, at the same time as Joffroy, Landouzy and Raymond. In 1901 he was elected a member of the Academy of Medicine in the section of medical pathology, and for a time was the secretary of the academy. Troisier published a large number of works, some of which have remained classic. His researches on supraclavicular adenopathy in abdominal cancer (1886-1889) have proved to be of great value, and the enlarged supraclavicular gland that sometimes is seen in cancer of the stomach or of the intestine is named the Troisier ganglion after him. He also published researches on pulmonary lymphangitis (1874), cancerous lymphangitis (1874-1901), cancer of the thoracic duct (1897), metapneumonic pleurisy, and other conditions.

Medical Men in Chamber of Deputies

From the standpoint of industries and professions represented, the newly elected chamber of deputies presents quite a different aspect from the chamber of 1914. The number of industrials has almost doubled (fifty in place of twenty-six). The agriculturists are represented by fifty-two instead of nineteen. The legal profession, however, still has a large majority: 140, as compared with 148 who had seats in the chamber of 1914. The representatives of the medical profession have decreased. In 1914 they came right after the lawyers in the point of numbers, holding, as they did, fifty-four seats, whereas the new chamber has only forty-one, with the result that they are exceeded by the capitalists, the industrials and the agriculturists.

A Welfare Society of the Foreign Colonies in France

The Union des Colonies étrangères en France, founded for the purpose of rendering aid to the victims of the war, has just held its fourth general meeting, under the presidency of Walter Berry. Mrs. Edmun L. Baylies, president of the American Committee of New York, was also present. Since the war the union has founded and supported five schools in which crippled and disabled soldiers are trained for some trade or profession, among which schools was that of Maison-Blanche in Neuilly-sur-Marne (*THE JOURNAL*, Jan. 17, 1920, p. 190). The union has collected in gifts and assessments nearly 5,000,000 francs, and has given training to 7,000 men.

The Effects of High Altitudes

At the last meeting of the Academy of Sciences, Dr. Raoul Bayeux submitted an interesting communication in regard to scientific observations that he made during an ascent of Mont Blanc. According to Bayeux, the discomforts of high altitudes are caused by urinary intoxication. A large number of urinalyses made between Chamonix, the village at the foot of Mont Blanc, and Mont Blanc Observatory have shown that the toxicity of the urine increases rapidly among the inhabitants as the higher altitudes are reached. This toxicity is, however, notably decreased if oxygen is injected subcutaneously. Owing to such injections, Bayeux was able to spend eleven days on Mont Blanc at an altitude of 4,400 meters without suffering any ill effects.

Roentgenographic Examination of the Abdominal Viscera

At a recent meeting of the Société médicale des hôpitaux de Paris, Dr. Ribadeau-Dumas exhibited a number of roentgenograms of the abdominal organs (liver, spleen, kidneys, gall-bladder) that were taken after the intra-abdominal injection of oxygen (induced pneumoperitoneum). Remarkably clear plates are thus secured. These injections were found to be harmless and caused no discomfort. Dr. R. Bensaude stated that he preferred to inject simply air with a syringe, and that a high degree of visibility of the abdominal organs is thereby secured. After the roentgenographic examination is over, all that is necessary to do in order to draw out the air is to press on the patient's abdomen. Bensaude has never seen any ill effects from these injections, unless it be an occasional slight painful sensation in the dorsolumbar region.

Diabetes and Exophthalmic Goiter

Dr. Marcel Labbé reported to the Société médicale des hôpitaux de Paris five cases of diabetes associated with exophthalmic goiter. All the different forms of diabetes were to be found associated with the exophthalmic goiter: simple alimentary glycosuria, diabetes without denutrition, diabetes with denutrition, and diabetes accompanied by acidosis,

resulting in death during coma. But this diabetes has certain special features. The glycosuria seems to be less affected by diet than usual. The evolutionary stages of the disease coincide with those of the exophthalmic goiter. At times, crises in the exophthalmic goiter occur, accompanied by extreme tachycardia, pulsations of the goiter, and diarrhea, together with severe polyuria, an increase of the glycosuria, considerable azoturia (from 44 to 48 gm.) and acidosis. Moreover, it was found that acidosis is a very common complication in the diabetes of exophthalmic goiter patients. According to Labbé, the medicaments that act on the goiter act also on the diabetes. Iodin has been found particularly efficacious in treating the two syndromes. Dr. Sicard, however, opposes this view and thinks that iodine aggravates the symptoms of exophthalmic goiter.

LONDON

JAN. 3, 1920.

Sir William Osler

The death of Sir William Osler has cast a gloom over the whole profession. In spite of his years, his activities were so great and his outlook so fresh that we never regarded him as an old man. Great physician, great teacher, great scholar, great writer is how one would sum him up. To certain others, even in his own time, some of these terms can be applied with equal force; but to whom can they all be applied? The name of his great compeer of Cambridge comes to the lips, and we know enough to say (*THE JOURNAL*, Aug. 30, 1919, p. 706) that the comparison would not have been unwelcome to Osler. Though alike in all these qualities, Sir William Osler and Sir Clifford Allbutt differed much and in a way not easy to define. Osler's career was, of course, widely different, and he stood alone in his remarkable influence on medicine in two continents. He seemed to be medicine personified. He combined the backward glance at the achievements of the past with the forward glance of the latest investigations in a fuller measure than any other man excepting the venerable one referred to, with whom comparison seems unavoidable. Above all, there was his winning personality, his single-minded enthusiasm for knowledge, his kindness to his fellow man, whether colleague, student or patient. No wonder, to use his own words, the benediction of friendship followed him like a shadow, and he had the sense of comradeship in work without the petty pinpricks of jealousies and controversies.

As all who read these lines are doubtless familiar with his earlier American career, I will begin with his arrival in England. His reason for leaving Baltimore he gave as follows (*Brit. M. J.*, Jan. 3, 1914): "I had had thirty-one years of uninterrupted hard work. William Pepper, my predecessor in Philadelphia, died of angina at 55. John Musser, my successor, died of the same disease at 53. I had had a good inning, and was glad to get away without a serious breakdown." The intellectual calm of Oxford, where he had ample leisure for his literary and educational work, was a welcome relief after his American life, which had become too strenuous. When in 1905 he succeeded Sir John Burdon Sanderson in the Regius Professorship of Medicine, he brought to a somewhat antiquated school an unrivaled experience of the most modern schools and an enthusiasm for reform. It was, indeed, an ideal appointment. He was then 55 and at the height of his fame. The school was small and in some ways cut off from the other activities of the university. He soon wrought a change. His breadth of learning and manifold activities provided links with other departments. He brought the academic teaching of medicine more fully into touch with practice. He helped to develop the departments of pathology and physiology. At the Radcliffe infirmary he greatly improved the clinical teaching, and combined practice with scientific research and academic exposition as had never been done before. Mainly through his efforts a new clinical laboratory was built. For his antiquarian interests and delight in books, Oxford provided an ideal home. He spent much of his leisure in the famous Bodleian library, of which he was a curator. Of the happiness of his life at Oxford he has often borne testimony. Then came the war and the great blow of the loss of his only son in the field. He bore up bravely and continued his work, immersing himself in all the additional duties which war hospitals provided. But the loss told heavily on him and it has been described as a mortal wound. His presidency of the Fellowship of Medicine was inevitable, for no man was more devoted to the ideal of linking up the English-speaking races or had done so much for it. The open hospitality of his house at Oxford to Americans and other travelers, and his helpfulness

to them will long be cherished as a memory by many. He was always responsive to the appeals of friends abroad, was anxious about wounded sons, and undertook long and fatiguing journeys. While called in consultation in Glasgow he was caught by the railway strike, and undertook a long motor drive from Newcastle to Oxford. He arrived ill. For three months he suffered from bronchitis and pneumonia of an ill-defined type. An operation for empyema became necessary just before Christmas and seemed to promise favorably, but he died suddenly, Dec. 29, in his seventy-first year. A large and representative gathering attended the funeral service, which took place at Christ Church Cathedral, Oxford. Among the chief mourners were Lady Osler, Dr. W. Francis, Mrs. Henry Chapin, Sir Archibald Mellock, Miss Emmons and Mr. and Mrs. Frank Osler. In the congregation were the vice chancellor; the senior and junior proctors; Sir Frederick Treves; Prof. G. H. F. Nuttall; Prof. Sir T. Clifford Allbutt; Sir Norman Moore, representing the Royal College of Physicians; Sir H. D. Rolleston, representing the Royal Society of Medicine; Colonel Harvey, representing the director-general of the army medical service; Sir George Perley, representing the high commissioner for Canada; Dr. W. Collier, representing the British Medical Association; Dr. E. J. Woods, representing the Association of American Physicians; Mr. E. Maclean, representing the American University Union in Europe; Lieut.-Col. G. W. Badgeron, representing the Academy of Medicine and the University of Toronto, and Col. J. G. Adami, chancellor of the University of Liverpool. The body was taken to London for cremation.

Panel Physicians Demand Increased Remuneration

The great increase in the cost of living—amounting to more than 100 per cent.—has led to an increase of physicians' fees. Recently the British Medical Association decided that medical fees should be increased by 50 per cent. The turn has now come of panel physicians who work under a fixed capitation fee of about \$1.50 per insured person. The Insurance Acts Committee of the British Medical Association has decided that under present circumstances \$3 is the lowest capitation fee that can properly be accepted for an effective service. A conference on the subject has been held between representatives of the association and Dr. Addison, minister of health. Sir Clifford Allbutt, president of the association, stated that the parallel to the present insurance practice was the club practice, in which the average capitation fee was \$1. In some cases the service was poor, but in others expensive drugs were used and the service on the whole was not unsatisfactory. The club physician, however, did not entirely depend on his clubs for a living, and not infrequently this part of his work resulted in a loss. With the passing of the insurance act the capitation fee had to be regarded in the majority of cases as a sum which would provide reasonable remuneration for a physician whose insurance patients occupied the greater part of his time. They had now to consider: (1) the fall in the value of money, and (2) the increased demand on the physician and the improved standard of work. In his experience in consulting practice, a patient required an hour's time for work for which twenty years ago a quarter of an hour would have been ample. He also referred to the increased cost of medical training, and emphasized the need of a good standard of remuneration in order to attract young men of the best type.

In replying, the minister of health recognized that there were increasing demands for an improved standard of service and that an impetus had been given to these demands by the illustration afforded by the war of what could be done by medical science. As a remuneration, there was no possibility of hoping to satisfy extremists, but he would do his best for the fair-minded man with a proper professional standard. Whatever might be the ideal arrangement, regard must be had to the state of the public finances. He did not think that the case for a \$3 capitation fee had been made out. A distinction must be drawn between the percentage increase of the wages of the laboring classes (which must almost inevitably go in actual expenditure on food) and the case, for example, of men in the civil service receiving an income more or less comparable with that of an average physician. There was a case for a substantial increase over the prewar fee, and the new fee must be one which would give a good average physician, fairly doing his duty, what he himself would feel would pay him.

Close of the Belgian Physicians' and Pharmacists' Relief Fund

A meeting of the constituents of this fund was addressed by Dr. V. Pechère, president of the Belgian National Relief Committee for Physicians and Pharmacists, which during the

war distributed at Brussels the money received from the British and other funds. He told how during the war the Belgian committee many times tried to send to England its regular reports but were prevented by the Germans. At the end of August, 1914, when it heard of the destruction and the atrocities committed in eastern Belgium by the Germans, the committee tried to establish a committee to succor their *confrères sinistrés*. But it was difficult to get any exact information as to what had happened, because of the German regulations, which rendered traveling almost impossible. There was no postal service, much less telegraph or telephone. It was the beginning of the prison régime. The committee got by subscription in Belgium 180,000 francs, from foreign lands 100,000 francs, and from England \$135,000. With this sum it was able to save 140 families, more than 400 persons. One of the reasons for help was the disappearance of the head of the family.

Operation Amid Flames

The king has decorated with the Albert medal Capt. Charles Hoskyn. On the occasion of a railway accident in France, a man was pinned down by the leg under heavy girders. The wreckage was on fire and the flames had reached his ankles. Captain Hoskyn crawled into a cavity in the flaming wreckage, released one of the man's legs, amputated the other, and assisted in bringing the poor fellow out alive, retaining hold of the main artery until a tourniquet could be applied.

The Cost of Tuberculosis

The annual report of the Local Government Board, just issued, deals fully with the work carried out on tuberculosis. The number of beds provided by local authorities in sanatoriums and hospitals has increased from 1,500 in 1911 to 7,038. The number of dispensaries provided has increased from thirty to 349. In addition, four large sanatoriums, containing in all 650 beds, will soon be available. The gross expenditure by local authorities on the treatment of tuberculosis from July 15, 1912, to March 31, 1919, is estimated to have exceeded \$25,000,000. Efforts have been made to handle the cases of the tuberculous ex-soldier and sailor and the organization is on a better footing than while the war lasted. In addition, the board has approved of four training colonies where consumptives can be taught suitable occupations.

GUAYAQUIL

Dec 10, 1919.

Leishmaniosis in Ecuador

Dr. Alfredo J. Valenzuela V., professor of internal pathology at the University of Guayas, presented before the physicians and medical students of this city two cases of leishmaniosis confirmed bacteriologically by Dr. José D. Moral. The cases were very interesting because of their having been confirmed microscopically and having responded to the specific treatment.

Sanitary Conditions

For the last six months there has not been a case of yellow fever. Dr. M. E. Connor of the Rockefeller Foundation is continuing his campaign against the mosquitoes that carry yellow fever.

Dr. León Becerra, director of sanitation, in association with Dr. Connor has just begun a campaign against hookworm disease, which is prevalent in this country.

Personal

After having accompanied General Gorgas and Colonel Lyster on their trip in Central America to study yellow fever conditions, Dr. W. Pareja, one of the quarantine physicians of this port, who also belongs to the Rockefeller Foundation, has returned to this city.

VIENNA

Dec. 18, 1919.

Effects of the War on General Health in Vienna

The five years of war, together with the deplorable tragedy of the few months of so-called peace, have had a most detrimental effect on the general condition of the population of this city. More than 2,000,000 people, over 30 per cent. of the entire population of this new state, are dependent on outside supplies of food and fuel, which in peace times were furnished in abundance, but now are lacking every day more and more. The striking feature in the life of the city is the scarcity, or rather absence, of young children on the streets. The birth rate from 1918 to 1919 was less than 30 per cent. of the figure for 1914. Another, most visible, feature is the leanness

of the people. Formerly, a certain stoutness of the middle-aged persons, especially the women, was noticeable. The vast majority of the population have lost over 15 per cent. of their weight, many even much more. This is due to the hardly credible reduction in the supply of food, with which the Viennese have to cope. The qualitative and quantitative food values are so low that the calculated minimum of calories of 2,300 a day is never reached by the ration allowed by the government to each inhabitant. Lately this figure fell to 1,270. The effect is the visible undernutrition of the population, especially of children and the aged. The official report of the board of health of Vienna states that in 1914 the mortality rate was 16.25 per thousand of population (33,258 deaths). In 1918 it was over 26 per thousand (52,492 deaths). In 1914, tuberculosis was responsible for 6,223 deaths; in 1918, the figure went up to 11,531. So far in 1919, more than 12,000 persons have died from this disease. Thus, aside from emigration, which has assumed such proportions that one can speak with truth of the flight from Vienna (everybody in a position to do so has moved elsewhere), the population is constantly decreasing because of natural causes. The last few years have furnished an experiment on a large scale as to the lowest amount of food with which life can be continued. It has been proved that 3,000 calories, the figures given heretofore, are incorrect. They are much too high, for the amount of food consumed by the general population here, though far below that margin, has kept us alive and fit for work to a moderate degree, at least.

The condition of the new-born and of children up to 4 years has been studied by Dr. T. Weiss, who has found that 90 per cent. of all children born in the last three years show more or less marked signs of rickets; especially is this true of those born after 1917. The weight of all young babes was from 15 to 20 per cent. under normal. The older children were up to 33 per cent. under normal, so that a 4 year old child looked like a 2 year old. Even the children 9 or 10 years of age look as if they were only 6 or 7. These figures pertain to the poorer and middle classes. Among the rich, children show a little more favorable condition, but there, too, the quality of the food has not been satisfactory, in spite of wealth, for good food was and is not as yet obtainable at any price. Even children of the wealthy are rickety, anemic and weakly, although in better shape than the children of the poorer classes.

The inadequate nutrition of adults could also be easily recognized in a large number of cases by signs of bone diseases rarely encountered in normal times. Thus osteomalacia was frequently seen in the hospitals, not only in females, but also in males. Cases of obstinate "rheumatism," of "back-ache," of "colds" were disclosed by exact investigation to be due to softening of bones, produced by lack of calcium in the system. The diet often was entirely lacking in fat, and consisted principally of vegetarian products—cabbage, beets, and similar vegetables, not used as an exclusive diet except in times of stress. Furthermore, so-called "hunger edema" has been often noted in hospitals. Patients came with general anasarca, which, however, soon disappeared on administration of food containing vitamins. A marked decrease of diseases of the digestive organs has been evident, especially as regards the inflammatory and catarrhal type; also gout and diabetes have been less frequent. Dermatoses and furunculosis have been very annoying lately; especially scabies has become a real scourge. Arrangements have been made in our general hospitals for antiscabies treatment on a large scale. Wilkinson's compound sulphur ointment is the universally adopted remedy, followed by a zinc application. The body of the patient is well rubbed with this ointment. He is then given a soap bath, which treatment is repeated three times within two hours. Meanwhile the linen and the clothing of the patient are disinfected by a vapor process. By means of this rapid cure, hundreds of cases are dealt with daily.

A frequent figure in hospitals as well as in the practitioner's office is the war invalid. The total figure for the crippled and disabled soldiers of the former Austro-Hungarian army is placed at 380,000, which includes the blind, the deaf, the diseased and the mutilated. Of this total, about 120,000 fell to the lot of the present Austrian Republic. Needless to say, the majority of these men are in the capital and demand the more or less constant care of skilled medical men. They take up a large percentage of the hospital beds. Therefore, an invalids hospital has been established, and the former military hospitals have been turned over to a committee for the care of war cripples and invalids. A special orthopedic hospital under Professor Spitzky is in full working order in Vienna, and is supplied with all the most up-to-date appliances for the care of the armless or otherwise crippled per-

sons. A visit to Vienna just now would be worth while for the American physician. Aside from the food problem, which the American Mission or the American embassy here would no doubt help citizens of the United States to solve, life would be very cheap here, as one dollar is now equivalent to nearly 200 kronen, or forty times its peace value. The prevailing prices, however, are only twenty times those of peace times. There is a good deal of medical work to be seen and much to be learned here at present along the line of special plastic surgery, pediatrics, chemistry and general pathology. Details will be given in a following letter.

The conditions affecting the general practitioner are now undergoing a transformation. Owing to ideas creeping in from Russia and Hungary, where socialistic methods and institutions have to a large degree interfered with the physician and his work, certain changes seem inevitable. Thus, the socialization, that is, the absolute control by the state of the physician and his time, place and method of work, was at one time contemplated by our government. Only the unanimous opposition of the profession, which an almost universal organization made possible, has averted the danger thus far. But a strict and continuous watch over affairs is necessary.

BUENOS AIRES

DEC. 6, 1919.

New Plan for Medical Teaching

One of the changes made by the new national plan of studies in the laws relating to universities prescribes that no profession shall require more than six years of study. Though there was some doubt as to the legality of this provision since the right to legislate on these subjects belongs to Congress, this measure has been accepted. The board of directors of the school of medicine has just approved a plan of reforms according to which the study of medicine will take only six years. The plan to distribute the studies in five periods was rejected, the distribution in years being approved instead, with compulsory examinations. Several specialties will be studied now in a semester (really four months) instead of a year. In view of local habits the plan has not been received with much enthusiasm by the students who favor the seven years period heretofore in force. The age of retirement for professors has been fixed at 65 years. There has been proposed the establishment of several new chairs: infant surgery and orthopedics, and the branching off of pharmacodynamics and therapeutics.

Influenza in Young Children

The Society of Pediatrics has held a sort of miniature congress devoted to the study of the latest epidemic of influenza among infants. The various speakers called attention to the fact that the disease attacks also little children (Dr. Elizalde), and that the influenzal bronchopneumonias are less serious than those due to measles or whooping cough (Dr. Centeno). There have been observed some cases of miliary bronchopneumonia that simulated miliary tuberculosis (Dr. Bacigalupo). All agreed as to the worthlessness of the pneumococcic vaccine called haptinogeno neumo of Dr. Méndez.

The Rockefeller Foundation Commission

The University of Tucuman has asked—and its request has been successful—that the Rockefeller Foundation Commission send a medical commission to study malaria and its prophylaxis in the province of Tucuman.

Marriages

LUCIUS WILLIAM CASE, Pomona, Calif., to Miss Jennie M. Flanner of Jackson, Mich., at Pomona, January 1.

WILLIAM HENRY MACKAY, Philadelphia, to Miss Florence M. Gompers of Washington, D. C., December 25.

MALFORD WILCOX THEWLIS, Wakefield, R. I., to Miss Christiane Cherfils of Paris, France, December 10.

ROSWELL TALMADGE PETTIT, Ottawa, Ill., to Miss Dorothy Blatchford of Oak Park, Ill., January 16.

HENRY JACKSON, JR., Baltimore, to Miss Isabella Dove Lee of Chestnut Hill, Boston, January 3.

HAROLD FREDERICK LANSHE to Miss Elizabeth B. Taylor, both of Allentown, Pa., recently.

HARRY S. BERMAN, Detroit, to Miss Caroline Block of Gordonsville, Va., December 23.

Deaths

William Samuel Gottheil ☉ New York City; College of Physicians and Surgeons in the City of New York, 1882; aged 60; a specialist in dermatology; professor of dermatology in the New York School of Clinical Medicine; a fellow of the New York Academy of Medicine; a member of the American Dermatological Society; dermatologist to the City and Lebanon hospitals, New York City; consulting dermatologist to Beth Israel, Washington Heights, Jewish Maternity, and Rockaway Beach hospitals, and the Hospital for Deformities and Joint Diseases, New York City; died January 7, from heart disease.

Wallace Edgar Sabin ☉ Lieut., M. C., U. S. Army (retired), Anna, Ill.; College of Physicians and Surgeons in the City of New York, 1868; aged 74; contract surgeon, U. S. Army from December, 1869, until September, 1892, and from 1898 to 1908; commissioned first lieutenant, Medical Reserve Corps, July 7, 1908, and first lieutenant, Medical Corps, May 22, 1909, and retired by operation of law, June 7, 1909; a member of the Association of Military Surgeons of the United States; died at the home of his brother, January 10, from angina pectoris.

Charles Philip Pinckard, Chicago; Harvard University Medical School, 1889; aged 55; a member of the Illinois State Medical Society; a specialist in diseases of the eye; and one of the founders of the Chicago Ophthalmological Society; attending ophthalmologist to Michael Reese Hospital and the dispensary of that institution, and to the Home for Crippled Children; died January 17, from heart disease.

Hilary M. Christian ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1882; aged 61; professor of genito-urinary diseases in his alma mater; a member of the genito-urinary staff of the German Hospital; formerly clinical professor of surgery in the Medico-Chirurgical College of Philadelphia; died in the Presbyterian Hospital, Philadelphia, January 7.

Emma Valeria Pintard Bicknell Culbertson ☉ Boston; Woman's Medical College of Pennsylvania, Philadelphia, 1881; aged 65; a member of the American Academy of Medicine; a specialist in surgery and gynecology; attending surgeon to the New England Hospital for Women and Children, Boston, since 1883; died in St. Petersburg, Fla., January 9.

Richard Justus Swoboda ☉ Philadelphia; Medico-Chirurgical College of Philadelphia, 1906; aged 36; associate professor of chemistry and toxicology in Temple University, Philadelphia; for nine years a district physician under the department of health and charities; died January 3, from a nervous breakdown.

Byron H. Phelps, Corry, Pa.; Western Reserve University, Cleveland, 1871; aged 75; consulting surgeon to the Corry Hospital; formerly mayor of Corry and president of the local board of health; while crossing the railway tracks at Spartansburg, Pa., January 5, was struck by a train and instantly killed.

Britton Duroc Evans ☉ Greystone Park, N. J.; College of Physicians and Surgeons, Baltimore, 1885; aged 61; medical director of the New Jersey State Hospital, Morris Plains; a medicolegal expert in insanity and mental diseases; once president of the Morris County Medical Society; died January 14.

Laura House Branson ☉ Iowa City; State University of Iowa, Iowa City, 1885; aged 50; formerly a member of the staff of Mercy Hospital, Iowa City, and president of Johnson County Medical Association, and the Iowa Women's Medical Society; died at the home of her daughter in Oklahoma City, January 11.

John Willcheur Barnes, Columbus, Ohio; Cincinnati College of Medicine and Surgery, 1889; aged 56; formerly demonstrator of anatomy and later professor of practical anatomy in the Medical College of Ohio, Cincinnati; died January 1, from diphtheria.

Henry Neill Dickson ☉ Paragould, Ark.; Vanderbilt University, Nashville, Tenn., 1889; aged 52; pathologist and physician to the Paragould Sanitarium; died in St. Louis, December 7, from peritonitis following rupture of the gall-bladder.

Joseph Eugene Rolly Ellis, Grafton, W. Va.; Bellevue Hospital Medical College, 1895; aged 48; a member of the

West Virginia State Medical Association; a veteran of the war with Spain; died December 22, from heart disease.

Dudley W. Stewart, Los Angeles; Northwestern University Medical School, Chicago, 1861; aged 83; a pioneer practitioner of Southern California; surgeon of United States Volunteers during the Civil War; died about January 1.

David S. Alverson, Vicksburg, Miss.; Memphis (Tenn.) Hospital Medical College, 1899; aged 44; a member of the Mississippi State Medical Association; was shot and killed, it is believed, by the husband of a patient, January 5.

Franklin Loder, Logansport, Ind.; Indiana Eclectic Medical College, Indianapolis, 1890; aged 55; died in St. Joseph's Hospital, Logansport, December 30, from the effects of poison, taken, it is believed, with suicidal intent.

George William Fox ☉ Milwaukee; Rush Medical College, 1897; aged 44; a well known surgeon of Milwaukee; for many years a member of the staff of St. Mary's Hospital; died January 8, from bronchopneumonia.

Frank C. Stewart, Indianapolis; Hahnemann Medical College, Chicago, 1886; aged 66; a member of the Medical Corps of the Indiana National Guard during the war with Spain; died January 1, from paralysis agitans.

Albert Chenoweth, Bushnell, Ill.; Rush Medical College, 1872; aged 71; formerly a surgeon in the Army, serving with General Reno at the time of the Custer massacre; died January 2, from cerebral hemorrhage.

Arthur Joseph Lance ☉ Portsmouth, N. H.; University of Vermont, Burlington, 1893; aged 49; a member of the American Academy of Ophthalmology and Oto-Laryngology; died January 4, from cerebral hemorrhage.

Oscar Wilhelm Carlson, Milwaukee; Hahnemann Medical College, Chicago, 1872; aged 76; a practitioner for fifty-four years; a veteran of the Civil War; a member of the staff of St. Mary's Hospital; died January 7.

Charles Freemont Darnall ☉ Llano, Texas; Rush Medical College, 1882; aged 63; secretary of the Llano County Medical Society, and city health officer; died December 2, from chronic bronchitis.

Alfred Manic Sharrocks, Syen Chyun, Chosen, Korea; Cooper Medical College, San Francisco, 1899; aged 47; died in Rochester, Minn., December 25, from atrophic cirrhosis of the liver.

Monroe Jacob Holben, Slatington, Pa.; Hahnemann Medical College, Philadelphia, 1875; aged 69; a member of the town council of Slatington; died December 17 from neurasthenia.

Laris P. Torrence ☉ Blakesburg, Iowa (license, Iowa, year of practice, 1886); aged 72; a practitioner for forty-five years; died in Ottumwa, Iowa, January 8, after a surgical operation.

Elbridge Olin Kinne, Syracuse, N. Y.; University of Michigan, Ann Arbor, 1878; aged 67; consulting physician to the Homeopathic Hospital; died January 4, from heart disease.

Charles Russell Cavanagh, Boston; Harvard University Medical School, 1892; a member of the Massachusetts Medical Society; died at his home, in Dorchester, Boston, recently.

John T. McClanahan, Boonville, Mo.; Eclectic Medical Institute, Cincinnati, 1874; aged 66; at one time a member of the state medical board of Missouri; died January 1, from paresis.

Lewis Calvin Emenhiser ☉ Indiana Harbor, Ind.; Chicago College of Medicine and Surgery, 1915; aged 32; died in the Presbyterian Hospital, Chicago, January 2, from encephalitis.

Frank Merle Dryden, Chicago; University of Illinois, Chicago, 1919; aged 30; died in Wesley Memorial Hospital, Chicago, December 28, from septicemia following a carbuncle.

Henry L. J. Hille, Roaring Spring, Ky. (license, examination and twenty-three years practice, 1894); aged 69; died at the home of his son-in-law, January 3, from heart disease.

James E. Morrison, Boulder, Colo.; Hahnemann Medical College, Chicago, 1866; aged 85; for many years a practitioner of Paxton and Urbana, Ill.; died January 1.

Benjamin Sindel ☉ New York City; Long Island College Hospital, Brooklyn, 1907; aged 34; assistant surgeon of the Gouverneur Dispensary; died January 7.

Carl Elias Dufft, Mount Vernon, N. Y.; College of Physicians and Surgeons in the City of New York, 1881; a well known vocalist; died January 9.

Claudius G. Barlett, Lewisville, Ind.; Medical College of Ohio, Cincinnati, 1877; aged 64; a member of the Indiana State Medical Association; died, December 28, from arteriosclerosis.

Francis Thornton Buckner, Kansas City, Mo.; Bellevue Hospital Medical College, 1865; aged 83; a Confederate veteran; died in a hospital in Kansas City, December 27.

Harry Wadsworth Dorman, St. Petersburg, Fla.; Western Reserve University, Cleveland, 1881; aged 67; for many years a practitioner of Ashtabula, Ohio; died January 4.

Homer Corbly Rice, New Freeport, Pa.; University of Pittsburgh, 1897; aged 50; a member of the Medical Society of the State of Pennsylvania; died December 24.

Ralph W. Connell, Omaha; Pulte Medical College, Cincinnati, 1882; aged 60; formerly health commissioner of Omaha; died January 3, from heart disease.

Edwin Alphonso Carpenter, Baileyville, Ill.; Rush Medical College, 1875; aged 73; a practitioner for 52 years; a veteran of the Civil War; died December 31.

Charles T. Morel de la Durantaye, Bourbonnais, Ill.; Ecole de Médecine et de Chirurgie, Montreal, 1888; aged 61; died January 5, from heart disease.

Daniel Heard Brook, Lieut., M. C., U. S. Army, Travis, Texas (license, Texas State Board, 1907); died December 22 from chronic interstitial nephritis.

Homer Andrew Bushnell, North Adams, Mass.; Albany (N. Y.) Medical College, 1905; aged 41; died in a sanatorium at Westfield, Mass., December 31.

Edward William McBirney, Willet, N. Y.; University of the City of New York, 1875; aged 69; health officer of Cortland County; died December 19.

Ezra Albert Scammon, Columbus, Kan.; University of Michigan, Ann Arbor, 1867; aged 76; also a druggist; died December 30, from pneumonia.

Addison Marshall Clark, Youngstown, Ohio; University of Pennsylvania, Philadelphia, 1880; aged 62; died December 22, after a surgical operation.

Jennie Lind Phillips Thompson, Chicago; University of Illinois, Chicago, 1898; aged 51; died January 4, from cerebral hemorrhage.

John Pressly Logan, Ottawa, Kan.; Medical College of Ohio, Cincinnati, 1867; aged 77; died January 1, from cerebral hemorrhage.

Theophilus W. Hunter, Quitman, Ga.; Jefferson Medical College, 1876; aged 68; died in a sanitarium in Atlanta, December 13.

Frank A. Maguy ♂ Chicago; Hahnemann Medical College, Chicago, 1890; aged 61; died December 29, from bronchial pneumonia.

W. S. Barton, Orangeburg, S. C.; Reform Medical College, Macon, Ga., 1860; aged 81; died November 23, from pleuropneumonia.

Franklin Bennett, Brooklyn, N. Y.; University of the City of New York, 1875; aged 70; died December 28, from pneumonia.

John Delmayne Hanson ♂ Donaldsonville, Ind.; Tulane University, New Orleans, 1880; aged 70; died about January 5.

Edgar Henry Byers, Philadelphia; Jefferson Medical College, 1889; aged 54; died January 7, from a nervous breakdown.

Thomas E. Russell, Paducah, Ky.; University of Louisville, Ky., 1886; aged 58; died December 31, from paralysis.

John Milton French ♂ Silsbee, Texas; University of Nashville, Tenn., 1903; aged 41; was found dead, December 11.

Leonora Elma Knerr, Indianapolis; Medical College of Indiana, Indianapolis, 1898; aged 68; died December 14.

Oscar M. Long, Columbia, Mo.; University of Louisville, Ky., 1892; aged 50; died December 29 from tuberculosis.

Almanzer Ronelson Howard, Canton, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 59; died December 23.

James Hamilton Cummins, Newark, N. J.; Bellevue Hospital Medical College, 1890; aged 57; died December 4.

Howard Judson Denovan, Stettler, Alta.; Trinity Medical College, Toronto, 1892; aged 51; died November 16.

Abel Roberts Wilson, West Albany, Ala. (license, Lawrence County, Ala., 1885); aged 82; died December 22.

Frank Duncan, Paxton, Ill.; Hahnemann Medical College, Chicago, 1875; aged 71; died January 1.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

APOTHESINE

Report of the Council on Pharmacy and Chemistry

Apothesine is a synthetic drug for producing local anesthesia, made by Parke, Davis & Company. In the fall of 1917 the Council wrote to Parke, Davis & Company offering its aid in establishing the identity, purity, and therapeutic efficiency of this synthetic local anesthetic with the ultimate object of accepting the product for inclusion in New and Nonofficial Remedies should the facts warrant such acceptance. The Council's letter was never acknowledged. After Apothesine was put on the market the Council desired to accept it for inclusion in New and Nonofficial Remedies but, unfortunately, was unable to do so because some of the claims made for the product were not justified by acceptable evidence. The manufacturers were notified of the Council's desire to admit this product to N. N. R. and the wish was expressed that the company would either so modify its claims as to make the product acceptable under the Council's rules or else would submit evidence to the Council in proof of the claims made and thus permit the Council to revise its conclusions. Parke, Davis & Company were, apparently, either unwilling or unable to submit evidence that would sustain their claims; neither did they offer to modify the claims themselves. The product, therefore, is ineligible to inclusion in New and Nonofficial Remedies; it will, however, be listed in the "Described But Not Accepted" department of New and Nonofficial Remedies. The report on Apothesine that follows has been authorized for publication.

W. A. PUCKNER, Secretary.

Apothesine, "the hydrochlorid of diethyl-amino-propyl-cinnamate," is an efficient local anesthetic. It belongs to the procain rather than to the cocain type, that is, it belongs to that type which, while effective for injection anesthesia (especially when combined with epinephrin) is relatively inefficient when applied to mucous membranes. Apothesine may also be used for spinal anesthesia. Its absolute toxicity is less than that of cocain (as 20 is to 15, see table below) but about twice that of procain (as 20 is to 40, see table below). It is non-irritant, is easily soluble and makes a stable solution so that it may readily be sterilized.

The Council took exception to certain claims made by Parke, Davis & Company for their product on the ground that these claims were not supported by acceptable scientific evidence. One of the claims was that Apothesine is applicable in any case in which any other local anesthetic is used. This statement, made in many advertisements, is distinctly misleading as used. When applied to mucous membranes Apothesine is far inferior to cocain and to some other local anesthetics, yet the claim obviously suggests that Apothesine is an efficient substitute for any local anesthetic.

The manufacturers claimed, too, that Apothesine is as potent as cocain. The claim would lead the physician to think that Apothesine had the same anesthetic potency as cocain in solution of equal strength. This statement, so far as it refers to the drug when applied to mucous membranes, is not in accord with the facts and is true for injection anesthesia only when stronger solutions are used. The only support for the claim of equal efficiency appears to be the experiments with intracutaneous injections made by H. C. Hamilton¹ in Parke, Davis & Company's laboratory. These

1. The Comparative Values of Some Local Anesthetics by H. C. Hamilton, Detroit, Mich., from the Research Laboratory of Parke, Davis & Co., J. Lab. & Clin. M. 4: 60 (Nov.) 1918.

differed considerably from the results of Sollmann.² A further series of experiments were made by Sollmann to compare still further the diverse results previously reported by him and Hamilton. The latest series, while showing considerable variations in the susceptibility of different skin areas, especially toward Apothesine, demonstrated in every case that the efficiency of Apothesine is unmistakably lower than that of cocain, being at best one half. The series also showed that the potency of Apothesine was never greater than procain and averaged considerably below it.

Another claim made for Apothesine which the Council holds is not supported by evidence is that of superior safety. This claim is made on the basis of hypodermic injections in guinea-pigs carried out in the laboratory of Parke, Davis & Company. Such experiments prove little because of the fact—well known to laboratory workers—that the use of rodents in toxicity tests made by injecting a drug into the subcutaneous tissues does not give a reliable index of the relative toxicity of such a drug for man. This is due partly to the peculiar resistance of rodents to poisons and partly to the great importance of the rate of absorption. The organism destroys most local anesthetics so rapidly that the rate of absorption is more important than the absolute dose. The absorption from hypodermic injections into guinea-pigs differs, of course, from that in clinical accidents, especially where the drug has been applied to mucous membranes. One cannot, therefore, reliably estimate the degree of clinical danger on animals.

It has been shown that when toxicity tests of local anesthetics are made on cats these animals seem to respond to the drugs in a manner more closely approximating humans and it is a suggestive fact that the more toxic of local anesthetics, as shown by tests on cats, have been found the most dangerous in clinical use. The *absolute* toxicity of Apothesine has been measured by Eggleston and Hatcher³ by the intravenous injection in cats. The fatal doses, in terms of milligrams per kilogram ranged as follows:

Alypin, Holocain.....	10
Beta Eucain.....	12.5
Cocain	15
Apothesine	20
Tropacocain	20—25
Stovain	25—30
Nirvanin	30—35
Procain	40—45

The *absolute* toxicity of Apothesine is, therefore, only a little lower than that of cocain, and is twice as great as that of procain. The *clinical* dangers cannot be predicted by either method, since clinical accidents depend, in most instances, on idiosyncrasies, or the technic of application.

DIAL "CIBA"

Report of the Council on Pharmacy and Chemistry

Dial "Ciba" has not been accepted for "New and Non-official Remedies" because, as the report which follows shows, unwarranted claims are made for the product. It is a definite new chemical compound which might be made eligible for N. N. R. if misleading therapeutic claims were eliminated. The Council directed that Dial "Ciba" be included with Articles Described but Not Accepted, so that physicians might be informed with regard to its character and properties.

W. A. PUCKNER, Secretary.

Dial "Ciba" is a hypnotic manufactured by the Society of Chemical Industry of Basle, Switzerland, and is sold in the United States by A. Klipstein and Company, Inc., New York. Chemically, Dial "Ciba" is diallylbarbituric acid and is,

therefore, closely related to diethylbarbituric acid or barbital ("veronal").

The claims made for Dial "Ciba" are (1), that the "allyl" group in its molecule makes it more readily decomposed by oxidizing agents than barbital, which contains the "ethyl" group; (2) that because of this ease of oxidation, it is more readily decomposed in the body and more rapidly and completely eliminated, and (3) that because of its alleged rapid elimination, it is devoid of the after effects of barbital and other hypnotics.

The Council took up the substance in February, 1918, and referred the matter to the referee in charge of barbital preparations. The referee considered unwarranted the claim that Dial "Ciba" did not have the after-effects of other hypnotics due to its alleged total decomposition in the body. The American agents, A. Klipstein and Company, were informed of the referee's objections. Their attention was also called to the fact that, notwithstanding the claimed absence of after-effects in one part of the advertising, other parts of the same advertising admitted certain post-hypnotic effects of the product. It was pointed out also that while it was claimed in one of the advertising circulars that lowering of the blood pressure is never observed after administration of Dial "Ciba," yet two of the authors quoted in the same circular definitely stated that a lowering of the blood pressure followed even small doses of the drug and these authors warn against this very danger in certain conditions.

A year later, a circular letter sent out by A. Klipstein and Company reiterated the claim that the asserted decomposition of Dial "Ciba" in the body prevents after-effects, the drug being still contrasted with barbital ("veronal"). In view of the reiteration of this highly improbable claim, the referee undertook to study the comparative action of Dial "Ciba" as compared with other hypnotics. It was found that the actions of Dial "Ciba" are not distinguishable, qualitatively, from those of barbital, there being no perceptible difference in the after-effects or in the nature of the side actions. In toxic doses, both caused profound depression with the temperature falling to that of the room (or about one degree above), the respiration being extraordinarily slow and shallow as one would expect with lowering of the temperature. There were also the same evidences of nausea that are so frequently seen after toxic doses of the various hypnotics of this group. In view of these results, the Council declared that it is unwarranted to claim freedom from after-effects for Dial "Ciba."

The Council held that the following statement is unwarranted:

"The therapeutic field for Dial 'Ciba,' as shown by tests on rabbits, is just as broad as the field for Diethylbarbituric Acid."

Tests on rabbits do not and cannot show the breadth of the therapeutic field for a hypnotic. The Council also declared the following statement improbable, and contrary to the evidence obtained by the referee:

"In dogs, the increase of dosage beyond the therapeutic dose to the point of death is decidedly in favor of Dial 'Ciba,' which required a larger dose [than diethylbarbituric acid] to produce death."

The referee's experiments on cats show that Dial "Ciba" is several times as toxic as hydrated chloral, and more than twice as toxic as diethylbarbituric acid (barbital).

Since the circular to which objection was made in 1918 was still being sent out in December, 1919, the Council held Dial "Ciba" inadmissible to N. N. R. and voted that report of its action in the matter be authorized for publication. The Council further directed that Dial "Ciba" be included with Articles Described but Not Accepted.

Diphtheria Carriers.—The person attending the patient should wear a double layer of gauze or other soft thin cloth across the mouth and nose as a face mask whenever near the patient so as to prevent the droplets containing the germs coming from the patient's mouth from entering and lodging on the mucosa of the mouth and throat of the attendant. Even though you may not contract the disease if the bacteria lodge in your throat, they may grow there and you may act as a carrier and thus spread the disease to others.—Keep Well Series No. 4, U. S. P. H. S.

2. Comparative Efficiency of Local Anesthetics, V, by T. Sollmann, from the Pharmacological Laboratory of the School of Medicine, Western Reserve University, J. Pharmacol. & Exper. Therap. **11**: 69 (Feb.) 1918.

3. A Further Contribution to the Pharmacology of the Local Anesthetics by Eggleston and Hatcher, from the Department of Pharmacology, Cornell University Medical College, New York City, J. Pharmacol. & Exper. Therap. **13**: 433 (Aug.) 1919.

Correspondence

"AMPUTATION ABOVE THE LEVEL OF ARTERIAL OBSTRUCTION IN ARTERIOSCLEROTIC GANGRENE"

To the Editor:—In THE JOURNAL, Dec. 6, 1919, p. 1760, Drs. Eisendrath and Bettman suggested that in arteriosclerotic gangrene (thrombo-angitis obliterans) it would be advisable to amputate above the level of arterial obstruction, such obstruction to be determined by preliminary exposure of the femoral artery. It is recommended that the artery be ligated in its pulsating portion, and that amputation be performed at the same level. Reference is made to a case in which this was done, and diagrams show the presence of a thrombus in the common femoral artery and the point of ligation above the thrombus just below Poupart's ligament. In spite of the high amputation, there was some gangrene of the flaps.

This condition is one in which the surgeon after the operation frequently feels that whatever may have been the level he has chosen for the amputation, he has erred. If he obtains primary union without gangrene of the flaps, he wonders if possibly he has not made his amputation too high; and if gangrene of the flaps results, he thinks he should have amputated at a higher level.

In an amputation of the thigh below the hip, the question of a few inches more or less of stump is of extreme importance. It is generally conceded that amputation higher than 3 inches below the great trochanter is almost worse than useless from the standpoint of hip motion of an artificial limb, so that the surgeon should in every case make a strenuous effort to get a stump of satisfactory length. I have amputated in the middle of the thigh, and have been compelled to reamputate a few inches of stump because gangrene of the flaps did not leave sufficient skin to cover over exposed bone; but even after the secondary operation, the length of the stump was satisfactory. Sight is lost of the fact that this is a chronic condition affecting chiefly main trunks and their terminal branches, and that a fair collateral circulation is established before the patient is operated on. Were this not so there would frequently be complete gangrene of the leg, something I have never seen in this condition. The superficial femoral artery and its terminals, the anterior and posterior tibials, are often occluded, the deep femoral (profunda) rarely. It is this artery with its branches that will usually take care of the nourishment of a fair sized thigh stump. I am of the opinion that had the amputation in the case mentioned been a few inches lower, leaving the profunda (which in the diagram is free of thrombus) to take care of the circulation, no gangrene of the flaps would have occurred, and the patient would have had a serviceable stump, which today he probably has not; even if some gangrene of the flaps had occurred, the amount of limb that had to be sacrificed in a reamputation might still have been so small that the final result would have been good.

I have amputated below the knee, when there was no pulsation distal to the common femoral, and when permission to do a primary high amputation could not be obtained; in spite of complete occlusion of the anterior tibial with practically no bleeding from any part of the cut surface, I have frequently had satisfactory healing of the stump.

Primary union is something to be hoped for in these cases, but not expected as a routine. End-results count; and if for the sake of obtaining primary union without any gangrene of flaps we sacrifice length of stump when length is important, as in the upper thigh, the patient suffers.

That a thrombus from the femoral may extend into the iliac and thence to the iliac of the other side is, of course, a possibility. Dr. Eisendrath mentions such a case, but this complication must be so rare as hardly to enter into the formation of a judgment as to the proper level for amputation.

Bearing on the subject, I wish to refer to a case in which I recently operated for gangrene of the foot, with no pulsation lower than the common femoral. The patient requested

amputation below the knee, with the understanding that if after doing this I thought it necessary to reamputate higher, I might do so. On amputation below the knee there was absolutely no bleeding. Both tibials were firmly occluded. I then amputated through the thigh about 8 inches below the hip and found the superficial femoral artery completely occluded. There was, however, some bleeding from branches of the deep femoral artery, not enough to make one sanguine of the result; but I preferred to chance it rather than go higher and get a useless stump. The result was all that could be desired, healing being by primary union. It seems to me that in these conditions it pays to give nature a chance, or, to put it another way, it pays to let the patient run a little extra risk.

LEO B. MEYER, M.D., New York.

THE PERCENTAGE OF NECROPSIES

To the Editor:—There were two interesting communications in THE JOURNAL, Dec. 6 and Dec. 27, 1919, by Drs. Francis Carter Wood and Joseph C. Doane, respectively, relative to the low percentage of necropsies performed in our large hospitals, following the interesting paper, Sept. 20, 1919, by Douglas Symmers. The following report for the year 1919 from the City and County Hospital, St. Paul, shows that there are some hospitals which have a fairly high percentage of necropsies: total number of deaths during 1919, 608; necropsies granted by the coroner, 29; by permission from relatives obtained by the superintendent, 61; by permission obtained from relatives through the house physician, house surgeon and assistant superintendent, 154; total number of necropsies performed, 244; percentage of necropsies performed, 40.1 + per cent.

G. B. KRAMER, M.D., St. Paul.

Resident Pathologist, City and County Hospital.

ADDISONISM

To the Editor:—This affection has been included under the general term chloasma; yet though it may be a form of this, it is of so definite and specific a nature that it deserves to be considered as a special entity. In Sutton's "Diseases of the Skin," page 494, there is an illustration of this condition as an unusual type of chloasma. In this affection, as the name implies, certain portions of the face acquire a pigmentation akin to the bronzing of Addison's disease, but limited in its distribution and varying in its tint from light fawn to a dark tan. The characteristic feature of this pigmentation is its symmetrical distribution, most commonly limited to the cheeks on and external to the malar prominences. In well marked cases the pigment is also deposited in semilunar patches above the eyebrows, conforming to their lines and connecting in the median line with a central frontal patch, while from another patch in the center of the chin there extends a circumoral ring.

The local treatment does not differ from that for chloasma and need not be discussed, as the interest of this affection lies in its probable etiology.

I have assumed that we have here a pigmentation that is an expression of hypoadrenalism, and in a form by no means rare. On an average, three or four cases a year come under observation, and all thus far have been in females. Careful inquiry into the history of the last twelve cases shows that four of the patients were affected with hereditary syphilis; four with tuberculosis, at present latent; two showed evidence of malnutrition but no evident disease, and two were apparently healthy. Their ages ranged from 11 to 23 years, and the pigmentation had been present from six months to three years. The color is usually deposited slowly, but may appear somewhat suddenly, as in one instance in which it became apparent one week after a severe tonsillar operation. How long it may persist when left to nature I am unable to say, as all I have seen have come for the removal of the pigment.

The association of Addison's disease with tuberculosis is well established; but whether addisonism is due to actual

tuberculous deposits in the suprarenals or is the result of diminished function consequent on the toxemia has yet to be determined.

The syphilitic cases are interesting, as we have here an expression of pigmentation that is probably akin in its origin to the coppery pigmentation characteristic of the acquired disease. It seems highly probable that the pigmentation in acquired syphilis is wholly due to the disease inhibiting the normal secretion of the suprarenals.

In a leading article in *THE JOURNAL*, Nov. 29, 1919, attention was called to experiments that suggest that arsenic has a selective action on the suprarenals, and proof of this is afforded by the occasional occurrence of typical Addison's disease after arsphenamin injections. Color is further lent to this probability by the frequent appearance of increased pigmentation around syphilitic lesions in the arsenical treatment of syphilis.

ANSTRUTHER DAVIDSON, M.D., Los Angeles.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RECENT LITERATURE ON SOCIAL MEDICINE AND SOCIAL INSURANCE

To the Editor:—I am wondering whether it is consistent for me to request of you references to the leading articles on social medicine and medical insurance which have appeared during the past year. Where can I find a good discussion of the work of the medical insurance act in England?

JOHN SUNDWALL, M.D., Minneapolis.

ANSWER.—The following articles on social medicine have appeared in current medical literature for the past year:

- Wortman, J. L. C.: Reform in Social Medicine, *Nederlandsch. Tijdschr. v. Geneesk.* **2**: 1675 (Nov. 23) 1918.
Sand, René: Rise of Social Medicine, *Mod. Med.* **1**: 189 (July) 1919
Glaister, J. N.: A State Medical Service, *Lancet* **197**: 751 (Oct. 25) 1919.
Fairfield, W. E.: Business Evolution and the Future of Private Medical Practice, *Illinois M. J.* **36**: 250 (Nov.) 1919.

The following articles on health insurance have appeared in current medical literature in 1919:

- Whalen, C. J.: Health Insurance, *Illinois M. J.* **35**: 1 (Jan.) 1919.
Stern, Isadore: Health Insurance, *Pennsylvania M. J.* **22**: 391 (March) 1919.
Hoffman, F. L.: Health Insurance and the Public, *Pennsylvania M. J.* **22**: 664 (July) 1919.
Rott, O. M.: Arguments Against Compulsory Health Insurance, *Northwest Med.* **18**: 81 (May) 1919.
Ballinger, J. R.: Compulsory Health Insurance, *Illinois M. J.* **35**: 9 (Jan.) 1919.
Fairhall, Joseph: Compulsory Health Insurance, *Illinois M. J.* **35**: 12 (Jan.) 1919.
Ochsner, E. H.: Compulsory Health Insurance, *Illinois M. J.* **35**: 3 (Jan.) 1919.
Verney, L.: Health Insurance in Different Countries, *Policlinico (sez. prat.)* **26**: 817 (June 29) 1919.
Lapp, J. A.: Health Insurance, Its Disadvantages and Advantages, *Pennsylvania M. J.* **22**: 661 (July) 1919.
Warren, B. S.: Health Insurance, Medical Profession and Public Health, Including Results of Study of Sickness Expectancy, *Pub. Health Rep.* **34**: 775 (April 18) 1919.
Harris, M. L.: National Health Insurance, *Illinois M. J.* **35**: 10 (Jan.) 1919.
Cunningham, W. P.: Health Insurance, Socialistic Subjugation of Medical Profession, *Delaware State M. J.* **10**: 8 (April-June) 1919.
Downing, A. F.: Study of Health Insurance in Relation to History of Two Countries Where It Has Found Most Favor, *Boston M. & S. J.* **180**: 433 (April 17) 1919.
Stanton, E. M.: Compulsory Health Insurance: Its Promises and Its Dangers, *Med. Rec.* **96**: 749 (Nov. 8) 1919.

In addition to the literature for the past year, the following articles and pamphlets will be of interest to the student of health insurance:

Social insurance pamphlets issued by the Council on Health and Public Instruction of the American Medical Association, 535 North Dearborn Street, Chicago:

- Pamphlet I. Workmen's Compensation Laws, from the Report of the Judicial Council of the American Medical Association for 1915.
Pamphlet II. Social Insurance, the Report of the Special Committee of the American Medical Association for 1916.
Pamphlet VI. Medical Organization Under Health Insurance, by Dr. Alexander Lambert, New York.
Pamphlet VII. Statistics Regarding the Medical Profession, compiled by the Committee on Social Insurance.

Pamphlet XI. Social Insurance, Report of the Special Committee of the American Medical Association for 1919.

Reports of special commissions on social insurance. (These may be secured by writing to the secretary of the committee at the state capital).

Report of the Massachusetts Special Committee on Social Insurance, February, 1917, House Document 1850; Jan. 15, 1918, Senate Document 244, Boston.

Report on Health Insurance by the New Jersey Commission on Old Age Insurance and Pensions, 1917.

Report of the Wisconsin Special Committee on Social Insurance, January, 1919, Madison, Wis.

Report of the Social Insurance Commission of the State of California, Sacramento, March, 1919.

Report of the Health Insurance Commission of Pennsylvania, Harrisburg, January, 1919.

Health, Health Insurance and Old Age Pensions, Report of the Ohio Health and Old Age Insurance Commission, Columbus, February, 1919.

Report of the Connecticut Commission on Public Welfare on Social Insurance, Hartford, 1919.

Report of the Health Insurance Commission of the State of Illinois, Springfield, May 1, 1919.

The following pamphlets have also been issued:

FOR INSURANCE

Health Insurance Standards and Tentative Draft of an Act, American Association for Labor Legislation, 131 East Twenty-Third Street, New York City.

Health Insurance, Its Relation to Public Health, Bull. 76, U. S. P. H. S.

Social Insurance, address of Arthur Hunter, president of the Actuarial Society of America, reprinted from the Transactions of the Actuarial Society of America **17**, Part 2, No. 56.

Address of Governor Samuel W. McCall to the two branches of the legislature of Massachusetts, Jan. 4, 1917, Boston.

Sickness Insurance or Sickness Prevention, Research Report 6, National Industrial Conference Board, 15 Beacon Street, Boston.

Addresses and Papers on Insurance, by Rufus M. Potts, Insurance Superintendent, State of Illinois, Springfield, Ill.

Proceedings of the Conference on Social Insurance, Dec. 5 to 9, 1916, Bull. 212, U. S. Bureau of Labor Statistics, Washington, D. C.

AGAINST INSURANCE

Social Insurance, address delivered by William Gale Curtis at the Convention of National Association of Casualty and Surety Agents.

Compulsory Health Insurance, address before the legislative hearings in New York and Massachusetts, by Magnus W. Alexander, West Lynn, Mass.

Social Insurance, a Report of the Committee on Insurance of the Chamber of Commerce of the State of New York, New York Chamber of Commerce, 65 Liberty Street, New York.

Facts and Fallacies of Compulsory Health Insurance, an address before the American Association for the Advancement of Science, by Frederick L. Hoffman, LL.D., Statistician, the Prudential Insurance Company of America.

A Refutation of False Statements in the Propaganda for Compulsory Health Insurance by the Committee of the National Civic Federation, October, 1919. New York City, 33d Floor, Metropolitan Tower. Price, 25 cents.

Fallacies of Compulsory Social Insurance, by Edson S. Lott, President of the United States Casualty Company, 80 Maiden Lane, New York.

Arguments Opposing the Idea of Enacting a Compulsory Health Insurance Law in Illinois, by the Health Insurance Committees of the Illinois State Medical Society and the Chicago Medical Society, reprinted from the *Illinois M. J.* **35**, January, 1919.

For editorials, articles and correspondence on the working of the British Health Insurance Act, see the files of the *British Medical Journal* and the *London Lancet* from 1910 to date.

VLEMINCKX' SOLUTION

To the Editor:—Will you please send me the prescription for Vleminckx' solution as used by Dr. William A. Pusey for verrucae and described by him in an article under Clinical Notes, etc., in *THE JOURNAL*, Jan. 10, 1920, p. 97? I am unable to find the liquid described in any of my textbooks on the skin.

H. W. KENFIELD, M.D., Lawrence, Mich.

To the Editor:—Will you kindly inform me what Vleminckx' solution contains?

F. J. W., Freeburg, Mo.

To the Editor:—Will you kindly forward me the formula for Vleminckx' solution?

J. L. DACH, M.D., Reeder, N. D.

ANSWER.—This solution appears in the National Formulary. It is also known as Liq. Calc. Sulphurat., the solution of oxysulphuret of calcium, and as Vleminckx' Lotion. It is made thus:

Calcium oxid	165 gm.
Sublimed sulphur	250 gm.
Water, the completed mixture to make....	1,000 c.c.

Shake the calcium oxid, mix it with the sulphur and add the mixture gradually to 1,750 c.c. of boiling water. Boil this mixture, with frequent agitation, until it is reduced to 1,000 c.c. and maintain this volume while boiling one hour, by the addition of water from time to time. Cool and strain

the mixture and having allowed the solution to become clear by standing in a stoppered bottle, decant the clear brown liquid, and preserve it in completely filled and well stoppered bottles.

"ALLEGED PLACENTAL FUNCTIONS"

To the Editor:—The editorial comment on "Alleged Placental Functions" (THE JOURNAL, Dec. 6, 1919, p. 1774) caused me to wonder whether any experiments had ever been made on the cow, which, being a herbivorous animal, eats the placenta immediately after its passage. It has always occurred to me that the cow must have good and sufficient reasons for doing this. L. C. AUDRAIN, M.D., Mazatlan, Mexico.

ANSWER.—It is generally known that rabbits, horses, pigs and cows eat the placenta. We are unable to find any references to experiments performed on these animals to demonstrate the effect that would follow if the animal should be prevented from eating the placenta. The subject is rather well summarized in THE JOURNAL, Jan. 3, 1920, p. 47. The United States Department of Agriculture, Bureau of Animal Industry, replies to the question, saying that one reason that leads certain animals to eat the placenta is an instinct to destroy this structure so as to leave no evidence of parturition. The eating is done as a matter of protection against predatory animals, and as an instinctive measure to keep such animals from locating the newly born young. It is also suggested that most animals are usually very hungry after parturition, and this perhaps explains why the placenta is eaten. On the whole, it may be said that the reason for eating the placenta has never been adequately demonstrated, and experiments on feeding placental tissue to human beings are very inconclusive.

TUBERCULOUS POULTRY

To the Editor:—Nov. 26, 1919, I bought a chicken (drawn) in a nearby market, and when it was dressed my attention was called to the size of the liver. On examination, both liver and spleen appeared to be tuberculous. A laboratory report shows tubercle bacilli from both organs. The chicken was sold for a spring hatched bird.

E. C. McGEHEE, M.D., Stevenson, Minn.

ANSWER.—This phase of meat inspection has not been given special attention by the United States government or by most city departments of health, probably for the reason that a tremendous force would be necessary to inspect dressed chicken that came to the market. The transmission of tuberculosis from fowls to man is practically negative, owing to the fact that proper cooking renders the fowl, if affected, harmless. It seems likely that almost any housewife would notice marked tuberculosis in the livers of poultry being prepared for the table.

Chicago has a city ordinance, which reads:

No cased, blown, plaited, raised, stuffed, putrid, impure, unhealthy, or unwholesome meat, fish, bird or fowl shall be held, bought or sold or offered for sale for human food, in any place in said city. Every person or corporation who shall violate any of the provisions of this section shall be fined not less than twenty-five dollars nor more than one hundred dollars for each offense.

BLACK TONGUE

To the Editor:—What is the treatment of black tongue (nigrities linguae)? J. L. RAVITTS, M.D., Montezuma, Iowa.

ANSWER.—The cause of the condition is unknown. No pathogenic organism has been found to account for it. It usually disappears spontaneously in time. It may last for only a few weeks or a few months, or it may persist for years. Cleanliness and antiseptic mouth washes may be of service. Nothing is gained by scraping or destroying the elongated papillae. Such measures simply produce apparent benefit by getting rid for the time being of the cause of the blackness.

LEGAL DECISIONS ON BURNS FROM HOT-WATER BOTTLE

To the Editor:—I have a case coming up in court next June, in which it is alleged that a patient in my hospital was burned by a hot-water bottle. It is quite similar to the one published in THE JOURNAL, Dec. 27, 1919. I would appreciate it very much if you will refer me to other cases that have been published in which the supreme court decision is similar. X. Y. Z.

ANSWER.—Reports of decisions on similar cases were published in THE JOURNAL, March 8, 1919, p. 754; June 9, 1917, p. 1775; April 8, 1916, p. 1162, and Nov. 2, 1912, p. 1650.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
NEW YORK: New York City, Albany, Buffalo, Jan. 27-31. Asst. Professional Examinations, Mr. H. J. Hamilton, Albany.
VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

PLUMBOPATHY

A Satire on Cults in Medicine

The editor of the Fresno (Calif.) *Republican*, some six months ago, evidently feeling in a pleasantly bitter mood, took his pen in hand and turned out the following comment on the new school of plumbopathy:

"PLUMBOPATHY"

"We rise again to protest! Examinations were held in Fresno last night for plumbers' licenses. No one is permitted to practice plumbing in California without such a license. And all the examinations are in the complete control of the regular or plumbopathic school. This is a rank discrimination against the disciples of other plumbing faiths.

"The plumbopathic school, for instance, holds to the doctrine that air has pressure, and that an air outlet, properly connected, is therefore necessary behind every water seal, to keep the pressure on the two sides equal. Shall persons who do not believe in air pressure be deprived of their constitutional liberty to choose a plumber of their own suckopathic school, who will make the connections all the way to the sewer unvented, to increase the suction? The plumbopaths also believe that when the water stops running from a faucet, there is some obstruction in the pipe leading to that faucet. Shall we give them the legal right to exclude from practice the acroplumbs, who teach that it is due to the wind blowing in the wrong direction? When the pipe joints leak, also, it is plumbopathic therapy to repack the screw threads with red lead. Shall this procedure be imposed on a householder who believes that they ought, instead, to be packed in ice, to contract the metal, and shall he be denied his liberty to call in a practitioner of the gelopathic school?

"Moreover, why should plumbers be examined on their practical knowledge of pipes and metals and joints, and of the legal requirements for installing them? These pipes and joints are not the ultimate Truth of plumbing. They are merely its proximate manifestations. On the plane of the Absolute, all Plumbing is Water. The ingress and egress of Water is the Supreme Significance of Plumbing. But water is no mere immediate Fact. It is derived from the melting snows of the Providential Mountains, or from the raindrops of the Heavenly Clouds. And these are but manifestations of the Force of the Sun. Therefore, considered absolutely, and not relatively, water is Sun, Helios. Shall the practitioners of Heliodic Science be required to divert their attention from these high contemplations to mere material pipes and wrenches, as a condition of treating errors of plumbing by Heliogenic absent treatment?

"We suggest that the dissenting plumbers and their potential customers form a League for Plumbing Freedom, to demand of the legislature equal recognition for all schools of plumbing, and especially to exempt from examination on the theory and practice of plumbing all persons who have conscientious scruples against such knowledge, and who believe that plumbing can be done better without it."

Presumably the powers that he could not see the matters in the same way that our editorial colleague sees it. So recently he has again dipped his pen in a well of gall and wormwood:

"UNJUST DISCRIMINATION"

"We are moved once more to register our annual protest against the pending examinations for plumbers' licenses. It is seriously proposed that no one shall practice plumbing in Fresno unless he knows plumbing, and that his competency shall be established by examination before a sectarian board, all of whose members but one are orthodox plumbers, and that one is an educated physician.

"What chance has a graduate of the aeropractic correspondence school of plumbing before such a board? There should be a referendum to the people, on a law authorizing the aeropractors to license themselves, on such educational qualifications as they are able to come up to. What right have these orthodox plumbers to examine candidates on hydrostatics and sanitation, or to test their knowledge of pipes and fixtures, or their skill in installing and repairing them? The aeropractors have testimonials showing a lot of people who never had any orthodox plumbing in their houses, and are still alive. Is it not an interference with religious liberty to confine the practice, in Fresno, to the one sect which knows pipes, fixtures and sanitation, and does its work with trained skill and in accordance with the ordinances?

"It is not the rights of the aeropractors alone that are involved. Even they are relatively materialists. Since the purpose of plumbing is to remove stench, their technic is to let the wind blow it away, or to install electric fans to help out the wind, in closed places. But there are more spiritual practitioners of the plumbing art who demonstrate that there is no such thing as stench. Stench is a sensation; not a fact. Sensation is a function of the mind. And since stench is a disagreeable sensation, it may exist in the mind but not in Mind. The remedy, therefore, is to raise mind to Mind, by the perusal of the textbook on Spiritualized Sanitation. This proposed plumbing examination is an intrusion on the liberty of conscience of all disciples of the Spiritual Sanitarians.

"If there is to be any such arbitrary requirement, we submit that there should be provision for a certificate of conscientious objection for those who do not wish to comply with it. Otherwise we shall be discriminating unjustly in favor of educated plumbers, by requiring education of their competitors. An educational qualification is undemocratic, in a community in which there are more people who do not know plumbing than there are who do know it. Let the majority rule!"

May we add our mild protest to what our colleague has written. Plumbing should not be restricted to the few. We demand the right to use our own system of intensive mental plumbing. If our pipes freeze up and break and we want to give Nature a chance to heal the wound, we object to having Mr. Dingbat, on the floor below, come up and complain that the secretions are dripping into his baby's bed and the child cannot sleep. There is such a thing as individual freedom and justice in this world, and we propose to have it.

California June Examination

Dr. Charles B. Pinkham, secretary of the California State Board of Medical Examiners, reports the oral and written examination held at San Francisco, June 23-26, 1919. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 80 candidates who took the physician's and surgeon's examination, 65, including 1 osteopath, passed, and 15, including 7 osteopaths, failed. Seventy-seven candidates were licensed by reciprocity. Two candidates were granted osteopathic reciprocity certificates. One candidate received a drugless healer license, and 9 candidates were granted licenses to practice chiropody. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas		(1918)	89.9
College of Medical Evangelists	(1919) 83.7, 86.8, 91.7, 91.9, *		
College of Physicians and Surgeons, Los Angeles	(1919) 75, 75.7, 76.4, 78.9, 79.7, 82, 82.5, 82.9, 84.4, 84.7, 87.7, 88.2, 88.4, 88.5, 89, 89.7, 92, 92, *, *, *, *		
College of Physicians and Surgeons, San Francisco	(1919) 76.3, 82.8		
Leland Stanford Junior University	(1919) 81.8, 82.7, 82.9, 84.7, 84.9, 85.5, 88.3, 88.3, 88.8, 89.2, 95.1, 95.7.		
Oakland College of Medicine and Surgery	(1919) 83.5, 88.1		
Northwestern University	(1918)		89.8
Rush Medical College	(1919) 79.5, 84.8, 89.5.		

University of Kansas	(1918)	*
Harvard University	(1916)	90.2
University of Michigan Homeopathic Medical School	(1918)	84.8
University of Minnesota	(1919)**	79.8
St. Louis University	(1919)	85
Columbia University	(1918)	93.1
Jefferson Medical College	(1918)	89.8
University of Pennsylvania	(1918)	83, 88
Baylor University	(1919)	90.1
Kyoto Perfection Special Medical School	(1905)†	77
Nippon Special Medical School	(1910)†	75.3
National Homeopathic School of Medicine	(1907)†	75
National School of Medicine	(1897)†	90
McGill University	(1905)	88.9
University of Zurich	(1917)	80.7

FAILED

College of Physicians and Surgeons, Los Angeles (1918)	67.7, 67.9, 71.2.
College of Physicians and Surgeons, San Francisco (1918)	51.7, 62.4,
(1919)	72.8.
Kentucky School of Medicine	(1906) 65
Johns Hopkins University	(1917) 70.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Medical College of the Pacific	(1904)		Alaska
Denver and Gross College of Medicine	(1905) Utah, (1909)		Colorado
Howard University	(1904)		Dist. Colum.
Atlanta College of Physicians and Surgeons	(1905)		Georgia
Bennett College of Eclectic Medicine and Surgery	(1906)		Iowa
Chicago College of Medicine and Surgery	(1913)		Indiana
College of Physicians and Surgeons, Chicago	(1903)		Illinois
Hahnemann Med. Coll. and Hosp., Chicago	(1905), (1917)		Oregon
Northwestern University	(1894) Illinois; (1906) Colorado, Illinois, (1912) Illinois, Oregon.		N. Dakota
Rush Medical College	(1894) Iowa, (1897) Illinois, (1903)		Illinois
University of Illinois	(1904) Indiana, (1906) Illinois, (1913) Minnesota.		Utah
Eclectic Medical College of Indiana	(1914)		Illinois
Keokuk Medical College	(1903)		Indiana
State University of Iowa College of Homeo. Med.	(1907)		Iowa
State University of Iowa College of Medicine	(1903)		Iowa
College of Physicians and Surgeons, Kansas City	(1893)		Nebraska
Kansas Medical College	(1898)		Minnesota
University of Louisville	(1906)		Kansas
Baltimore Medical College	(1895) Oregon, (1900)		Washington
Johns Hopkins University	(1914)		Kentucky
Harvard University	(1903)		New York
Detroit College of Medicine	(1908)		Maryland
Univ. of Michigan Med. School	(1883) Minnesota, (1890)		Mass.
University of Minnesota College of Med. and Surg.	(1911), (1917)		N. Dakota
University of Minnesota Homeopathic Med. Dept.	(1902)		Ohio
Eclectic Medical University, Kansas City	(1906)		Michigan
Kansas City Medical College	(1912)		Minnesota
Marion-Sims Beaumont Medical College	(1903)		Minnesota
Marion-Sims College of Medicine	(1905)		Arkansas
Medico-Chirurgical College of Kansas City	(1902)		Kansas
University Medical College, Kansas City	(1907), (1913)		Oregon
John A. Creighton Medical College	(1907) Oregon, (1917)		Iowa
Long Island College Hospital	(1893), (1899)		Missouri
Cornell University	(1906)		Kansas
University of Buffalo	(1898)		Oregon
Eclectic Medical Institute	(1901)		Utah
Starling Medical College	(1896)		New York
Willamette University	(1907)		Penna.
Jefferson Medical College	(1897) Washington, (1910)		Kansas
University of Pennsylvania	(1899) Penna., (1906), (1911)		Ohio
Western Pennsylvania Medical College	(1901)		Oregon
Vanderbilt University	(1908) Montana, (1913) Iowa, (1917)		Utah
University of Nashville	(1886), (1906) Montana, (1909)		New York
University College of Medicine, Richmond	(1900)		Penna.
University of Vermont	(1907)		Tennessee
			Tennessee
			Washington
			Washington

* No grade given.

** Granted M.B. degree in 1919 after completing four year course; will receive M.D. degree after completing his intern year.

† Credit allowed for years of practice.

Nebraska February and June Examination

Mr. H. H. Antles, secretary of the Nebraska Department of Public Welfare, reports the oral, written and practical examination held at Lincoln, Feb. 13, 1919. The examination covered 12 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 52 candidates examined, 51 passed and 1 failed. Fourteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
John A. Creighton Medical College	(1917) 88, (1919) 78, 81, 81, 82, 82.5, 82.5, 83, 83, 83, 83.5, 85, 86, 88.		
University of Nebraska	(1918) 82, (1919) 79, 79.5, 81, 82, 83, 83, 83, 83, 83, 83.5, 84, 84, 84, 85, 85, 85, 85.5, 86, 86, 86, 86, 86, 87, 87, 87, 90, 92, 92, * (1920) 85, 86.		
Columbia University	(1915)		82
Loyola University	(1917)		**
College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
University of Colorado	(1918)		Colorado
Chicago College of Medicine and Surgery	(1918)		Illinois

Hahnemann Medical College and Hospital, Chicago..	(1906)	Illinois
Loyola University	(1917)	Illinois
Northwestern University	(1904)	Illinois
University of Illinois	(1915)	Illinois
Louisville Medical College	(1907)	Kentucky
Ensworth Medical College	(1910)	Missouri
National University of Arts and Sciences	(1917)	Missouri
University Medical College of Kansas City.....	(1900)	Missouri
Long Island College Hospital	(1915)	New York
New York University	(1896)	New York
University of Oklahoma	(1911)	Kansas
Dallas Medical College	(1903)	Texas

* Completed work of medical curriculum in 1918, degree to be conferred in February, 1920.

** No grade given.

The oral, written and practical examination held at Lincoln, June 30, 1919, covered 12 subjects and included 100 questions. An average of 70 per cent. was required to pass. Of the 11 candidates examined, 9 passed and 2 failed. Twenty-one candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
St. Louis College of Physicians and Surgeons	(1919)	85,	88
Lincoln Medical College	(1918)		88
Eclectic Medical College, Cincinnati	(1919)	84, 86, 86, 89.5.	
Jefferson Medical College	(1917)	85, (1919)	88
FAILED			
Loyola University	*(1917)		76
Lincoln Medical College	*(1918)		75

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford Junior University	(1914)		New York
Bennett College of Eclectic Medicine and Surgery..	(1905)		Illinois
Bennett Medical College	(1911)		Tennessee
Chicago College of Medicine and Surgery ..	(1915), (1917)		Illinois
College of Physicians and Surgeons, Chicago	(1905)		Oklahoma
Hahnemann Medical College and Hospital, Chicago..	(1907)		Illinois
Rush Medical College	(1892), (1916)		Illinois
Albany Medical College	(1870)		Illinois
Columbia University	(1900) New Hampshire, (1913)		New York
Johns Hopkins University	(1912)		Maryland
Tufts College Medical School	(1909)		Iowa
Barnes Medical College	(1904)		Missouri
St. Louis College of Physicians and Surgeons.....	(1918)		Tennessee
St. Louis University	(1914)		Missouri
Washington University	(1917)		Missouri
Cleveland University of Medicine and Surgery	(1897)		Ohio
Medical College of Ohio	(1890)		Minnesota
Meharry Medical College	(1909)		Missouri

* Fell below the required average in one or more subjects.

New Mexico July Examination

Dr. R. E. McBride, secretary of the New Mexico Board of Medical Examiners, reports that one candidate was licensed by examination, ten candidates were licensed by endorsement of their diplomas, and one candidate was licensed by reciprocity at the meeting held July 14, 1919. The following colleges were represented:

College	LICENSED BY EXAMINATION	Year Grad.
University of Oklahoma.....	(1919)	
ENDORSEMENT OF DIPLOMAS		
University of Arkansas	(1916)	
Hospital College of Medicine, Louisville.....	(1903)	
University of Louisville.....	(1908)	
Baltimore Medical College	(1892)	
St. Louis College of Physicians and Surgeons.....	(1913)	
St. Louis University	(1919)	
Pulte Medical College	(1891)	
Western Reserve University.....	(1910)	
Meharry Medical College	(1912)	
Medical College of Virginia.....	(1911)	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Phys. and Surgs., Chicago.....	(1903)		Kansas

South Carolina June Examination

Dr. A. Earle Boozer, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbus, June 10-12, 1919. The examination covered 19 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 39 candidates examined, 29, including 3 osteopaths, passed and 10, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Atlanta College of Physicians and Surgeons	(1912)		75
Atlanta Medical College	(1915)	88.9, (1917)	81.2
Emory University	(1918)		76.6
University of Georgia	(1917)	86.1, 86.2, (1919)	87.1

University of Louisville	(1917)	84.2
Johns Hopkins University	(1919)	92.1
University of Maryland	(1918)	79.6, 84.7
Boston University	(1919)	89
Harvard University	(1918)	88.1
Jefferson Medical College	(1919)	93.1
University of Pennsylvania	(1918)	89.4
Medical College of the State of South Carolina	(1919)	82, 84.4, 86.1, 87.2, 87.4, 87.6, 87.9, 90.2, 91.2.
University of Tennessee	(1915)	81.9

FAILED		
Birmingham Medical College	(1915)	68
University of Georgia	(1906)	69.5
College of Physicians and Surgeons, Keokuk	(1877)	67.9
Leonard Medical School	(1911)	64.4
University of Oklahoma	(1915)	69.4
Med. Coll. of the State of South Carolina	(1901) 68.7, (1911)	69
Meharry Medical College	(1909) 72.6 (1911)	*

* No grade given.

Social Medicine and Medical Economics

SOME FUNDAMENTAL DEFECTS INHERENT IN COMPULSORY HEALTH INSURANCE *

E. M. STANTON, M.D.
SCHENECTADY, N. Y.

The fact that the medical profession of New York State and of the entire country is a practically unanimous unit in condemning compulsory health insurance bills of the type proposed by the American Association for Labor Legislation is almost prima facie evidence that the great majority of practitioners realize more or less clearly that there is something fundamentally wrong with the project.

If we are to oppose compulsory health insurance we must be able to formulate our objections into definite terms, and it is my object in this paper to outline some of the more fundamental objections to compulsory health insurance. The time allowed will permit of my taking up only one or two of the defects which are inherent in the proposed legislation. I shall, however, attempt to show that some of the defects are so fundamental as to be inseparable from the entire problem of sickness insurance, be it intended for the rich or for the poor. I believe that it can be very clearly shown that when we talk about fire, life or marine insurance we are talking about insurance the value of which is self-evident to all who have studied the question; and, on the other hand, it should be equally clear that when we approach the subject of sickness insurance we encounter economic problems so entirely different from those encountered in standard insurance propositions that the very name of insurance is scarcely applicable in the field of so-called health insurance. In this connection, it is well to note that the so-called experts of the American Association for Labor Legislation have for at least six, and probably ten, years been struggling with the problem of trying to devise a workable bill, and that to date they have made a complete failure. This in itself should be at least presumptive proof that there may be something radically wrong with the materials with which they are trying to work.

STANDARD INSURANCE PROPOSITIONS

The proponents of compulsory health insurance tell us that fire insurance and life insurance are recognized as being of the very greatest economic and social value and that, therefore, health insurance is equally valuable. The fact remains, however, that up to the year 1919 sickness insurance has not been able to take its place alongside of fire and life insurance. There must be some good reasons why sickness insurance has always remained a weak sister in the insurance family, and I believe that it will be worth our while to spend a few minutes in trying to ascertain the

* Read before the Fourth District Branch of the Medical Society of the State of New York, Plattsburg, Nov. 18, 1919.

reasons why sickness insurance requires compulsion, 50 per cent. subsidies, and various other tonics to make it a going proposition.

In this world of ours the difference between a good and a bad bargain is usually determined by the returns one gets for the money spent; and in the ultimate analysis, insurance is not an exception to this general rule. The economic value of insurance is determined by the magnitude of the risk assumed and by the expected frequency of the event against which the insurance is carried.

Insurance against death is a typical example of insurance of unquestioned economic value. The death of the head of the family is an irreparable damage. The chances of this occurring in any given unit of time are small. For instance, between the years 20 and 42 the risk for any one year is less than 1 in 100. Term life insurance during the years of the average man's economic activity costs only about \$1 a year for each \$100 of protection.

Fire insurance is more universal than life insurance, and this is because from a purely economic point of view it is even more valuable than life insurance. In fire insurance the ratio between cost and protection is for the average risk about \$1 premium per annum for \$600 worth of protection.

Marine insurance is another form of universally recognized insurance. It is not necessary to go into the question of marine insurance rates, but it will be of interest to note that during the palmiest days of the Hun submarine when marine insurance was considered to have become almost prohibitive, the rates for this form of insurance were actually only one-quarter that which is normally necessary to charge in the case of the best risks insured under health insurance.

SICKNESS INSURANCE

The moment we turn to sickness insurance we find conditions absolutely different from those encountered in fire and life insurance. Death occurs but once in the experience of the insured, fires are rare, and the destruction is in most cases total. Sickness, however, is almost a regular incident in the life of a family.

The economic value of insurance decreases as the occurrence against which the insurance is carried becomes more frequent and the distribution more uniform. To illustrate this, suppose that each individual could count on being sick once a year. Then it would be the height of folly to attempt to carry yearly term sickness insurance because, from the very nature of things, the returns from this insurance could only be the amount of the premiums paid less the overhead costs of conducting the insurance. Stripped of superfluous detail, this is the insurance problem actually encountered by the so-called model bill of the American Association for Labor Legislation. The Illinois report shows that out of 215 families investigated by the Bureau of Labor Statistics, 212 had sickness during the year. It is therefore, I believe, self-evident that if the expectation of sickness in the average American working man's family is to be in the neighborhood of 98 per cent. per annum, there is then no question but that as a strict business proposition it would be better for each family to become its own insurer and thereby save the overhead expenses which are unavoidable with all forms of insurance.

At this point it might be well to note the fact that by far the best family health insurance policy yet devised is obtained by setting aside a certain portion of the family income as a savings bank account. The savings bank family health insurance policy is 104 per cent. efficient as compared with the 60 or 70 per cent. efficiency of the best private company sickness insurance and an estimated possible efficiency of about 85 per cent. for state controlled compulsory insurance.

If we dismiss the universal health insurance of the type proposed in the so-called model bills and turn our attention to the limited wage-earner type of compulsory health insurance as illustrated in such bills as the Davenport bill, we are at once confronted by certain definite facts. The chance of the individual worker's becoming sick during the year is not 1:100, or even 1:50, but, as shown by the Illinois report and other studies, approximately 1:5. This fact itself makes straight sickness insurance a very costly proposition. In fact, the ratio between cost and possible benefit is such as to make it scarcely an insurance question at all. The normal cost of insurance covering only loss of wages must, of necessity, be at a rate which makes it almost prohibitive and, I believe, scarcely justifiable as an insurance proposition in any but special circumstances.

For purposes of study we can take one of the best sickness insurance policies ever offered, which is that of the General Electric Mutual Benefit Association of the Schenectady works. The company contributes the overhead costs of maintaining this insurance. During the past six years the policy holders of this association who have been sick have received an average benefit of \$18.54, and the average premium paid has been \$3.83, which gives a ratio of premium to expected benefit of \$1 premium to \$4.84 benefit, with a maximum possible protection of \$21.94 for each dollar paid as premium.

Owing to the fact that the compulsory insurance of the Davenport bill type covers different periods of sickness and loads a large share of the expense on the first week of illness, it can be readily shown that had the 5,276 who have received sick benefits under the General Electric Mutual Benefit Association been insured under the Davenport bill, they would have received only \$2.24 in benefits for each dollar paid as premium. Even with the company paying one half of the premium the ratio would still be \$4.84 for the General Electric Mutual against only about \$4.48 for compulsory insurance. Any trade by which the working man of Schenectady gives up even a fraction of his present liberty for a return of a loss of 36 cents in benefits for each dollar paid for health insurance seems too preposterous for serious consideration.

EXCESSIVE COST OF COMPULSORY HEALTH INSURANCE

The question of excessive cost is really the root of practically all the difficulties encountered by the compulsory health insurance advocates. By excessive cost I do not mean that the total would be beyond the reach of the American working man if he were offered a really good value for the money spent. I have heard it said that compulsory health insurance will cost only from 2 to 4 per cent. of the workman's income. Figured on the \$12 a week basis of the Davenport bill, the benefits could cost not less than 7 per cent. of the \$12 a week wage; but this is entirely beside the question. The really important thing is that the insurance is itself so costly in proportion to the benefits that it is not a good buy for the working man. Consequently, for the workman himself to be compelled to pay for state controlled sickness insurance giving the benefits promised by the Davenport bill, or similar bills, is entirely out of the question. The American working man simply would not submit to any such form of compulsion. His business instincts are entirely too good.

The question of costs at once forced the compulsory health insurance advocates to some sort of subterfuge, and the scheme adopted is to attempt to bribe the working man by some sort of promise of something for nothing. In the case of the Davenport bill, this takes the form of compelling the employer to pay one half or more of the costs of the so-called insurance. To beguile the working man into accepting the

compulsion part of the program, even this promise of half for nothing is not sufficient, and the Committee on Health of the New York State Federation of Labor has adopted a policy of claiming that the total expenses for administering the benefits of the law will be only about one half what they must of necessity be if the benefits are actually to be given to the insured.

History is a long, long story; and in this story the policy of something for nothing has been tried many, many times always with the same results. Is there any reason to expect a different result when it is tried in the guise of compulsory health insurance?

THE PARTIES INVOLVED

There are really four parties directly interested in the compulsory health insurance proposition. They are the working man, the public, the employer and the medical and allied professions.

The working man is to get the something for nothing. The public is represented by the voters, and it is from the very first self-evident that it is useless to ask politicians to compel the public to pay the something which is to be given for nothing. The state might be induced to contribute a small part, but I am certain that every man in this audience will agree with me when I say that the proposition to make the public pay half of the cash and other benefits promised by such bills as the Davenport bill is too preposterous for serious consideration.

We still have two parties left, and the compulsory health bills do actually claim to select the employer to serve in the rôle of the something for nothing contributor.

The compulsory health insurance advocates tell us that compelling the employer to pay for health insurance is only a natural step from the principles of the compensation legislation. This is not true, because the compensation legislation compels industry to pay only for the direct damage done by industry. In order for compulsory health insurance of the Davenport bill type to give fundamental justice at least approximately one half of sickness must be due to industry. In this world of ours it is best to recognize facts as they are; and in this case the fact is that industry cannot properly be charged with one one-hundredth part of ordinary sickness.

The meaning of all this is self-evident. The so-called compulsory health insurance is not health insurance at all, but only a thinly veiled scheme for forcing charity on a portion of the community which neither requires nor desires charity. At the same time the people who ordinarily need charity—those chronically ill, the unemployed, the aged, the widow, the orphans—are not provided for at all. In fact, they will be much worse off; for the available resources of the community will have been used up in forcing charity on the man with the job. I believe that history will fail to show a single example of a law forcing charity on employed working men which has not worked out to the detriment of the working man and served ultimately to enslave him.

CONTROL BY EMPLOYERS

I wish now to call attention to another inevitable difficulty which was bound to confront the compulsory health insurance advocates the minute they undertook to finance, by means of a subterfuge, a scheme which could not stand on its own feet. The very minute you find a bill that says that the employer must pay one half or more of the costs of a measure you can be assured that somewhere in that bill you will find provisions giving the employer one half or more of the control of the machinery which will work the measure. This is so of the Davenport bill and will be so of all bills depending on an employer subsidy to furnish the something for nothing. It is the inevitable price that must be paid for the deception; and from what I know of employers I

am perfectly certain that in the long run the employer will find some way of getting his money back with interest and that the price to be paid by the workman for this something for nothing will be actually greater, or I might say worse, than if the whole transaction were strictly honest from the beginning.

If we turn to the Davenport bill we find in Article 1, Section 3, exempted from the workings of the bill, "all those employees for whose benefit an employer, in the judgment of the industrial commission, maintains at his own cost and without resource to insurance, a system, fund, or plan, which guarantees to such employees benefits substantially the same as benefits they would receive if insured under the provisions of this system." Does any one here believe that this would mean health insurance? No, it would mean that our larger companies would be forced by the exigencies of the law to return to the long ago discarded plan of the company doctor with all the evils and dissatisfaction attendant thereon.

The company doctor is an old plan. We do not have to repeat history with this experiment, which has never been able to survive in this country, except in frontier camps and localities not yet adequately supplied with independent physicians.

The so-called Health Committee of the New York State Federation of Labor claims that ample provision is made for the democratic control of all locals by the employee members; but in Article 4, Section 60, of the Davenport bill we find that "each employer member shall have as many votes for representatives of employers on the board of directors as he employs workmen who are employee members of such fund." Also in Section 55 we find that the boards of directors shall consist of "not more than seven directors which shall consist of an equal number of directors representing employee members, and an equal number representing employer members, and one director in addition." It is not difficult to predict in advance who would really control these boards.

The remaining party that will inevitably be compelled to contribute liberally to the something for nothing, namely, the medical profession, is not represented on the boards at all. There has been considerable talk about minimum provisions to insure adequate protection for the medical profession, but in my opinion the ultimate fate of the medical profession will be determined not by any little details of amendments, but by the great underlying structure on which the legislation is based. Just as long as the entire structure of compulsory health insurance is built on a deception and a false promise of something for nothing, then unless history reverses itself and human nature changes, the medical profession will find itself called on to support the very foundations of a structure which from its birth was destined to be incapable of supporting itself. No possible good can come to the medical profession from getting mixed up in a scheme which from the very start is little else than a dishonest subterfuge.

CONCLUSION

The fact should be emphasized that the moment we are forced to admit that the burden of compulsory health insurance cannot be borne by the insured, then the problem automatically becomes one more related to charity than to insurance. By no stretch of the imagination can the machinery proposed for compulsory health insurance be conceived of as an efficient method for the distribution of charity. The great political army of directors, secretaries, clerks, inspectors and others who would be called into being by compulsory health insurance is entirely too inefficient and expensive a proposition to be substituted for our present scientific development of state medicine and management of the charity problem.

511 State Street.

Miscellany

LEON DAUDET AND HIS RECOLLECTIONS OF HIS MEDICAL COLLEGE

Among the deputies elected to the French chamber in November was Léon Daudet, who has written considerably on medicine in general, on the medical profession and, more particularly, on the celebrated physicians of Paris.

Daudet is a son of the noted author, Alphonse Daudet. Although Léon Daudet, the son, also has become an author, he was originally destined for the medical profession. For seven years he pursued his medical studies at the Paris Faculty of Medicine and passed all his examinations but did not support a thesis, which is an indispensable requirement for the degree of doctor of medicine. He had even been appointed, first extern and then provisional intern, at the Hôpitaux de Paris, but he did not achieve the full title of intern. He soon after broke off his relations with the Faculty of Medicine, and in 1894 he published a book, the mere title of which gives an insight into the mentality of its author. The title of his book was, "Les Morticoles" (The Morticulturists), that is, cultivators of death. This pamphlet was directed against the professors of the Paris Faculty of Medicine. The statement has been made that in this pamphlet, breathing violence and rudeness, as it does, Léon Daudet has given vent to the malice he entertained toward some of his former teachers who had not shown him all the consideration to which he felt he was entitled. Be that as it may, Daudet has recently called up his memories of his period of medical study in an interesting and more carefully prepared volume entitled, "Devant la douleur" (In the Face of Pain), in which the silhouettes of a great number of savants and well known physicians and surgeons pass in review, many of whom are no longer of this world: Charcot, Brouardel, who was a former dean of the Paris Faculty of Medicine; Bouchard, Brissaud, Potain, the great heart specialist; the surgeons Tillaux, Richet (father of the physiologist, Charles Richet), Lucas-Championnière, Péan, Doyen; the famous syphilologist, Alfred Fournier; the anatomists, Farabeuf and Poirier; the gynecologist, Pozzi; the embryologist and histologist, Mathias Duval; the military surgeons Kelsch and Villemin, and others. A number of living colleagues are also mentioned, among whom are Babinski and Professors Debove, Charles Richet and Albert Robin.

It is true that Daudet's recent book, also, is full of the exaggerations and the violent language that characterize the pamphleteer, and a number of the character sketches that he draws are in reality only caricatures; for example, when he refers to Péan beginning his day's work in the operating room: "The skilled wielder of the scalpel cuts off three legs, two arms, disarticulates two shoulders, trephines five skulls, removes as if it were child's play half a dozen uteri together with the adnexa, and takes out several pairs of ovaries. . . . At the end of two hours of this exercise he was dripping with blood and sweat. His hands, or, I should say, his paws, were as red as those of an assassin; his feet were soaked in life's red stream; yet, withal, he was as merry as a marriage bell. And why not? Had he not performed his function here below—to cut, to open, to resect, to bone and to eviscerate?" However, as in all caricatures, a certain basic truth can be discovered. It wasn't for naught that the students had nicknamed Péan "*le père coupe-toujours*" (Father Everet Cutting), and the regretted Professor Grasset once told me of having been present at one of these operative sittings, at which, on inquiring of Péan what his diagnosis was in the case of the patient who was about to be operated on, received from him the reply: "That is just what we are going to find out by opening the abdomen."

The critics have been very unjust to Léon Daudet in stating that he has ridiculed all the French representatives of the medical profession. Far from it. Daudet speaks in respectful, even affectionate, terms of Villemin, justly celebrated for his work on the contagiousness of tuberculosis.

He refers to him as "a scholar possessing an admirable character in every respect." Of Professor Kelsch he says: "He combined with an irresistible medical instinct the highest scientific culture." Tillaux, the surgeon, he thinks, possessed "excellent heart qualities; was a sure practitioner and a man of unquestionable integrity." Farabeuf, the anatomist, was gifted with "genius and the power of exposition;" "was devoted to his work and to science in general;" was not open to flattery, and shunned all corrupt practices and intrigue; "rarely did ever a man despise more than he money and conventional honors." Daudet also seems to have carried away with him an exalted recollection of the service of Lucas-Championnière at the Hôtel-Dieu Hospital. This surgeon was the first in Paris to apply rigorously antiseptic and aseptic surgery. He operated without haste, always showing himself very considerate "of the limbs and tissues of his patients." Of Mathias Duval, professor of embryology, he says: "He was a very clear lecturer. One always had the feeling that he had left nothing unsaid that should have been said. His history of the development of the human ovum was most admirable." As regards character, he gave one the feeling of serenity combined with force, of possessing "a loftiness of spirit that held him aloof from corrupt practices and faculty intrigues, and caused him to flee from the clatter of voices and the bestowal of praise. . . . He was one of the most beautiful and noble characters that France has produced in the field of science."

But Professor Potain comes in for an even greater share of Daudet's admiration; in fact, his book, *Devant la douleur*, is dedicated "to the exalted memory" of Potain. Daudet enjoyed the privilege of knowing the celebrated clinician very intimately. "Providence," he says, "afforded me for several years the opportunity of direct contact with this great teacher, and allowed me to listen reverently to his advice and counsel." As a clinician he was extremely resolute. He spoke and acted like a man who had a sense of his own true worth. When called at the same time as Charcot to the bedside of Alphonse Daudet, who was suffering from a severe bronchitis, he recommenced the auscultation that his illustrious colleague had just finished without paying any attention to Charcot's remark: "But I have just finished— . . ." "Nowhere could one learn the pathology of the heart and the blood vessels, the premonitory signs of tuberculosis and of interstitial nephritis as one could in his class room. It was interesting to see him perform auscultation. He would listen long and intently at one spot; would wait some time and then begin again. . . . Not a murmur, nor a purr, not a triple sound, though never so slight, escaped him. His hearing was not outclassed even by Cooper's Indians." He was also a man of great kindness of heart, which inured to the benefit of his surroundings. On one occasion a convalescent patient, who was in very straitened circumstances, was preparing to leave Potain's service. Just as he was leaving, Potain slipped a 500 franc note in his hand, and having done so Potain beat a hasty retreat, as if guilty of theft, not waiting to hear the man's expressions of gratitude.

Daudet knew intimately also Professor Charcot, who was a friend of his father, Alphonse Daudet. He pays homage to the sagacity of the clinician, and praises his immense erudition and his genius as an observer. Charcot was an indefatigable worker who spent at times a great part of the night studying into some problem pertaining to pathologic anatomy, or in working out the details of some schema, such as his famous graphic representation of the diverse forms of aphasia. But—quite the contrary of Potain, all of whose intellectual forces were directed toward the alleviation of pain—Charcot seemed to assume a disdainful attitude toward therapeutics in general. "He considered the disorders of the human machine much as an astronomer views the movements of the stars." He was very dictatorial and could not endure contradiction. According to Daudet, whenever he thought that any one had presumed to contest any of his medical doctrines with respect to hysteria major, aphasia, multiple sclerosis, etc., he became furious and violent. The situation in which those studying under him found

themselves was not exactly comfortable. A certain amount of initiative, and a certain amount of originality, even, he could accord them, provided their initiative and their originality did not clash with the opinions and theories of the master. Any derogatory references to the doctrines that he had established were considered rank treason and were punished as such.

A NEW PRESERVATIVE FOR CADAVERS

The introduction of phenol (carbolic acid) in 1864 as a preservative for anatomic material, followed by glycerol in 1867 and by formaldehyd in 1890, revolutionized research in anatomy. The miracle wrought by these and other chemicals in rendering the dissecting room relatively odorless has been incalculable comfort to students and teachers. However, none of these substances is ideal, and anatomists have continually sought for a substance which would not only preserve the delicate tissues without the production of odor, and be nontoxic and nonvolatile, but also be inexpensive, and not require renewal. Experiments recently reported by Myer (*Science*, Dec. 19, 1919, p. 570) appear to indicate that liquid petrolatum may be utilized as a preservative for cadavers. It extracts practically nothing from the tissues. It softens and later protects the epidermis which, after thorough impregnation with the substance, resists drying much better than if other preservatives had been used; and the eyelids, nose, digits, lips, ears and genitalia do not require such careful protection during dissection. Material stored in petrolatum for more than two years is practically odorless, and appears to be in identically the same condition as when immersed. On removal, the material need drain only a few minutes when it is ready for wrapping. The specific gravity of the oil is low, so that bodies readily sink in it. Inspection of the material in the tanks is easy. So long as there is sufficient oil in the tanks, all material is hermetically sealed and there is no subsequent loss from evaporation. The initial cost of the oil is not large and, since it can be used over and over, its use ultimately is economical. Fire risks are negligible. Phenol may be added to the oil if desired, although there appears to be no necessity for it.

HEALTH AS A DISEASE

"Avoid extremes" says an ancient proverb. The following editorial from the Gary (Ind.) *Times* applies the saying to the health faddist:

There is a great deal of truth in the satirical story of Jiggins, who had the health habit. Jiggins lived twenty years ago, and health was a disease with him. The *Dallas News* says that Jiggins took a cold plunge every morning. He said it opened his pores. After it he took a hot sponge. He said it closed the pores. He got so that he could open and shut his pores at will.

Jiggins used to stand and breathe at an open window for half an hour before dressing. He said it expanded his lungs. He might, of course, have had it done in a shoe shop with a boot stretcher; but, after all it cost him nothing this way. And what is half an hour?

After he had got his vest on, Jiggins used to hitch himself up like a dog in harness and do shadow exercises. He did them forward, backward and hind-side up.

He could have got a job as a dog anywhere. He spent all his time at this kind of thing. In his spare time at the office he used to lie on his stomach on the floor and see if he could lift himself up with his knuckles. If he could, then he tried some other way until he found one that he couldn't do. Then he would spend the rest of his lunch hour on his stomach, perfectly happy.

In the evenings, in his room, he used to lift iron bars, cannon balls, heavy dumb bells and haul himself up to the ceiling with his teeth.

He liked it.

He spent half the night slinging himself around his room. He said it made his brain clear. When he got his brain perfectly clear he went to bed and slept. As soon as he woke he began clearing it again.

Jiggins is dead. He was, of course, a pioneer; but the fact that he dumbelled himself to death at an early age does not prevent a whole generation of young men from following in his path.

They are ridden by the health mania.

They make themselves a nuisance.

They get up at impossible hours. They go out in silly little suits and run marathon heats before breakfast. They chase around barefoot to get the dew on their feet. They hunt for ozone. They bother about pepsin. They won't eat meat because it has too much nitrogen. They won't eat fruit because it hasn't got any. They prefer albumin and starch to huckleberry pie and doughnuts. They won't drink water out of a tap. They won't eat sardines out of a tin. They won't use oysters out of a pail. They won't drink milk out of a glass. They are afraid. Yes, sir, afraid. Cowards!

And after all their fuss they presently incur some simple, old-fashioned illness, and die like anybody else.

Book Notices

ORGANIZATION OF PUBLIC HEALTH NURSING. By Annie M. Brainard. Cloth. Price \$1.35. Pp. 144 with 11 illustrations. New York: Macmillan Company, 1919.

This, the first handbook of a contemplated series on the subject, bears the endorsement of the National Organization for Public Health Nursing. Written by a lay woman, the work gives a clear insight into organization and executive requirements for efficient efforts in its field. In addition to the presentation of general principles, special details and statistical data gained from experience are introduced. The scope of the manual is indicated in the table of contents: the need of organization; fundamental principles; forms of organization; the nurses' part in organizing; organizing public health nursing in a new community; boards of directors; committee on finance; committee on nurses; the supply committee; records and statistics; reorganization. The term "public health nurse" is defined as a generic term including district nurses, school nurses, factory nurses, tuberculosis nurses, child welfare nurses, and all nurses engaged in social or settlement work as distinguished from private duty or institutional nurses.

TEACHING THE SICK. A Manual of Occupational Therapy and Re-Education. By George Edward Barton, A.I.A., Director of Consolation House. Cloth. Price, \$1.50. Pp. 163 with illustrations. Philadelphia: W. B. Saunders Company, 1919.

The lessons conveyed in this concise handbook were learned in the school of experience. The author is "self made," for earlier in life he won a victory over his own physical handicaps. No attempt has been made to produce a textbook on the reeducation of military and industrial cripples; the manual discusses broad principles, and special methods which may serve as illustrations. The modest desire is apparent to dispel prevalent misconceptions fostered by amateur enthusiasts. For in the mind of the author, occupational therapy presents two sides: one, education; the other and more important, therapeutics. It is not sufficient, then, that one be a craft teacher; one should have experience with pain, sickness and disability to qualify as a competent "occupational therapist." The treatise is worth reading for its good advice and many helpful hints.

LA TRICOMONOSIS INTESTINAL. Por el Dr. Edmundo Escome!, Delegado de la Facultad de Medicina, París. Paper. Pp. 78, with illustrations. Lima: Sanmarti y Ca, 1919.

The author began his study of trichomoniasis in 1898. Recently he received a prize from the Academy of Medicine of Paris for this work. In this pamphlet he summarizes the history, distribution, pathogenicity, etiology, pathology, diagnosis, prognosis, clinical course and treatment of the disease. He claims to have demonstrated that the infecting organism, *Trichomonas intestinalis*, is pathogenic not only in the intestine but also in the vagina and gums, producing disorders which can be cured only after these organs have been treated with iodine.

Medicolegal

Parent Not Providing Medical Attention for Child

(*State v. Barnes (Tenn.)*, 212 S. W. R. 100)

The Supreme Court of Tennessee reverses the judgment of the trial court and remands for further proceedings this case in which the trial court quashed an indictment which charged that the defendant unlawfully, wilfully and without good cause neglected and failed to provide for an infant child under the age of 16 years, according to his means, by suffering the child to sicken and die without proper treatment and medical attention. The supreme court says that it is the legal duty of the father to provide proper care, treatment, and medical attention for his child. If by reason of his breach of this duty the death of this child resulted, the father may be guilty of homicide. If one owes to another a plain particular and personal duty, imposed either by law or by contract, an omission, resulting in the death of the party to whom such duty was owing, usually renders the delinquent party guilty of a homicide. This proposition is very well established by authority. And this principle has been applied in cases of the neglect of the duty of a parent to care for his child, and to provide medical attention. As to whether a parent so neglecting his child is guilty of murder or of manslaughter would depend on the circumstances. If the neglect be wilful or malicious, it is probably a case of murder. If the omission is not malicious, and is a mere case of negligence, the parent is perhaps guilty only of manslaughter.

Power to Require Blood Test of Milk Dealers

(*People ex rel. Schults v. Hamilton, Commissioner of Public Safety, et al. (N. Y.)*, 177 N. Y. Supp. 222)

The Supreme Court of New York, Appellate Division, Fourth Department, reverses an order that denied the relator's motion for a writ of mandamus to compel the issuance to him of a license to sell milk in the city of Rochester, which he had been refused because he declined to submit to a blood test for the purpose of determining whether or not he had ever had typhoid fever or was a carrier of typhoid germs. His application for a license was made first to the health officer of the city, and, secondly, to the commissioner of public safety. The court says that it might be assumed that the regulation for a blood test was not harsh or unreasonable, that it was salutary, and that either the legislature or the common council, by appropriate enactments, could make such a provision applicable generally to milk dealers in the city. In fact, the relator so expressly conceded, and admitted that, if such an enactment did exist, by either the legislature or the common council, he would have no remedy. But neither the legislature nor the common council had so enacted. The sole statutory requirement for lawful trafficking in milk and cream in the city was the possession of a license issued by the health bureau of the department of public safety of the city. The regulation was one devised by either the health officer or the commissioner of public safety. The local health officers were the commissioner of public safety, as head of the department of public safety, and, under him, the health officer; but the power to make general orders and regulations for the preservation of life and health and the execution of the public health law was vested in the common council of the city. That the regulation sought to be maintained for a blood test was one of general application could not be doubted. It was not aimed at the suppression of a nuisance, nor to meet any emergency situation. There was no typhoid epidemic, present or imminent. There was no special reason for believing that the relator either had typhoid or was a carrier of typhoid germs. This case seemed, therefore, to fall squarely within the provisions of the statute, requiring legislation by either the legislature or the common council to be effective. Quite evidently the scheme of all the legislation was to require the concerted action and judgment of more than one individual as a prerequisite to general regulatory measures, leav-

ing in the commissioner and the health officer a discretion only in the manner of applying in detail those general regulations. The commissioner and health officer were administrative officials. They had no power to legislate. They might determine facts and conditions which made applicable the general regulations, and might even prescribe regulations for carrying into effect the general enactments of the appropriate legislative bodies. The discretionary power vested in these officers by the city charter to grant or withhold licenses related only to the limited powers of those officers as defined above, and did not create in them a legislative discretion. However salutary and desirable this particular regulation might be, it could not be given force and effect until the appropriate legislative body had enacted it in a lawful manner. That power so to enact had not been and could not be delegated.

Descriptive Terms and Evidence in Abortion Case

(*State v. Patterson et al. (Kan.)*, 181 Pac. R. 609)

The Supreme Court of Kansas affirms a judgment of conviction of the two defendants, physicians, who were convicted of manslaughter in the fourth and first degrees, respectively, the charge against them being that they had operated on a named woman to produce an abortion, thereby causing her death, while they asserted that the purpose of the operation was to remedy conditions brought about by a venereal disease from which she was suffering, and that she was not pregnant. The court says that complaint was made of a failure of the trial court to give an instruction to the jury under the section of the statute making it manslaughter in the second degree to administer a drug to a woman "pregnant with a quick child" with intent to destroy it, or to employ an instrument with that purpose, when the death of the child or mother resulted therefrom. But such an instruction would not have been proper under the information, which did not charge that the woman was "pregnant with a quick child," but alleged that she was "pregnant with vitalized embryo." The latter expression was not equivalent to that of the statute referred to. "Vitalized," merely means endowed with life. Any human embryo which is not dead is "vitalized." It is no less endowed with life before reaching the stage of development known as quickening than after. A woman is said to be pregnant with a quick child, or quick with child, when the motion of the fetus becomes perceptible, usually about the middle of the period of pregnancy. Not only was this condition not pleaded; it was not indicated by the evidence.

At a postmortem examination of the body of the woman, conducted by the defendants, the uterus was removed and placed in a jar of alcohol. At the trial they produced what they represented to be the same jar and contents, together with evidence that its appearance showed that the uterus was not that of a woman who had been pregnant. The court told the jury in substance that in order for the testimony of experts concerning the appearance of the uterus to have weight with them, they must first find from the evidence that no substitution had been made, that the organ produced was the one taken from the body, and that it had not been tampered with, but had been exhibited to the witnesses in the same condition as when first removed. This instruction was complained of, not as involving any incorrect statement of a principle of law, but as objectionable because it singled out for comment one particular feature of the testimony, and suggested to the jury that the court itself suspected substitution or alteration. But, granting that the specific reference to the question of the genuineness of the exhibit was open to the objection stated, it would not in itself justify a reversal of the judgment.

Several witnesses were permitted to testify that the woman had told them that she was pregnant, and was going to one of the defendants for an operation on that account. This evidence was objected to as incompetent, as being pure hearsay. But it has often been said by courts and text-writers that such testimony is admissible. Moreover, whether or not it was technically competent, the admission of evidence that the subject of the operation, who died as a result of it, had

stated that she was pregnant and was going to see the defendants on that account, was nonprejudicial because not inconsistent with the defense made, when the defendant's own version of the affair was that while the woman was really suffering from gonorrhea, and knew it, she had led her mother and neighbors to believe that she was pregnant, and that she was going to see the defendants on that account, her purpose being to conceal the fact that she had a venereal disease.

Evidence and Timeliness in Action for Malpractice

(*Perkins v. Trueblood* (Calif.), 181 Pac. R. 642)

The Supreme Court of California, in reversing a judgment that was rendered in favor of the plaintiff, and remanding the case for a new trial, says that the court below tried the case without a jury, and made its findings in favor of the plaintiff, which in substance were that the plaintiff broke his leg in March, 1912; that the defendant was employed to reduce the fracture; that the fracture not satisfactorily healing, the defendant separated the surfaces of the bone during the month of April, 1912, and again set the plaintiff's leg; that the defendant performed the latter operation negligently; and that by reason of this the plaintiff had suffered damage in the sum of \$1,250. The defendant's appeal presented the question of the sufficiency of the evidence to support the findings and also the question of the correctness of rulings admitting evidence concerning the plaintiff's condition and the defendant's surgical treatment of him prior to April 9, 1912. While the court's findings rested the plaintiff's cause of action on the defendant's negligent resetting of the plaintiff's leg in April, 1912, nevertheless it would seem that the trial court proceeded on the theory, and correctly so, that the negligence ultimately found against the defendant was dependent in a measure on the condition of the plaintiff's leg at the time of and subsequent to the setting of the original fracture, which occurred in March, 1912. On this theory, evidence relative to the original fracture, its treatment and progress, and process of its healing, was admissible, to the end that it might be determined whether or not the methods resorted to by the defendant in resetting the leg on or after April 9, 1912, were of a nature which an ordinarily skilful surgeon would have given to a leg in such a condition.

Furthermore, this being the theory of the case and the judgment, it followed that there was no merit in the contention that the commencement of the action, wherein the complaint was filed on April 9, 1913, was barred by Subdivision 3 of Section 340 of the Code of Civil Procedure, requiring such actions to be commenced within one year.

Attention is called to the fact that, in spite of the great suffering and financial loss claimed to have been endured by the plaintiff for a period of ten months following the last treatment by the defendant, it affirmatively appeared that the defendant was not requested to give any further treatment, and that the plaintiff failed to place himself under the care of any other surgeon. Moreover, with regard to the fracturing again of the same leg in the same place, when, as the plaintiff testified, he did not fall over 12 inches, and there was no evidence of any circumstance preceding or attending the fall, the supreme court thinks that, in view of the fact that a person may snap a perfectly sound leg in a fall of 12 inches or less, the claim that the defendant's negligence was the proximate cause of the second fracture, found, to say the least, very slight support from the facts revealed by the record; and, on this analysis of the case, the supreme court finds it difficult to consider seriously the claims advanced by the plaintiff.

There was some evidence which tended to show that at the time of the fall and the second fracture the ends of the broken bone overlapped nearly one-half inch, and that there was no complete bony union prior to the treatment by another physician for the final fracture resulting from the fall. In the absence, however, of a showing that such a condition would have been at least improbable, had the leg received reasonably prudent and ordinarily skilful surgical treatment, it could not be said that the mere pathologic con-

dition of the leg in and of itself sufficed to show negligence on the part of the defendant in resetting the leg. In the absence of evidence, it could not be assumed that he proceeded, if he proceeded at all, without ordinary care or skill.

Violation by Physician of Speed Law

(*People v. Seidler* (N. Y.), 176 N. Y. Supp. 677)

The Kings County, N. Y., court, in affirming a judgment of conviction, and of sentence of the defendant to a term of ten days in the county jail, for violation of the speed law, says that the defendant was a practicing physician, who admitted that he was operating his automobile at a rate of speed much in excess of the limit permitted by law, and on the hearing before the magistrate offered one excuse in extenuation of his act, and in this court submitted a different one. After the consequences of his act were forcibly impressed on him by his sentence, it was an easy matter for him to resort to the means which are available to a physician; but such carefully considered claims thus offered could have but little weight on this appeal. Were this his first violation of the speed law, an entirely different situation would present itself; but on five prior occasions he was arrested for similar violations in various parts of the city and by different officers. A physician has no rights on our highways superior to that of any other motorist. The law is no respecter of persons, and all must bow in obedience to it, and he who violates it does so at his peril. We can, however, readily understand that emergencies may occasionally confront a physician who may be called in a "life or death" case, wherein his haste to give relief can be partially excused or entirely overlooked. Such excuse, being ever present in the mind of a physician, may readily be used as a subterfuge to defeat the ends of justice. In this respect, reliance on the value of such form of defense must be placed on the magistrate hearing the evidence, who is in a position to gage properly its dependability. On the hearing in this case, the statements made by the defendant but vainly suggested extenuating circumstances, and the court properly disregarded them.

Society Proceedings

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Annual Meeting, held in Mankato, Dec. 1 and 2, 1919

DR. AARON F. SCHMITT, Mankato, in the Chair

Surgical Treatment of Bunions

DR. C. H. MAYO, Rochester: Several methods of treatment are resorted to according to the conditions present. The usual operation performed is one which I advocated many years ago. A curved incision is made convexly upward over the inner side of the joint. The skin is deflected downward, the bunion bursa is dissected forward and the joint is opened, the bursa being left attached to the inner surface of the first phalanx. One-quarter inch of the head of the articulating surface is removed by bone saw or large bone-biting forceps. This relaxes the extensor and the flexor tendons. The bony projection on the inner side of the head of the great toe is removed, and the bunion bursa is turned into the joint and held by sutures of catgut which also serve to straighten the great toe, thus removing the valgus. The wound is closed without drainage. If flatfoot complicates, the head of the bone should be preserved. The bunion bursa, the overgrowth of bone and the sesamoid bones should be removed, however. If the hallux valgus is marked, the tendon of the extensor hallucis longus should be lengthened about one-fourth inch. If the great toe is bent downward, the sesamoid bones can be removed with a knife or sharp pointed scissors, if they are grasped with strong tenaculum forceps. The sesamoid bones and the articulating surface should not be removed from the same foot. The patients should be up at the end of the first week, using the heel and outer side of the foot. In from fourteen to twenty-one days, a stiff soled shoe may,

be worn. Instructions should be given to every patient as to the size and shape of shoes to be worn following operation.

Treatment of Second Stage of Labor, with Special Reference to Prevention of Injury to Child and to Pelvic Floor

DR. JOSEPH B. DE LEE, Chicago: Watchful expectancy and natural delivery will give the best results in the conditions in which the vast majority of births occur. The indiscriminate use of forceps, of pituitary solution and of forced delivery will do immeasurable harm. In primiparas and in multiparas, with rigid pelvic floor, I shorten the second stage artificially. When the head has reached the pelvic floor and the levator ani muscles have begun to stretch, I consider the advisability of interference. If the pains are strong, a few extra whiffs of ether or gas are given, and a deep episiotomy is made. The patient will then deliver herself; or if the pains lag, two or three drops of pituitary solution are given. Perineotomy is one of the most important parts of the prophylactic forceps, because it is intended to preserve the integrity of the pelvic floor, the subvesical fascia, and the urogenital septum; at the same time it prevents injury to the child's brain. The prophylactic forceps operation is a radical departure from time honored custom, but it has a sound scientific basis for recommendation. It also saves the woman the physical labor of a prolonged second stage. By relieving pressure on the child's brain, the occurrence of idiocy, epilepsy, etc., is lessened. Prophylactic forceps also prevent asphyxia, both in its immediate effects and its remote influence on the early life of the infant.

Intrathoracic Goiter

DR. E. S. JUDD, Rochester: Intrathoracic goiter is one in which the greater part of the thyroid enlargement is situated within the thorax. Substernal goiter is one in which there is a projection of only a part of the thyroid into the chest. This type occurs in nearly 50 per cent. of the goiters coming to operation, while the intrathoracic type occurs in only 5 per cent. Histologically, the intrathoracic goiter is an adenoma, associated in many cases with colloid or carcinoma. The hypertrophied gland of the exophthalmic type is never seen in the totally intrathoracic goiter. There may, however, be a substernal projection from the exophthalmic goiter. The intrathoracic tumor in the benign cases is definitely encapsulated, and can usually be enucleated from its capsule without serious difficulty if the proper treatment is used. The symptoms caused by intrathoracic goiter are mainly the result of pressure on the surrounding viscera. They differ from the symptoms of ordinary cervical goiter only in their intensity. Intrathoracic goiter may be thyrotoxic. The intrathoracic goiter may be recognized by the feeling of a recurring mass when the patient swallows, if pressure is made in the episternal notch with the palpating finger. A finger placed in the pharynx may also make the diagnosis. Ptosis and fixation of the larynx are points in the differential diagnosis. The roentgen ray is of great aid. The operative prognosis is good, except in cases of prolonged toxicosis. The first steps in the operation are the same as in cervical goiter. The thyroid vessels should be divided on one or both sides. The upper pole is then freed. The lateral veins are now divided. Then by making traction on the upper pole, and gradually freeing the intrathoracic part with the finger, the whole lobe may be turned over onto the trachea. If the goiter seems adherent, it may be enucleated by thrusting the finger deep into the adenoma. After the whole gland is lifted into the neck, the inferior thyroid vessels may be handled without difficulty. One should be prepared to perform tracheotomy during and for the first few days following operation. In 150 cases of substernal and intrathoracic goiter occurring at the Mayo Clinic in 1918, the symptoms were of the pressure type. The tumor was on the left side in eighty-one cases, on the right side in forty-five cases, and in the middle portion of the gland in four cases. In sixteen cases, the condition was bilateral. There were 141 adenomas, one hypertrophy associated with adenoma, four carcinomas, and two colloid goiters with small adenoma. Three of the tumors originated from aberrant thyroids.

Acute Perforations of Stomach and Duodenum

DR. N. O. RAMSTAD, Bismarck, N. D.: Perforations of the stomach are more dangerous than those of the duodenum, because of the more infectious character of its contents and the tendency toward general dissemination throughout the abdomen. The prognosis depends mainly on the time which elapses between the rupture and the operation. Undoubtedly, a small number of patients with acute perforation recover temporarily under medical treatment, or the "let alone" plan, but the number is small compared with the recoveries following prompt and efficient operation.

Tuberculids in Recognition of Obscure Tuberculosis

DR. J. H. STOKES, Rochester: While the tuberculous character of tuberculids may be regarded as still open to discussion, the demonstration of their constant association with tuberculosis is now so nearly complete that the occurrence of typical lesions of any one of the various types of tuberculids has a high diagnostic value in the recognition of obscure forms of systemic tuberculous infection. An analysis of a group of patients in the Mayo Clinic has suggested the close association which may exist between erythema nodosum and purpura, and the papulonecrotic tuberculid. The records of the clinic now include a necropsy in a case of erythema nodosum in which death resulted from miliary tuberculosis, and yet no evidence of the existence of any focus of infection other than the tuberculous could be identified. Tuberculids, because of their close association with lymph gland tuberculosis, are often of service in the identification of the tuberculous character of adenopathies, mediastinal glandular enlargements, tuberculosis of the uterine adnexa, etc. The occurrence of a partial positive Wassermann reaction in association with tuberculids, in the apparent absence of syphilis, has been noted. In a study of the diagnostic errors occurring in connection with tuberculids, it was found that only 17 per cent. were diagnosed correctly. Tuberculosis was not suspected from the cutaneous findings in any case; one third of the tuberculids were ignored as being insignificant; two thirds of the mistaken diagnoses were given as syphilis. Syphilis was most often suggested by scars, arthritis and myalgic pains with anemia; one fifth of the patients had sustained needless surgical procedures. The occurrence of false therapeutic effects, due to the action of arsphenamin, in these cases still further increases the possibility of a mistaken diagnosis. The appearance of a tuberculid in an otherwise seemingly healthy individual should be the signal for a searching clinical and roentgenographic examination for a focus of tuberculosis.

Modified Inguinal Hernia Technic

DR. GEORGE EARL, St. Paul: I have never found any functional or anatomic objections to placing the cord completely under the external oblique muscle. This modified technic covers the cord only by the superficial fascia and skin from its exit at the region of the internal ring, but it is covered by nothing else as it goes over the pubic bone, a far more exposed region. There is less liability to strangulation of the cord than when a new external ring is to be formed from the external oblique. Reports from thirty-eight patients operated on show no complaint of pain from the lessened covering, and there have been no recurrences.

Conditions Contraindicating Operation with Stone in Kidney and Ureter

DR. W. F. BRAASCH, Rochester: Probably 75 per cent. of renal stones are passed spontaneously. It is usually inadvisable to operate for stone in either kidney or ureter until at least from three to six months have elapsed since the onset of symptoms. Exceptions to the rule are: excessive and continued pain; evidence of cortical or perinephritic infection, and continued urinary retention; also, if the stone is evidently too large to pass. Conditions permitting the formation of multiple stones are usually surgical. Conditions may be such that operation with bilateral renal lithiasis is definitely contraindicated. Clinical evidence of a low renal function will usually contraindicate operation, when

the symptoms are not very acute or persistent. The operation may be justifiable with acute symptoms, even though the renal function is far below the normal. Removal of stone in the presence of chronic nephritis does not affect the course of the primary nephritis, and unless surgical conditions are urgent, operation is inadvisable. Stones occurring with a bilateral pyelonephritis, however, should be removed even though the symptoms are not urgent. When the opposite kidney is practically functionless or absent, the question arises whether operation on a single kidney or ureter is justifiable. Such operations are frequently done with success. Operation for stone in a polycystic kidney would be justifiable in selected cases. Coincident lesions in other organs are frequently noted. When the several conditions are surgical, that lesion which causes the most acute symptom would naturally necessitate operation first. Hypertrophy of the prostate coincident with renal lithiasis usually takes precedence in regard to operation. Pregnancy, when less than six months, offers no contraindication to operation, and it may be necessary to operate when the symptoms become acute, even in the latter months. As a rule, in the later period of pregnancy, it would be advisable to defer any operation. Attempts to dislodge the stone should not be made in the presence of acute impaction with continued obstruction, acute renal infection, intolerance on the part of the patient to the cystoscope, anatomic deformity, and when the stone is more than 2 cm. in diameter.

Modern Conceptions Regarding Radical Mastoid Operation

DR. HORACE NEWHART, Minneapolis: Every suppurating ear is a menace to the patient. The radical operation or one of its modifications is clinically indicated, with but very few exceptions, in all cases of chronic purulent middle ear discharge which are not permanently cured by persistent conservative treatment, including the removal of all possible causal factors in the nose and nasopharynx.

Surgical Treatment of Gummatous Osteitis of Skull

DR. A. W. ADSON, Rochester: In addition to specific treatment, local surgical treatment, consisting of the removal of the sequestrum, or dead bone, is necessary. After the removal of the sequestrum, wet dressings saturated either in boric acid or salt solution should be applied, and if epidermization is slow, skin grafting may be resorted to later.

Value of the Study of Blood Pressure in Typhoid

DR. J. W. ANDREWS, Mankato: Blood pressure findings are of great value in typhoid. In this disease, without complications, there is always a marked hypotension, the systolic pressure ranging from 100 down to 75 or 80 mm. of mercury. The more severe the case, the lower will go the systolic pressure, probably the effect of the typhoid toxins on the splanchnic circulation. Frequent blood pressure readings will serve in this disease as a guide to prognosis. The leukocyte count is always valuable. There is always leukopenia.

Diagnosis of Cardiac Disease

DR. J. S. GILFILLAN, St. Paul: One should not place too much dependence on a systolic murmur in the diagnosis of a valvular lesion, but should demand other evidence. When a lesion is suspected, the confirming murmur should be sought for at different times and under various conditions.

Publication on Employment of Children.—The Children's Bureau of the U. S. Department of Labor has just issued in the Children's Year Series a pamphlet called "The States and Child Labor." The publications in this series do not go to the general mailing list, but are mailed on request to any address on that list. This new pamphlet summarizes briefly regulations placed by the various states on the employment of children in certain types of occupation. It presents an easy reference to material otherwise only laboriously obtained, and is of such wide interest that it was decided to bring it to the attention of the general list. The pamphlet may be had by both physicians and the laity by addressing the Children's Bureau, Department of Labor, Washington, D. C.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

December, 1919, 3, No. 10

- *An Uncommon Case of Pleural Effusion. H. J. Howk and J. A. Herring, Mount McGregor, N. Y.—p. 585.
- *Tuberculous Empyema. W. S. Duboff, Edgewater, Colo.—p. 590.
- *Further Attempts to Reduce Resistance of Guinea-Pig to Tuberculosis; Effects of Various Local Irritants. H. J. Corper, New Haven, Conn.—p. 605.
- *Study of Clinical Activity. L. Brown, F. H. Heise, S. A. Petroff and H. L. Sampson, Trudeau, N. Y.—p. 612.
- *Etiologic Studies in Tuberculosis. L. Brown, S. A. Petroff and G. Pesquiera, Trudeau, N. Y.—p. 621.
- Types of Tuberculous Lesions Found at Necropsy in a Military Hospital. E. D. Downing, Denver.—p. 631.

An Uncommon Case of Pleural Effusion.—In this case the effusion seems to have been "locked up" by adhesions. The diagnosis was in doubt. The patient complained of pain, which was a most distressing symptom up to the time when the fluid spread throughout the pleural cavity, and was completely and permanently relieved by that incident. Hence, the pain was probably due in large measure to the pressure of the accumulated fluid. Evidently, bands of tissue, resulting from a prolonged pleuritis, held the fluid within strict bounds.

Tuberculous Empyema.—Duboff's observations are based on a clinical study of twenty cases of tuberculous empyema.

Further Attempts to Reduce Resistance to Tuberculosis.—Using the macroscopic lesions of tuberculosis as an index of the acceleration of tuberculosis in the guinea-pig, Corper found that regional gland crushing, and the subcutaneous injection of virulent human tubercle bacilli in various sized doses, had no appreciable influence on the progress of the infection as compared with that obtained in control guinea-pigs. Lamp black injected subcutaneously, coincident with the tubercle bacilli, had a distinct retarding influence, while finely pulverized glass had a markedly accelerating influence, though not sufficient to be available for practical use in accelerating the guinea-pig diagnosis for the presence of tubercle bacilli in pathologic fluids.

Clinical Activity.—The object of this paper is to define clinical activity in such a manner that it may be of use in ordering the life and affairs of the tuberculous patient.

Etiologic Studies in Tuberculosis.—The danger of dust in rooms in a health resort, from telephone receivers, the danger of eating from utensils improperly cleansed, the danger from infected hands through handshaking or from knobs of doors, the danger of transmission by infected flies, at least in guinea-pigs, as a factor in causing tuberculosis has not yet been conclusively proved, and the experiments made by Brown et al. tend to belittle it. On the other hand, the danger of transmission of tubercle bacilli by kissing, or the transference of the tubercle bacilli to eating utensils, and thence, if not cleansed, to a second person, has been borne out. The authors express the hope that in publishing their experiments others may realize that the etiology of tuberculosis is not a closed book but one that contains many disconcerting and confused pages that need to be rewritten.

Archives of Dermatology and Syphilology, Chicago

January, 1920, 1, No. 1

- *Two Unusual Cases of Ringworm, One of Them Due to a Fungus (*Trichophyton Rosaceum*) Producing Pink Cultures. M. B. Hartzell, Philadelphia.—p. 1.
- *Cases of Chronic Papular Itching Eruption of Axillae and Pubes (Fordyce) S. M. Withers, St. Louis.—p. 8.
- *Statistical Study of Extragenital Chancres. H. W. Porter, St. Louis.—p. 15.
- Precancerous Dermatoses: Further Course of Two Cases Previously Reported. J. T. Bowen, Boston.—p. 23.
- *Serious Reactions from Salvarsan and Diarsenol Brands of Arspheamin. Unusual Blood Pictures; Report of Fatal Case. J. E. Moore and F. E. B. Foley, Baltimore.—p. 25.
- Clinical Study of Lichen Planus. G. D. Culver, San Francisco.—p. 43.
- Spore Identification in Scrapings. R. W. Bachman, Allentown, Pa.—p. 50.

*Cases of Urticaria Probably Due to Syphilis. Clinical Report. L. Hollander, Pittsburgh.—p. 55.

*Universal, Exfoliative Dermatitis from Sodium Cacodylate. W. A. Pusey, Chicago.—p. 57.

Ringworm Due to Trichophyton.—In Hartzell's first case, apart from the excoriations, the eruption, as a whole, bore considerable resemblance to a slowly spreading superficial nodular syphiloderm for which it might very readily have been mistaken on superficial examination. In addition to the affection of the skin, the nails of the index, middle and ring fingers of the right hand presented marked evidence of disease. They were rough and lusterless, with ragged and broken free borders. In scrapings taken from the skin and the nails an abundance of mycelium, presenting the morphologic characters of the trichophyton was readily demonstrated. In the second case a diagnosis of syphilis had been made by a former medical adviser, a genito-urinary specialist of considerable repute, and three or four injections of arsphenamin had been given, without any effect on the disease. In scrapings removed from the diseased areas Hartzell found numerous mycelia.

Papular Itching Eruption.—Withers reports four cases. In one case a complete microscopic study was made of a section removed from the axilla. The pathologic changes consisted of an acanthosis with hyperkeratosis, edema, perivascular infiltration and changes in the sweat glands, with keratocystomas of the sweat glands. The clinical picture consisted of a chronic circumscribed pruritus of the axillae and pubes principally, accompanied by a lichenification with keratocystomas of the deep sweat glands.

Extragenital Chancres.—Porter adds to the previous statistics on extragenital chancres the cases seen at the Barnard Free Skin and Cancer Hospital and the Washington University Dispensary. From August, 1905, to August, 1919, 225 patients presented themselves at the Barnard Hospital dispensary with a chancre as the chief complaint, or with the chancre still in evidence. Of these, fifty-five had extragenital primary sores, giving the rather high percentage of 24.5 per cent., or a percentage over half again as large as the highest percentage quoted by Montgomery. At the Washington University Dispensary there are recorded 106 cases of chancre, of which twelve were extragenital.

Arsphenamin Reactions.—Four cases are reported by Moore and Foley of severe reactions to the salvarsan or diarsenol brands of arsphenamin with an unusual blood picture, characterized by leukopenia, eosinophilia and increase in large lymphocytes and transitional groups, together with other evidence of destruction of the bone marrow. In a fatal case of salvarsan poisoning there was found at necropsy a markedly aplastic bone marrow showing degenerated cells and absence of the more mature forms of the myelocytic series. The fatal case showed for the first time, so far as can be determined, approximately the same kidney lesion as that produced in experimental animals by Pearce and Brown.

Urticaria Probably Due to Syphilis.—Hollander claims that no cases of puriginous lesions have as yet been attributed to syphilis. In his two cases the finding of syphilis was incidental as the patients consulted him on account of local, edematous, evanescent, papular, wheallike, extremely itchy lesions, appearing and disappearing, which disappeared entirely under antisyphilitic medication.

Universal Exfoliative Dermatitis from Sodium Cacodylate.—Pusey's patient had psoriasis. He went to a sanatorium for treatment. He was given ten or twelve daily injections of sodium cacodylate, each three-quarters grain. A few days after the last injection a redness of the skin appeared, which quickly became universal and developed. When Pusey saw the man three weeks later he had a severe universal, dry, exfoliative dermatitis, quite similar in appearance to the Hebra type. The condition was absolutely universal. The skin was thickened, inelastic and red, and scaling profusely. On the hands and feet the process was particularly intense. There was extreme hyperkeratosis of the palms and soles, and the condition was only less pronounced on the backs of the hands and feet. There was a good deal of burning of

the general surface, and there were tenderness and discomfort on surfaces exposed to pressure. He had been confined to his bed for two weeks previously, during which time he had shown an afternoon temperature of from 101 to 102 F. Under treatment improvement was very slow.

Arkansas Medical Society Journal, Little Rock

December, 1919, 16, No. 7

Diagnosis and Treatment of Diseases of Gallbladder. W. R. Brooksher, Ft. Smith.—p. 135.

Is It Necessary to Resect More Than One Rib in Treatment of Suppurative Pleurisy? R. C. Dorr, Batesville.—p. 137.

Chronic Purulent Otitis Media. N. E. Frazer, Pangburn.—p. 139.

Boston Medical and Surgical Journal

Jan. 8, 1920, 182, No. 2

Diagnosis of Lesions of Nervous System Produced by Violent Explosions in Close Proximity Without External Lesions. T. A. Williams, Washington, D. C.—p. 27.

*History of Epidemic Encephalomyelitis. F. G. Crookshank, London.—p. 34.

History of Epidemic Encephalomyelitis.—Clinical occurrences of the nature that we now ascribe to encephalomyelitis, or encephalomyelomeningitis, Crookshank says have been recorded in modern times for at least 450 years. In great part, these occurrences have been noted as incidental to major prevalences, known historically as the sweating sicknesses, the epidemic catarrhs, or influenzas and the like. Special prevalences of these occurrences have also been described as manifestations of special diseases. These special prevalences have usually appeared shortly before or shortly after major "influenzal" epidemics, or else in geographical proximity to endemic-epidemic and endemic-influenzal prevalences. Epidemic encephalomyelomeningitis represents an intensive and specialized reaction that has the same epidemiologic relation to pandemic influenza as have the prevalences and epidemics of "septic" pneumonia, of gastro-intestinal illness, and of other maladies described as occurring before and after the wide diffusions generally referred to as pandemic influenza.

Bulletin of Johns Hopkins Hospital, Baltimore

December, 1919, 30, No. 346

Henry Mills Hurd, the First Superintendent of Johns Hopkins Hospital. T. S. Cullen, Baltimore.—p. 341.

Journal of Cancer Research, Baltimore

October, 1919, 4, No. 4

*Attempts to Obtain a Transplantable Tumor in Higher Species of Animals. F. C. Mann, Rochester, Minn.—p. 331.

*Chemical Composition of Blood in Cancer. R. C. Theis and W. S. Stone, New York.—p. 349.

*Spirotera Carcinomata and Their Relation to True Malignant Tumors. Cancer Age. J. Fibiger, Copenhagen.—p. 367.

Transplantation of Tumors.—Experiments are reported by Mann in which attempts were made to transplant tumors of the dog and cat. Transplants of a mammary carcinoma of a dog were injected into 134 dogs, and transplants of a fibroma of a cat were injected into thirty-two cats. A transplantable tumor was not obtained in either series of experiments, although a few transplants grew for a short time. The transplants of the fibroma which were made in the donor grew. The results obtained in these experiments in which tumor was employed, are strikingly similar to the results of autotransplantation, and homotransplantation of normal tissue. The problem of developing a transplantable tumor in the higher species of animals is, it would seem, closely allied to the problem of making homotransplants of normal tissue grow.

Chemical Composition of Blood in Cancer.—Theis and Stone determined sugar and the nonprotein nitrogen constituents, except creatinin and creatin, in blood obtained from 189 patients suffering from a malignant or allied disease such as leukemia or Hodgkin's disease. They found that nonprotein nitrogen and urea nitrogen are, in general, low in the blood of cancer patients. Amino-acid nitrogen is slightly above normal. Low results are not so obvious when other pathologic conditions coexist. Nonprotein nitrogen and urea nitrogen of blood are consistently low in clinically malignant cases. Uric acid, except in cases with

kidney complications and in two cases of melanoma, is not abnormal in cancer blood. Blood sugar is not generally increased in cancer. In 26 per cent of these cases (diabetics and nephritics excluded) the figure was somewhat above the normal and in 13 per cent, it was below normal.

Spiroptera Carcinomas.—Fibiger claims that by transmission of *Spiroptera neoplastica* (*Gongylonema neoplasticum*) to black and white rats and white mice, the development of neoplasms can be induced in the fundus of the stomach, and in rats in the tongue also. These neoplasms possess exactly the same histologic structure as malignant epitheliomas (keratinizing squamous cell carcinoma) in man and animals. They grow invasively into connective tissue and muscular tissue, and produce metastases in lymph nodes, perineural lymph spaces, the lung and the peritoneum. They continue their growth whether or not the spiropterae (as observed in the tongue) disappear entirely or only partly. They are transplantable, and when transplanted grow invasively into organs and tissues. Neither the metastases nor the transplanted tumors contain spiropterae, which have no share in their development and growth. That these tumors are true carcinomas cannot be doubted, and the fact that they may occur in younger animals is no reason why they should not be classed among the true malignant neoplasms.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

November, 1919, 14, No. 3

- *Benzylcarbinol: A Local Anesthetic. A. M. Hjort and J. T. Eagan, New Haven, Conn.—p. 211.
- Comparative Skin Irritant Properties of Dichlorethylsulphid ("Mustard Gas") and other Agents. P. J. Hanzlik, Cleveland, and J. Tarr, U. S. Army.—p. 221.
- *Anaphylactoid Phenomena from Thromboplastic Agents. P. J. Hanzlik, H. T. Karsner and J. Fetterman, Cleveland.—p. 229.
- *Paradichlorbenzene and Paradibrombenzene. T. Sollmann, Cleveland.—p. 243.
- *Experiments with Carvacrol. T. Sollmann, Cleveland.—p. 251.
- *Experimental Study of Action of Chloramines. B. Fantus, and M. I. Smith.—p. 259.
- *Histamine and Pituitary Extract. D. Cow, Cambridge.—p. 275.
- *Histamine and Pituitary Extract. J. J. Abel and D. I. Macht, Baltimore.—p. 279.

Benzylcarbinol.—Benzylcarbinol, or rose oil, an aromatic side-chain alcohol, Hjort and Eagan claim possesses local anesthetic properties which from laboratory studies seem to be superior to those of benzyl alcohol. The toxicity of rose oil, as determined on white mice and a dog, is about the same as that recorded by Macht for benzyl alcohol. Benzylcarbinol is more stable than benzyl alcohol, another point in favor of the former. The solubility of the rose oil is sufficient for its therapeutic use.

Anaphylactoid Phenomena from Thromboplastic Agents.—Hanzlik and his associates found that the thromboplastic agents rich in protein (thromboplastin and hemostatic serum) are distinctly harmful when injected intravenously and subcutaneously into guinea-pigs, producing anaphylactoid symptoms and injury to the circulation; and death with large doses of thromboplastin intravenously. Coagulen, which contains only traces of native protein, produced more pronounced anaphylactoid symptoms and also injured the circulation. The injurious effect of the thromboplastins and hemostatic serum the authors claim may be accounted for in part by trikresol (the preservative) and to a greater extent by the protein fraction. This does not appear to be true of coagulen which contains neither trikresol nor native protein. Caution is therefore necessary when employing these agents intravenously and subcutaneously. Kephalin appears to be relatively harmless as compared with the other thromboplastic agents studied.

Paradichlorbenzene and Paradibrombenzene.—The toxicity of paradichlorbenzene for earthworms, Sollmann says, suggests that it may be of value as an anthelmintic. Paradibrombenzene has similar chemical properties, but a somewhat different and less disagreeable odor, and would, therefore, be more suitable for internal administration. Both compounds have a high toxicity for earthworms. Experiments were tried on dogs but this method is inconclusive.

The substances deserve clinical trial when their toxicity has been more fully determined. So far, no toxic effects have been observed from oral administration, even of very large doses. Their absorption is probably very slight. In one experiment with paradibrombenzene, the absorption, judged by the bromine excretion, was only 3 mg. after the administration of 1 gm.

Experiments with Carvacrol.—Carvacrol is an isomer of thymol which can be produced at a low cost from spruce turpentine. It is said to be actively germicidal, and has been used as a counterirritant anesthetic against toothache. Sollmann says that from its composition, it seems probable that it might be used as an anthelmintic, especially against hookworm, in the place of the much more expensive thymol. The gastric administration of carvacrol to dogs, in doses up to 0.5 c.c. per kilogram (corresponding to about 30 c.c. per man) produced no toxic symptoms within three weeks. However, much smaller doses (0.1 c.c. per kilogram equivalent to 5 c.c. per man) apparently produced marked congestion of the small intestines, liver and kidneys. It is probably more irritant and toxic than thymol. This enjoins caution in its use. Sollmann is of the opinion that the drug seems to deserve clinical trial as an anthelmintic substitute for thymol. The administration, however, must be worked out cautiously. The routine should be the same as for thymol, and the dosage should be started considerably smaller, until the zone of safety has been determined.

Action of Chloramines.—Fantus and Smith studied the action of the chloramines on animal life. They found that unicellular animals are promptly killed by very dilute solutions of soluble chloramines. The chloramines are powerful irritants, causing inflammatory edema of the subcutaneous tissue, and even necrosis of the overlying skin on hypodermic injection, inflammation of mucous membranes on local application, and vomiting on oral administration. Chloramine-T depresses the central nervous system in the order of: brain, medulla, spinal cord. On intravenous injection, chloramine-T produces pulmonary edema, probably due to the chlorine in the molecule, as sodium p-toluene sulphonamine given intravenously does not produce such effect. The mechanism of the chloramine-T pulmonary edema is probably the same as that produced by chlorine gas inhalation described and studied by Schafer. The hemolytic power of chloramine-T is due chiefly to its alkalinity, as is shown by the fact that it is also displayed by chlorine-free sodium p-toluene sulphonamine. On the other hand, p-toluene sulphonamine, containing no dissociable alkali, is not hemolytic. Hemoglobin is changed to alkaline hematin by the first two bodies. Methemoglobin formation due to the chlorine in chloramine-T occurs; but merely to a slight degree, and was demonstrable only in the test tube. Dichloramine-T likewise is slowly hemolytic and slowly changes hemoglobin to methemoglobin in vitro.

Histamin and Pituitary Extract.—Cow says that if the uterus of the mouse is treated with histamine, it responds by relaxation, a response similar to that which the guinea-pig's uterus makes to epinephrin, while pituitary extract applied under the same conditions produces an increase in tonus. These results do not appear to bear out the hypothesis advanced by Abel that the plain-muscle-stimulating principles of histamine and pituitary extract are identical.

Histamin and Pituitary Extract.—Abel and Macht maintain that the uterus of the mouse and of the guinea-pig react in the same way toward pituitary extracts and salts of histamine, in the sense that both tracts of plain muscle respond to small and presumably comparable doses by contractions and increase of tonus, the uterus of the guinea-pig being the more sensitive of the two to minute doses of the two agents. Both tracts of plain muscle are easily paralyzed by comparable doses of pituitary extracts and of histamine salts. An interesting parallelism, therefore, is shown to exist in the manner in which comparably weak solutions of the two agents stimulate both tracts of plain muscle to an equal degree, while equally strong solutions of the two agents paralyze both tracts. The rat's uterus presents certain anomalies in its reaction to both pituitary extracts and histamine as compared with the reaction of the uterus of

the mouse or guinea-pig to these agents. The hypothesis that histamine may be present in the posterior lobe of the pituitary gland in two forms (a) as a histamine compound (b) as free histamine in equilibrium with the compound is now being put to the test by the authors.

Kansas Medical Society Journal, Topeka

December, 1919, 19, No. 12

- Classical Amputations of Foot and Ankle. T. G. Orr, Rosedale.—p. 289.
Nontubercular Joints in Children. C. B. Francisco, Rosedale.—p. 291.
The Chancre. C. C. Dennie, Rosedale.—p. 292.
Significance and Treatment of Hematemesis. P. T. Bohan, Rosedale, Kan.—p. 293.
Arsphenaminized Serum Introduced Directly Within the Cranium. A. L. Skoog, Kansas City, Mo.—p. 295.
Obstruction of Common Bile Duct. M. T. Sudler, Rosedale.—p. 297.
Etiology of Influenza. H. R. Wahl, Rosedale.—p. 298.

Kentucky Medical Journal, Bowling Green

December, 1919, 17, No. 12

- Overseas Observations. I. Abell, Louisville.—p. 450.
Overseas Observations. D. Barrow, Lexington.—p. 455.
Treatment of Complicated Fractures. W. B. Owen, Louisville.—p. 459.
Early Diagnosis in Pulmonary Tuberculosis. J. W. Scott, Lexington.—p. 462.

Maine Medical Association Journal, Portland

December, 1919, 10, No. 5

- What Has the Medical Profession Learned by Its Experiences in the Recent War? C. Frothingham, Boston.—p. 127.
Reflex Symptoms of the Upper Abdomen Caused by Chronic Appendicitis. R. W. Wakefield, Bar Harbor.—p. 134.
Psychopathic Persons. F. C. Tyson, Augusta.—p. 140.

Medical Record, New York

Nov. 29, 1919, 96, No. 22

- *Modern Medical Treatment of Chronic Ulcer of Stomach and Duodenum; Sippy Method. S. Weiss, New York.—p. 867.
Roentgen-Ray Diagnosis of Diseases of Thoracic Viscera. J. S. Diamond, New York.—p. 873.
Mentally Deficient Child with a Protracted Elevation of Temperature. G. D. Wolf, New York.—p. 880.
Treatment of Empyema in Army. C. Georg, Jr., and J. T. O'Neill, U. S. Army.—p. 883.
*Case of Retroversion with Unusual Symptoms. L. F. Herz, New York.—p. 885.

Modern Medical Treatment of Chronic Ulcer of Stomach and Duodenum.—Weiss says that medical treatment, properly used, with the new and more exact methods we now have for diagnosis and observation, will cure more chronic ulcers than surgery. Not necessarily because it is better treatment, but because it is always used first.

Case of Retroversion with Unusual Symptoms.—Herz's patient complained chiefly of extreme weakness in the legs when standing on her feet for more than five minutes at a time. She would be compelled to sit down or lean against some object from sheer weakness. She also complained of dysmenorrhea, with passage of clots. The pain preceded the onset of menstruation by two days, and was often so severe as to confine her to bed. Both the weakness and dysmenorrhea were of five years' duration. Headache and backache were absent. Vaginal examination showed a third degree retroversion. A curettage was first done, and then a Gilliam suspension. The dysmenorrhea disappeared very promptly. The menses were somewhat profuse for a few times. The feeling of weakness in the legs disappeared more gradually, but as the patient regained her strength after the operation, she soon overcame this former disability.

Missouri Medical Association Journal, St. Louis

January, 1920, 17, No. 1

- Intestinal Obstruction. H. S. McKay, St. Louis.—p. 1.
Principles of the Carrel-Dakin Treatment of Infected Wounds. H. E. Happel, St. Louis.—p. 2.
Multiple Infection. W. W. Duke and R. L. Diveley, Kansas City.—p. 4.
Centenary of Stethoscope. L. Clendening, Kansas City.—p. 9.
Kidney Injuries. H. M. Young, St. Louis.—p. 12.
Pseudo-Appendicitis. J. J. Link, St. Louis.—p. 14.
Danger of Unguarded Use of Heliotherapy in Laryngeal Tuberculosis. N. Barlow, St. Louis.—p. 18.
*Adenoid Diphtheria; Report of Case. E. L. Myers, St. Louis.—p. 20.
Intrascrotal Hydrocele of Cord with Cryptorchidism and Hernia. Report of Case. E. D. Twyman, Kansas City.—p. 21.
Gastric Syphilis. Report of Case. H. D. McGaughey and J. I. Tyree, Joplin, Mo.—p. 21.

Adenoid Diphtheria.—In Myers' case the vault of the nasopharynx was filled with a yellowish white, thin membrane apparently covering an adenoid growth of immense proportions. Twelve hours after antitoxin examination, the post-nasal space was absolutely clear of any membrane. Myers directs attention to the fact that a case may clear up in its nasal aspect as far as the diphtheria is concerned and the adenoid growth might be the only seat of the infection. A low temperature (97.6 F.) with a rapid pulse (160) shows a toxemia. Taken in connection with the physical depression, plus the finding of a membrane in the nasopharynx it undoubtedly points to diphtheric infection of the adenoid tissue.

Nebraska State Medical Journal, Norfolk

December, 1919, 4, No. 12

- Primary Sources of Infection. H. B. Lemere, Omaha.—p. 347.
Roentgen Ray Interpretation of Ethmoid Problem from Clinician's View Point. W. P. Wherry, Omaha.—p. 349.
Simple Office System for Measuring Astigmatism by Subjective Method. J. M. Banister, Omaha.—p. 352.
Types of Operation Suitable for Resection of Malignant Growths of Lower Sigmoid. J. E. Summers, Omaha.—p. 354.
Roentgen-Ray Diagnosis of Peptic Ulcer. O. E. Liston, Lincoln.—p. 358.
Comprehensive Examination of Stomach and Duodenum. J. W. Shuman, Sioux City, Ia.—p. 361.
Treatment of Acute Lung Troubles in Children. E. Mitchell, Grand River, Ia.—p. 364.
Condition of Birth Registration in Nebraska. W. F. Wild, Lincoln.—p. 366.
Climate in Treatment of Tuberculosis. M. Biesenthal, Chicago.—p. 372.

New Orleans Medical and Surgical Journal

December, 1919, 72, No. 6

- Control of Venereal Disease. W. Edler, New Orleans.—p. 309.
Id. P. J. Gelpi, New Orleans.—p. 317.
Pertinent, Constructive Health Activities. O. Dowling, New Orleans.—p. 325.
Diagnosis and Treatment of Gastric and Duodenal Ulcer. J. E. Knighton, Shreveport.—p. 332.
Ureteral and Prostatic Calculi. E. P. Merritt, Atlanta.—p. 335.
Surgery of Gallbladder. M. J. Gelpi, New Orleans.—p. 338.
Skin Diseases Among Porto Rican Troops. H. Goodman, New York.—p. 343.
Mechanism of Spontaneous Elimination of Yellow Fever from Endemic Centers. H. R. Carter, U. S. P. H. Service.—p. 347.

January, 1920, 72, No. 7

- Gastro-Intestinal Disease at Camp Beauregard. A. L. Levin, New Orleans.—p. 382.
Infectious Diarrhea. F. J. Kinberger, New Orleans.—p. 395.
*Picric Acid; A Preoperative Disinfectant. O. C. Cassegrain, New Orleans.—p. 398.
Prevention and Treatment of Influenza and Influenzal Pneumonia. G. A. Hogan, Birmingham.—p. 402.
*Evolution of Successful Treatment for Complicated Cases of Influenza. J. F. Points, New Orleans.—p. 408.
*Induction of Anesthesia and Analgesia by Oral Administration of Various Drugs; Report of Cases. A. Ficklin, New Orleans.—p. 413.
Blood Pressure in Yellow Fever. J. B. Guthrie, New Orleans.—p. 420.

Picric Acid as Disinfectant.—The use of 5 per cent. picric acid solution is advocated by Cassegrain as a preoperative disinfectant, because it thoroughly disinfects and can be used with soap and water; it does not irritate the skin, and it is approximately 40 per cent. cheaper than iodine.

Emetin in Complicated Cases of Influenza.—Points endorses the value of emetin hydrochlorid as a cure for the complicated cases of influenza.

Induction of Anesthesia and Analgesia.—Ficklin endorses the production of anesthesia by the oral administration of 5 c.c. of chloroform and 20 c.c. each of ether and liquid petrolatum. The maximum effects last from one-half to three-fourths of an hour. After an hour the patient rouses easily. Vomiting occurs in a small proportion of cases. Alarming symptoms have never been observed. The effects of the drugs are intensified and prolonged by the administration of morphin.

New York Medical Journal

Dec. 27, 1919, 110, No. 26

- Scientific Basis of Drink Control: Scientific Study of Inebriety. L. D'Abernon, London.—p. 1053.
Quartz Ultraviolet Therapy and Kinetic Energy. D. McCaskey, New York.—p. 1058.
Deformities of Hand. A. B. Gill, Philadelphia.—p. 1061.

- *Principles of New Method of Administering Digitalis. H. E. B. Pardee, New York.—p. 1064.
Gastrointestinal Symptoms in Disturbances of Thyroid. L. W. Kohn, New York.—p. 1066.
Problem of Reducing Mortality from Pulmonary Tuberculosis. S. A. Savitz, Philadelphia.—p. 1068.
Gonococemia and Metastatic Gonorrhea. H. I. Goldstein, Camden, N. J.—p. 1069. To be concluded.
Local Anesthesia; Plea for Its More General Use. A. H. Noehren, Buffalo.—p. 1074.

Administration of Digitalis.—The points which Pardee emphasizes are: The initial dose must be sufficient to bring the patient to the stage of slight poisoning, which cannot be accomplished within a reasonable time unless we use doses larger than have been used ordinarily heretofore. If a continued digitalis effect is desired, it will not be obtained satisfactorily unless the patient is kept at a high level of saturation with the drug; his body must be nearly full, not nearly empty, or any failure to obtain good results cannot be interpreted as a failure of digitalis therapy. The nausea and vomiting which result from digitalis poisoning can be avoided if special case is used in observing the patient during the periods when he is receiving a daily dose which is above the average rate of 20 minims of the tincture a day at which the body can dispose of the drug. The variable susceptibility of different patients is an important thing to recognize. The amount of digitalis which will cause the appearance of these early signs of poisoning bears a definite relation to the weight of the patient. On the average a total dose of 2 minims of the tincture to each pound of body weight will produce these early toxic signs. If a patient, whose susceptibility is greater than the average, should receive such a dose, he would certainly be in danger of fibrillation of the ventricular muscle, and death. Those patients whose susceptibility for digitalis is less than the average must also be borne in mind. Therefore, if the average dose is insufficient to produce clinical improvement, and has not caused the appearance of toxic signs, continue to give the drug, watching carefully for the signs of early poisoning and not stopping digitalis until they appear. The average rate at which the body disposes of the drug, Pardee found to be 22 minims of the tincture a day, but here, again, there are considerable variations from one individual to another, as low a rate as 10 minims and as high as 40 minims daily being encountered. In spite of this the dose of 10 minims, twice a day, beginning three or four days after an initial digitalization, will not bring any patient to the toxic stage again very quickly, even though he may dispose of the drug at a much slower rate than the average.

Jan. 3, 1919, 111, No. 1

- *Tubed Pedicle in Plastic Surgery. H. D. Gillies, London.—p. 1.
Palliative Treatment of Urethral Stricture. M. Stern, New York.—p. 4.
Diverticulum of Esophagus. Report of Two Cases, One Double. H. Arrowsmith, Brooklyn, N. Y.—p. 8.
Aseptic Catheterization of Urinary Bladder. A. L. Soresi, New York.—p. 10.
*Clinical Experience with Feeding of Solids to Nurslings. H. Lowenburg, Philadelphia.—p. 12.
Wood Alcohol Poisoning. S. D. Hubbard, New York.—p. 16.
Nasal Obstruction Due to Abnormal Action of Nasal Mucosa. M. S. Ittelson, Brooklyn.—p. 19.
Respiratory Gymnastics in Tuberculosis. H. C. Lane, Denver.—p. 21.
Gonococemia and Metastatic Gonorrhea. H. I. Goldstein, Camden, N. J.—p. 22.

Tubed Pedicle in Plastic Surgery.—The tubed pedicled skin flap was devised by Gillies. A strip of skin, usually between $2\frac{1}{4}$ and 3 inches in breadth, is raised from the neck to form the pedicle, its upper and lower extremities being left untouched. The two edges of the pedicle are accurately sutured together, skin edge to edge, by a continuous suture. The pedicle, now tubed, lies like a sausage between base and extremity. In the course of about three weeks, considerable arterial and venous anastomosis has occurred in the pedicle. The flap may now be raised from the chest and sutured into position on the face, the pedicle being left in its tubed condition. It is obvious that the pedicle cannot become infected. It will stand a considerable amount of twisting and even kinking, and the blood supply of the flap is enormously improved. When the flap has taken root on the face, the pedicle may be divided and returned to the neck, or, as is more commonly the case, the pedicle is divided at its neck

end, opened out until it remains flat, and spread on some other portion of the face. Once having placed the flap onto the face, it is possible to use the pedicle in a variety of ways and positions. Flaps of skin can thus be brought, by stages, from a long distance to the face. In other parts of the body which are the site of severe burns and contractions, larger flaps of skin may be used to relieve the disability by this method.

Feeding Solids to Nurslings.—The availability of solid foods to the nursing infant, a procedure commonly regarded as dangerous and unscientific, is discussed by Lowenburg. Of 128 patients, seventy-six, or more than one half, received solid food between the ages of six and eight months and thirty (about 25 per cent.) at the age of six months. None of these infants, except those suffering from severe diarrhea, received these prepared solids exclusively, i. e., milk in some form, either human or properly adapted cow's milk or both, was simultaneously fed. It is demonstrable, however, that the addition of these substances to the diet in early infancy is not only harmless but decidedly advantageous, and that less dependence need be placed on milk as an exclusive article of sustenance during this period of existence. In no case did vomiting occur as the direct result of beginning the administration of prepared solids. Diarrhea can be controlled absolutely and cured by the withdrawal of milk and milk foods and the substitution of properly prepared solids. Constipation is invariably relieved when the greater portion of the solid material fed is represented by green vegetables. The weight usually falls when milk is withdrawn entirely. The varieties of foods employed embraced all available and edible solids from either the vegetable or animal kingdom. Semisolids, such as cereals and soft eggs, were also included. No infant under 1 year of age was fed meat or fish. All varieties of cereals, eggs, potatoes, lima and string beans, spinach, peas, squash, carrots, beets, beet tops, swiss chard, boiled lettuce, stewed celery, baked apples, prune pulp, practically formed the group from which selection was made. Meats and fish have been used with good effect between the ages of 1 year and 18 months.

New York State Journal of Medicine

December, 1920, 19, No. 12

- *Diagnostic Methods in the Anemias. A. H. Sanford, Rochester, Minn.—p. 415.
*Treatment of Pernicious Anemia. L. Hamman, Baltimore.—p. 420.
Transfusion of Citrated Blood; Technic and Indications. R. Lewisohn, New York.—p. 431.

Diagnostic Methods in Anemias.—This paper was abstracted in THE JOURNAL, May 31, 1919, p. 1638.

Treatment of Pernicious Anemia.—Hamman's article may be summarized as follows: Pernicious anemia is inevitably fatal and treatment at best can but promote and prolong the remissions that characterize the natural course of the disease. There is not conclusive evidence to prove that one method of treatment brings on remissions more constantly than another, nor that it more surely prolongs remissions thus begun. We depend solely on clinical impressions derived from the observation of individual patients for our estimate of the value of treatment. Such observation teaches us that spontaneous remission may be in every way as satisfactory as remission following the use of any method of treatment. In pernicious anemia as well as in all other conditions for which we have only symptomatic or palliative treatment, success depends more on a judicious selection from among all available methods of treatment and their proper combination than on a onesided advocacy of a single method. Rest, feeding, arsenic, transfusion, the eradication of foci of infection and, perhaps, also splenectomy have a definite place in the treatment of pernicious anemia. But who shall say which feature of the plan of treatment is the potent influence?

South Carolina Medical Ass'n Journal, Greenville

December, 1919, 15, No. 12

- Some Impressions of Eastern Clinics. E. A. Hines, Seneca.—p. 643.
The Ophthalmologist as Contrasted with the Eye, Ear, Nose and Throat Man. E. S. Waring, Columbia.—p. 645.
*Case of Congenital Heart Lesion with Unusual Origin and Size of Pulmonary Artery. H. H. Plowden, Charleston.—p. 649.

Congenital Heart Lesion with Unusual Origin of Pulmonary Artery.—In Plowden's case, leading from the right ventricle into the left ventricle, through the interventricular septum at its upper end, was an almost circular opening, one-half inch in diameter. No pulmonary artery could be found leading away from the heart. The only openings into or out of the right ventricle were the tricuspid orifice and the opening from the right to the left ventricles. The entire thoracic aorta was removed. Coming off from the middle of the under surface of the transverse arch of the aorta an abnormal branch was found. It measured one eighth inch in diameter. This vessel was also cut off very short and in view of the absence of the pulmonary artery elsewhere, Plowden believes that this must be the abnormally placed vessel.

Southern Medical Journal, Birmingham, Ala.

December, 1919, 12, No. 12

- Wider Influence of Physician. L. S. Barker, Baltimore.—p. 719.
 Medicine's Daily Debt to Roentgenology. J. S. McLester, Birmingham, Ala.—p. 735.
 Application of Army Methods in Organization of Civilian Hospitals. S. McGuire, Richmond.—p. 739.
 Tribute to Physicians of South Who Made the Supreme Sacrifice. F. K. Boland, Atlanta, Ga.—p. 743.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

December, 1919, 27, No. 12

- Closer Cooperation Between Various Special Branches. J. Beck, Chicago.—p. 257.
 A New Operation for Glaucoma. E. J. Curran, Rosedale, Kan.—p. 273.

Tennessee State Medical Association Journal, Nashville

December, 1919, 12, No. 8

- Pathologic Conditions of Nose and Nasopharynx as Predisposing Causes of Diseases of Middle Ear. L. M. Scott, Jellico, Tenn.—p. 275.
 *Intestinal Obstruction. R. Caldwell, Nashville.—p. 281.
 *Aneurysms: Report of Cases. E. B. Anderson, Chattanooga.—p. 286.
 Inoperative Cancer and Other Conditions in Which Radium is Indicated. W. D. Haggard, Nashville.—p. 288.
 Cathartic Medication. G. M. Niles, Atlanta, Ga.—p. 293.
 Contracture of Bladder Following Chemical Cystitis. J. E. Hall, Nashville.—p. 295.

Intestinal Obstruction.—This paper was abstracted in THE JOURNAL, April 26, 1919, p. 1250.

Multiple Aneurysms.—Anderson reports a case of arterio-venous aneurysm of the subclavian artery, and one of multiple aneurysms causing severe hemorrhage. The patient had a four plus Wassermann reaction, and his entire arterial system was markedly sclerosed. His first aneurysm was a radial aneurysm. The next was an aneurysm of the hepatic artery, the third case on record. Then he had an aneurysm of the tibial artery.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Dec. 13, 1919, 2, No. 3076

- Medicine and the People. T. C. Allbutt.—p. 763.
 *Diagnosis and Treatment of Chronic Gastric Ulcer. B. Moynihan.—p. 765.
 *Hypochlorhydria and Air Swallowing. Report of Cases. W. Russell.—p. 769.
 *Indolent Sores on Fingers. R. W. McKenna.—p. 772.
 Severe Dermatitis During Treatment with Novarsenobillon. L. G. Leonard.—p. 773.
 Pregnancy Complicated by Volvulus of Sigmoid Flexure, Causing Intestinal Obstruction. M. Donaldson.—p. 774.
 Three Cases of Reconstruction of Thumb. P. J. Verrall.—p. 775.

Diagnosis and Treatment of Chronic Gastric Ulcer.—According to Moynihan, the results of the treatment of gastric ulcer by any system or by dietary or medicinal regimen, are vitiated by the lack of accuracy in the diagnosis of gastric ulcer. The most rational of all methods, in his opinion, is that introduced by Sippy, which appears to meet more combatantly those conditions in the stomach which must be controlled before an ulcer can have the chance to

heal. It is based on a recognition of the fact that the reduction of the acid in the stomach is the first necessity. This is attained by dilution of food, alkalization of the gastric contents every hour, and by the administration of fats. Chronic gastric ulcers undoubtedly heal under treatment or after the exercise of continued care in diet, but, Moynihan says, in the majority of cases they do not remain healed. Nevertheless, a really serious attempt to treat all cases of chronic gastric ulcer by medical treatment should be made. It is best to have no half measures. It is at least arguable that the necessity for surgical relief in many patients is due to a too perfunctory trial of medical treatment in the earlier attacks. The ideal would be to keep the patient under treatment until a roentgen-ray examination showed that the ulcer was healed. When a chronic gastric ulcer has refused to heal, or has recurred, after medical treatment, surgical treatment is necessary. Moynihan discussed the various operative processes resorted to, as a rule, and expresses his preference for partial gastrectomy over all other operations because it does away with any chance of recurrence of the ulcer, it results in a complete and immediate freedom from all gastric troubles, and it banishes the danger—it may be large or small, but it certainly is real—of a cancerous change taking place in the base of the chronic ulcer.

Hypochlorhydria and Air Swallowing.—Russell restricts the term "air" swallowing to those cases in which the air is swallowed only when food is taken. The amount swallowed varies in individual instances, and consequently the degree of discomfort varies. It sometimes leads to visible distention; it may lead to pronounced neurosis or neurasthenia; it may act reflexly on heart and vessels, leading to functional angina pectoris. It may not only be associated with, but apparently may even be caused by abnormal gastric secretion, either hyperchlorhydria or hypochlorhydria. It is difficult to treat, and when once acquired the habit is difficult to break.

Indolent Sores on the Fingers.—An indolent sore on the finger of a nurse, a dental surgeon, or a doctor is all too often the precursor of a systemic spirochetal infection, and, as time is a factor of paramount importance, McKenna emphasizes the necessity of having serum from such a sore examined early, and, if need be, often, for the micro-organism of syphilis. He cites three cases in point.

Lancet, London

Dec. 13, 1919, 2, No. 5024

- Ambulatory Treatment of Fractures of Extremities; Tuberculous and Arthritic Disease of Joints. C. A. Hoeffteke.—p. 1058.
 Empyema. R. Sevestre.—p. 1059.
 Teaching of Pathology. T. T. O'Farrell.—p. 1062.
 Need for Schools of Psychiatry. C. H. Bond.—p. 1065.
 *Treatment of Muscles by Artificial Stimulation. G. Cooper.—p. 1067.
 One Hundred and Twenty Cases of Acute Appendicitis. C. P. G. Wakley.—p. 1071.
 *Dextrocardia, Complete and Incomplete. B. Parsons-Smith.—p. 1076.

Artificial Stimulation of Muscles.—Excluding the muscular dystrophies and injury due to trauma and toxins, Cooper believes that all muscular atrophy is of the disuse type—that is, it is caused by suspension of the normal function of contraction and relaxation. The condition and tone of a muscle are largely dependent on their function—interchange between the cell and surrounding lymph taking place during contraction and relaxation. Prevention of atrophy and restoration of atrophied muscles by rhythmic contractions is, therefore, a reasonable line of treatment. Artificial stimulation of muscle conserves the nervous energy of the patient, and in most cases of injury is the only method that can be employed. Of methods of artificial stimulation, electrical is the most valuable. Treatment by electrical stimulation is governed by the consideration of two factors: (1) The degree of contraction produced, and (2) the degree of pain caused by the stimulation. Pain is largely a matter of the length of waves employed and the uniformity of the interruptions. Apparatus devised to give a uniform type of interruption yields the best results. Fatigue is a toxic phenomenon due to accumulation of lactic acid. There is no risk of fatigue if a proper blood supply is ensured and a short interval allowed

between the contractions. Practical experience has demonstrated the value of artificial stimulation in restoring the condition of wasted muscles and in preventing atrophy.

Dextrocardia.—Smith reports four cases. In two cases the transposition not only affected the heart but also the liver and the stomach; in the other two cases the heart was transposed, but the liver and stomach occupied their normal positions. Smith points out that associated with complete transposition of viscera, dextrocardia does not incapacitate and is usually diagnosed by accident. Dextrocardia without transposition of viscera is of serious moment. Symptoms of incompetence are bound to appear sooner or later; these latter include dyspnea, palpitation, insomnia, faintness, pain, etc., and result from a general visceral overcrowding, the liver impeding the movements of the heart and the upper lobes of the right lung. Patients with dextrocardia without transposition invariably lay stress on the pains they experience both during effort and when resting; these pains, depending on the visceral overcrowding, are both local and referred local, when they denote pressure on the intercostal nerve or brachial plexus, referred when the vagus or its intracardiac endings suffer inordinate stimulation. Dextrocardia without transposition is usually if not always, complicated by actual malformation of the heart and great vessels. In one of Smith's cases it was considered that the ventricular septum was perforate. Likewise other congenital derangements may be present, pulmonary stenosis or atresia, transposition of great vessels, incomplete septums, patent ductus arteriosus, etc.

South African Medical Record, Cape Town

Nov. 22, 1919, 17, No. 22

Immunity Phenomena. T. J. Mackie.—p. 339.

Archives des Maladies du Cœur, etc., Paris

April, 1919, 12, No. 4

*Orthostatic Bradycardia. R. Lutembacher.—p. 145.

Disappearance of Systolic Murmur of Mitral Insufficiency During Extrasystoles. G. Galli.—p. 170.

Orthostatic Bradycardia.—Lutembacher analyzes in minute detail a case of orthostatic bradycardia with intermittent arrest of conduction by the bundle of His. This was not due to nervous inhibition but to a specific endarteritis of the arterioles of the septum.

June, 1919, 12, No. 6

*The Blood Picture in Scurvy. A. Benoit.—p. 241.

Manometer Tracings in Extrasystoles. H. Busquet.—p. 246.

*The Sphygmo-Oscillographic Cuff. A. Mougeot.—p. 250.

*Circulation in Paralyzed Limbs. Carpentier.—p. 259.

Blood Findings in Scurvy.—Benoit describes the blood picture found in sixty-three adults affected simultaneously with scurvy.

The Sphygmo-Oscillographic Cuff.—Mougeot expatiates on the advantages of the sphygmo-oscillographic method of studying the heart action with the pneumatic cuff and hydraulic counter-pressure according to Pachon's system. The cuff can be applied near or remote from the heart, and the tracings are easy to read even with a very weak pulse, and they are always strictly comparable.

Circulation in Paralyzed Limbs.—Carpentier reviews some recent publications on the arterial circulation in limbs affected with infantile paralysis and in progressive myopathy in adults. There seems to be an atrophy of the arteries but no vasoconstriction or obliteration.

Archives de Médecine des Enfants, Paris

December, 1919, 22, No. 12

*Epidemic Meningitis. III. K. Lewkowitz (Cracow).—p. 617.

*Bronchiectasia in Children. A. D'Espine.—p. 653.

Varicella Eruption on Sunburn. P. Gautier.—p. 657.

Deficiency Diseases. J. Comby.—p. 659.

Vaccine and Serotherapy of Epidemic Meningitis.—Lewkowitz presents what seems to be conclusive clinical evidence that the lateral ventricles are the principal and essential seat of the infectious process, and that the meningococci

spread from this hotbed through the entire subarachnoid space. The antiserum therefore, he declares, should be injected into the lateral ventricles from the very first and be reinjected daily, on alternate sides, or simultaneously on both sides every third day. The amount of the antiserum should be from 10 to 20 c.c. He urges the use of vaccine at the same time, from the very start. This tends to induce a general immunization which is a potent aid in the cure. He punctures the skull with a Götze grooved drill, 1.5 mm. wide, in a hand-drill. The needle is 1 mm. in diameter and 7 or 7.5 cm. long. A brass guide for the needle is introduced through the groove in the drill before the latter is drawn out. The brass guide inside the needle prevents obstruction with tissue. The tip of the needle is not sharp, as the only obstacle it has to force is the dura. The puncture is made anywhere along the top of the skull, 3, 4 or 5 cm. from the median line, pointing the tip of the needle toward the center of the skull. The depth of the puncture should be about 40 mm. for infants; 50 to 60 mm. for older children, and 60 to 75 mm. for adults. The fluid should not be injected until the needle is certainly in the ventricle. This is proved by the cerebrospinal fluid flowing from the needle and by the drop in tension as the antiserum spreads in the ventricles. It is important, therefore to have a manometer with three-way stopcock interposed between the needle and the syringe. The tension should not surpass 60 to 80 mm. mercury for older children and adults, and 40 or 50 for infants.

After the injection he leaves the needle in place for ten minutes to let the tension fall. Then he draws the needle half way out and leaves it for fifteen or thirty minutes, by which time the puncture canal has been plugged with a clot and there is no further oozing. In renewing the injections he trephines always at a point 1 or 1.5 cm. at least beyond the last points. His mortality was 36 per cent. in his last series of twenty-two cases, but analysis shows that a defective antiserum or a fulminating course from the start explained all the fatalities. In one instructive case the antiserum displayed a notably favorable action up to the twelfth day. Then the following injections, the sixteenth and seventeenth days, induced anaphylactic phenomena. Hence he warns not to give horse antiserum for longer than the thirteenth day, relying on the vaccine used from the start to carry on the work. In some mild cases the vaccine alone proved effectual, the blood serum showing an antibody content equal to that of the commercial antisera. He explains how there is a constant current from the ventricles to the surface of the brain and of the spinal cord, the ventricles being the secreting area and the subarachnoid space the resorbing area. He has been applying this primary ventricle serotherapy since 1914, and has a total record of eighty-four cases.

Bronchiectasia in Children.—D'Espine has encountered three cases of bronchiectasia among the 4,916 children that have passed through the children's clinic at Lausanne in over nine years. One girl of 8 had a large area of dulness at the left base with signs of a cavity and bronchitis, and incurved finger-nails. She improved under treatment and a year later auscultation gave normal findings but the nails showed no change. The same deformity of the nails plus drumstick fingers was noted in one of the two other cases with necropsy.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

October, 1919, 8, No. 10

Cancer of Uterine Cervix. M. Forgue.—p. 517.

Bulletin de l'Académie de Médecine, Paris

Dec. 2, 1919, 82, No. 38

*Pseudohermaphrodite. E. Schwartz.—p. 383.

*After Prepylorectomy. L. Pron.—p. 387.

*Crutch with Device to Lift Paralyzed Leg. G. Bidou.—p. 390.

Complete Masculine Pseudohermaphrodite.—Schwartz operated on a young widow for bilateral inguinal hernia. Her external genital organs were absolutely normal but the hernias proved to be testicles. He was careful to leave one of the testicles in place in this androgynoid.

Gastric Ulcer.—Pron reports the findings years after pylorotomy for an old gastric ulcer. They show that the ulcer was the consequence and not the cause of the hypersecretion as the latter persisted unmodified after the ulcer region had been resected. The case teaches further the necessity for dietetic and medical measures being kept up for some time after operative treatment for old rebellious ulcers.

Instrumental Orthopedics.—Bidou gives an illustrated description of a device to be fastened to a crutch by which the hand moving a small lever controls an invisible wire passing over the shoulder and fastened to the knee or shoe, and thus lifts and lowers the paralyzed limb. With two of these crutches the paraplegic can soon learn to get about easily. Bidou emphasizes that the principles of this instrumental orthopedics can be applied to any motor impotency by studying and utilizing the motor capacity left in remote regions.

Bulletin Médical, Paris

Dec. 13, 1919, 33, No. 55

Congenital Pathologic Conditions in the Heart. Apert.—p. 761.
Three Cases of Mitral Stenosis in One Family from Inherited Syphilis. Nathan.—p. 766.

Le Nourrisson, Paris

November, 1919, 7, No. 6

*Buttermilk or Skimmed Milk in Infant Feeding. Marfan.—p. 321.
Twenty Years of a Well Baby Station. Bresset and Détre.—p. 340.
*Standard Weight Curve of Infants. A. Lesage.—p. 351.
*The Wassermann Reaction in Children. F. Saint Girons.—p. 353.

Buttermilk and Skimmed Milk in Infant Feeding.—Marfan regards buttermilk as very useful in the transition from nothing but water to the ordinary food, for bottle babies under 5 months old with ordinary or choleriform diarrhea. It should never be given exclusively for more than two weeks, he says, nor in case of constipation, nor during the acute phase of the diarrhea, as water alone is called for during this stage; and buttermilk should never be given when there is fever. Several have reported cases of scurvy from prolonged buttermilk feeding. The buttermilk is made fresh, daily, in his service; the proportion of lactic acid is not over 5 gm. per liter. It cannot be sterilized alone, so it is made into a thin gruel with about 12 gm. of rice flour and 30 gm. saccharose to the liter, and the whole is cooked gently for twenty or twenty-five minutes, whipping it constantly with a cream whip. Cooked in this way it keeps well when distributed in bottles and heated to 115 or 120 C. But this sterilization is not required if the buttermilk is consumed within twenty-four hours, as in his service. When buttermilk is not available, condensed skimmed milk may be borne better than skimmed ordinary milk. Various substitutes more digestible than the butter in milk have been suggested, lipanin, cod liver oil, lard, olive oil, and coco oil, but these attempts are still tentative as yet.

Standard Weight Curve for Infants.—Lesage has computed the average from the standard weight curves published by Budin, Marfan and others. From this he has computed a standard normal range, adding 500 gm. to the average figure for the upper extreme, and subtracting 250 gm. for the lower. This range represents the normal, and the mothers are not frightened as is usual when the standard weight is given as a single figure. His own single figure average runs from 3,800 at the first month to 8,500 at the tenth.

The Wassermann Reaction in Young Children.—Saint Girons reiterates that a negative Wassermann reaction does not exclude syphilis in infants and children, and a positive reaction in children is not in itself alone a positive sign of syphilis. Even with positive reports from different laboratories, syphilis should be suspected, but in the absence of any other signs this cannot be accepted as positive proof.

Paris Médical

Dec. 6, 1919, 9, No. 49

*Progress in Pediatrics. P. Lereboullet and G. Schreiber.—p. 433.
*Flaring Up of Inherited Syphilis in Acute Infections. V. Hutinel and L. Nadal.—p. 442.

*Pharyngospasm in Children. E. Weill.—p. 449.

*Hemophilia. P. Nobécourt.—p. 452.

*Familial and Hereditary Exophthalmic Goiter. P. Harvier.—p. 457.

Recent Progress in Pediatrics.—Lereboullet and Schreiber mention as important progress since the beginning of the war the founding of the chair of hygiene for young infants and of the puericulture school, both at the Paris medical school. They review recent publications all of which have been summarized in these columns, and refer to some society reports, including Lesné's case of septicemic sporotrichosis involving the brain in a boy of 4. Also Nobécourt's three cases of pneumococcus pleurisy in infants successfully treated with pneumococcus antiserum. Some commend and others denounce lavage of the pleura after pleurotomy; it is done by the Dakin technic. Spirometer exercises are recommended for children to shorten convalescence from purulent pleurisy. This latter, Comby affirms, is like a "hot abscess." The success of a single injection of an autovaccine in a 7 months infant with a diffuse suppurating skin disease was reported by de Pfeffel, but another infant showed only improvement, and finally severe glandular involvement and exacerbation of the preexisting eczema proved fatal. Five injections of the vaccine had been given in this case.

Rousing of Inherited Syphilis by Intercurrent Infection.—Hutinel and Nadal discuss the puzzling clinical pictures presented when measles, pneumonia, nephritis or other infectious disease is distorted by an underlying, possibly hitherto latent and unsuspected inherited syphilis. Some instructive cases are reported, including one in which during measles at 4, the inherited syphilis flared up in the form of cerebral hemiplegia. In another case a mild nephritis started a train of cerebral symptoms with coma for twelve hours. Simple infectious sore throat in another case roused an encephalitis with meningeal reaction, and in one young infant, recovering from cerebrospinal meningitis, hydrocephalus developed. In all these and in others after typhoid, prompt specific treatment tended to eliminate the puzzling element of the inherited syphilis affecting the various organs and especially the brain and meninges. Chorea in particular was rendered mild and soon thrown off when the inherited taint was combated.

Pharyngospasm.—Weill calls attention to the spasm in the pharynx liable to be induced by some insignificant lesion. It does not cause spontaneous pain but the children refuse to eat, and this acute pharyngism is quite a common cause of supposed lack of appetite. This may keep up for weeks or months, with transient intermissions. The child seems to lose the notion of eating. He is not only seldom hungry, but he seems to have forgotten all about eating. He accepts food and chews a mouthful, but does not swallow it, chewing it over and over. The spasm conditions are like those with erosion of the anus. The children affected were from 19 months to 9 years old. Sometimes catheterization breaks up the spasm at one sitting. Other cases may require two or three sittings with a few days' interval. He uses Bouchard rubber sounds, dipped in boiling water and then in glycerin, for the progressive dilatation. The child is then able to swallow at will. The spasm can also be combated with a cold water compress to the throat for thirty or forty minutes, and then massaging the throat. If the child shrinks from swallowing, the finger pressed on the trachea causes suffocation which starts a swallowing movement. These measures are not so certain as the sound. With a neuropathic tendency, success is sometimes attained by having a stranger feed the child, and sometimes it will soon be swallowing normally. In three cases the children had become so much debilitated that murmurs suggested heart disease. The children held the mouthful of fluid in the mouth and then let it drool away. They were convalescing from typhoid, and minute ulcerations were visible on the posterior wall of the pharynx. He touched the throat with cocain and compelled these children to swallow fluid in abundance, and all the symptoms subsided.

Hemophilia.—Nobécourt describes some typical cases, and reiterates that the most effectual treatment to date is fresh horse serum and subcutaneous injections of 3 or 4 c.c. of a solution of peptone, 5 gm. in 100 gm. of water containing

0.5 gm. sodium chlorid. Three or four of these injections are made at two or three days intervals, repeating the series every three or four weeks. This was kept up for two years in one of the cases and the benefit was pronounced, although, as he reiterates, it seems to be impossible to cure hemophilia. The best we can do is to attenuate it.

Familial and Hereditary Exophthalmic Goiter.—In Harvier's case the goiter developed at 12, and the young man's mother, grandmother and an aunt on both the maternal and paternal sides had presented exophthalmic goiter. His sister had escaped. The tremor in his case had been noted from early childhood.

Presse Médicale, Paris

Dec. 10, 1919, 27, No. 75

*Acute Appendicitis. A. Gosset and J. Berger.—p. 753.

*Tattooing in Therapeutics. L. Dufourmentel.—p. 755.

Emergency Appendicectomy.—Gosset and Berger emphasize certain precautions desirable in operating in acute appendicitis, such as the warning that chloroform damages the liver which is already suffering from the pathologic storm. Spinal anesthesia is also dangerous, as the appendicectomy may require changes of position.

Therapeutic Tattooing.—Dufourmentel refers to tattooing in the effort to render scars, etc., less conspicuous by punctate injection of a coloring matter to bring the tissues to resemble the skin around. His experiments have shown that an indelible and nontoxic pigment for white is available in the oxid of antimony or white of antimony, Sb_2O_3 , and for red in the iron oxids known as "earths," including ochre, and cadmium salts. The colors are mixed with alcohol and then diluted with distilled water, and a small area, not over 1 sq. cm., is covered with the pigment. This is pricked into the skin with a small instrument which has from three to six needles set close together. The other end of the instrument is finished with a spatula. The points should enter the skin for only half a millimeter, not deep enough to draw blood. When a drop of blood oozes, it washes out the color. India ink is used for black, and he has been gratified with the outcome of the black tattooing to fill in a gap in eyebrow or moustache. The results have also been truly excellent, he says, in cases of extensive white scars from burns in the face, tattooed with pink. The skin is washed off with ether and then with alcohol; iodine would interfere with the tattooing.

Dec. 13, 1919, 27, No. 76

Inaugural Lecture of Clinical Medicine Course. L. Bard.—p. 761.

*Surgery of the Large Intestine. J. Okinczyc.—p. 763.

*Postoperative Fever in the Malarial. R. G. Brun.—p. 766.

Surgery of the Large Intestine.—In this fourth article, Okinczyc gives an illustrated description of some of the common indications for and the technic of operations on the cecum and colon.

Febrile Reaction to Operations on the Malarial.—Brun commends the practice of giving an intramuscular injection of 1 gm. of quinin for two or three days before an operation. This avoids confusion from the fever otherwise liable to develop after the operation.

Progrès Médical, Paris

Dec. 6, 1919, 34, No. 49

Arguments for Parasitic Origin for Psoriasis. L. Bory.—p. 487.

*Purpura in Typhoid. C. Roubier and P. Brette.—p. 488.

*Chilblains. H. Roziès.—p. 490.

Purpura During Convalescence from Typhoid.—Both of the two patients recovered, confirming the favorable prognosis which is the rule with tardy purpura in typhoid. The blood coagulated normally and the erythrocytes were not unusually fragile. The outlook is very grave when hemorrhagic syndromes develop early in typhoid.

Chilblains.—Roziès describes in turn the various methods of treatment in vogue for the relief of chilblains, saying that the aim with all is to promote the circulation in the capillaries and modify the lymphatic predisposition. Local measures which aim to relieve congestion and pain include elec-

tric light baths, hot air jets, exposure to the sun, film treatment as for a burn, massage and gymnastics of the legs. For the latter, the reclining subject lifts his leg as high as he can, holding it with his hands and flexing and stretching the foot and the toes, keeping this up for five minutes, and repeating every hour, working thus each leg and each arm each time. This modifies the circulation effectually. For direct medication, Comby advises a tepid bath, then rubbing with spiritus camphorae and, on retiring, painting with iodized glycerin (equal parts). Among the other procedures described is Jadassohn's treatment with baths: The part is soaked for ten or fifteen minutes in water as hot as can be borne, adding boiling water until the skin is very red, and doing this three times a day, wiping the part carefully dry afterward. Roziès gives a long list of other procedures that the practitioner has at his disposal for treatment of chilblains.

Dec. 13, 1919, 34, No. 50

The Blood Pressure and the Pachon Oscillometer. Paillard.—p. 497.

General Anesthesia by the Practitioner. Hartmann.—p. 499.

*Psychoses Cured by Intercurrent Infection. H. Damaye.—p. 501.

Psychosis Cured by Intercurrent Influenza.—In Damaye's two cases the psychosis was of the dementia praecox type, and had lasted eighteen months in one case and seven in the other. The mental condition returned completely to normal after an attack of febrile influenza in the first case and of infectious sore throat in the other. The patients were men of 20 and 23.

Policlinico, Rome

Aug. 3, 1919, 26, No. 31

*Injection of Arsphenamin on the Fascia Lata. M. Trossarello.—p. 937.

*Filtrable Viruses. R. Ciauri.—p. 940.

Arteriovenous Aneurysm in Thigh; Two Cases. P. Perazzi.—p. 945.

Injection of Arsphenamin on the Fascia Lata.—Trossarello was much pleased with the advantages of injecting the arsphenamin on the fascia lata instead of into a muscle. In 60 per cent. of the thirty patients treated with this technic the injections were painless or nearly so. In 25 per cent. there was a moderate reaction, and in 15 per cent. a sharp, painful reaction. Those in this latter group were all in the tertiary stage of syphilis. There never was any suppuration or necrosis at the spot, and he advises this epifascial technic as preferable to the muscular when intravenous injections are not practicable.

Filtrable Viruses.—Ciauri marshals the data already accumulated in respect to filtrable viruses, and comments on the conflicting state of our knowledge to date. Is it possible that certain bacteria pass through a filtrable stage in some phase of their development, he asks, or are we to assume that some filtrable virus happens along and suddenly mobilizes the latent pathogenic properties of ordinarily harmless bacteria?

Aug. 10, 1919, 26, No. 32

*Acceleration of Pulse with Physical Exertion. C. Minerbi.—p. 961.

Spontaneous Transformed into Artificial Pneumothorax; with Recovery. E. Curti.—p. 967.

Contract Sickness Insurance Practice. G. Loriga.—p. 970.

October, 1919, 26, Medical Section No. 10

Multiple Sclerosis of Nervous System. P. Albertoni.—p. 361.

Case of Tabes with Gummas. A. Giannelli.—p. 381.

Result of Operations on Trunk Nerves. Bochi and Perrone.—p. 385.

Research on Sensibility to Vibrations. C. Frank.—p. 387.

Adaptation of the Heart to Physical Strain.—Minerbi reviews a large number of recent Italian contributions to the physiology of the heart, and the way in which it defends itself against overstrain within physiologic limits. Among others Giuffrè has demonstrated that not only mechanical and hydraulic factors cooperate in accelerating the heart beat during physical exertion, but psychic, volitional, factors also cooperate, and likewise chemical factors, from waste produced by the physical exertion, and nervous factors, from stimulation of the accelerators and inhibition of the vagus. Minerbi has called attention to the isolated increased tonicity reaction in the different cavities of the heart as a sign of their functional capacity. Much of the recent Italian work on the heart has been true pioneer research, he explains.

Rivista Critica di Clinica Medica, FlorenceSept. 20, 1919, **20**, No. 38

*Intestinal Parasites in Italian Troops. G. Garin.—p. 445. Cont'n.

Intestinal Parasites in Italian Troops.—Garin's extensive research failed to reveal any special tendency to intestinal parasites in the military, even after long service in the trenches. The proportion was about the same as in corresponding civilian groups. But helminthiasis seemed to afford a certain predisposition to typhoid and paratyphoid.

Annaes Paulistas de Med. e Cirurgia, S. Paulo, BrazilSeptember, 1919, **10**, No. 9

*Coccidioides Immitis. A. M. Pedroso.—p. 193.

Relations Between Infant Feeding, Infection and Constitution. O. Chiapparelli.—p. 204. Cont'n.

Coccidioides Immitis.—Pedroso gives nearly six pages of literature on coccidioidal granuloma, and describes a case diagnosed as blastomycosis from which he cultivated *Coccidioides immitis*. It is easily differentiated, he says, by the fact that its reproduction is by sporulation and never by budding, while blastomycetes always grow by budding and never by spore formation.

October, 1919, **10**, No. 10

*Case of Blastomycetic Dermatitis with Epileptic Seizures. J. Mendes Pereira and F. Jacobs.—p. 217.

Blastomycetic Dermatitis with Epileptic Seizures.—Mendes and Jacobs state that the number of cases of blastomycosis in Brazil is growing constantly larger as physicians are learning to recognize it. In a case reported, the previously healthy young married woman developed a skin lesion in the right parotid region treated at first for eczema. The glands around suppurated, and by the sixth month there was a severe epileptic seizure and again the seventh month, and after this mild seizures of the Bravais-Jackson type recurred almost daily. The aura was always in the right ankle and there was paresis of the leg. The diagnosis had been in turn eczema, gout, syphilis, tuberculosis, and leishmaniasis of the skin until the microscope revealed the blastomycetes. Iodid treatment was then pushed but no benefit was realized, and the epileptic seizures continued while the skin lesions spread, with death in less than a year from the first symptoms.

Brazil-Medico, Rio de JaneiroOct. 11, 1919, **33**, No. 41Bovine Sarcosporidiosis in Rio District. II. G. Hasselmann.—p. 321.
Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 322.
To be continued.Oct. 18, 1919, **33**, No. 42Protozoan Parasites of Man in Paraná. C. Pinto.—p. 329.
*Treatment of Renal Dropsy. C. de Rezende.—p. 329.

Treatment of Nephritic Edema.—De Rezende comments on the rebellious nature of subacute and chronic parenchymatous nephritis; it usually resists all treatment unless it is of syphilitic origin. In a recent case a girl of 10 died in nine months from the first symptoms. In another case a youth of 16 had traveled far on the same road, and was bedridden from the enormous dropsy when he contracted influenza. After a week of a terrible struggle with the influenza, which had invaded the lungs, the diuresis increased and the renal dropsy melted away, the young man leaving the hospital without a trace of edema a month after the onset of the influenza. De Rezende quotes a similar case recently reported by Allbutt, with recovery after influenza. But Allbutt ascribes the recovery to his dietetic treatment according to Epstein's method, aiming to supply the system with an abundance of albumin to make up for the huge losses of albumin in the renal dropsy. De Rezende is convinced that the cure in these two cases was due to the intercurrent febrile disease which modified the osmotic tension in some way and broke up the abnormally inverted current of fluid from the blood into the tissues. In future cases of the kind de Rezende intends to apply treatment with injections of normal serum, by the vein or subcutaneously. This will supply the albumin to conform to Epstein's theory, while he expects that it will induce a salutary febrile reaction which will modify the physical or physicochemical conditions.

Juventud Médica, GuatemalaAugust, 1919, **13**, No. 195

Fracture of Vertex of Skull with Abscess; Recovery. R. Tejada Aguirre.—p. 117.

*Yellow Fever. A. Madrid.—p. 120. Cont'n.

Imperforate Anus: Two Cases. B. Aldana S.—p. 123.

Palliative Operation for Cancer of Bladder. C. Estévez P.—p. 124.

Hemorrhagic Purpura. G. Valdés.—p. 126.

Yellow Fever in Guatemala.—In the course of this report of his experiences, Madrid states that three children, from 5 to 7, presented at first the same clinical picture as the adults, but ascarides issued from the mouth and anus, without feces. The children also presented convulsions, contractures and meningism, and one had vaginal hemorrhage. Most of the women had profuse uterine hemorrhages. One morning he was called to two adults presenting the identical clinical picture, sudden onset, high fever, pain in the stomach, and rapid pulse, but no albumin was to be found in the urine. The next day one still had fever, with intense albuminuria, and the diagnosis of uremic-hemorrhagic yellow fever was confirmed by the further course. The other patient's urine and temperature were normal, and quinin then conquered her simple malaria. Madrid extols the advantages from autoserotherapy in the twelve patients given a single injection of the autoserum. But he warns that after the fourth day there are no antibodies, and hence the procedure is futile after that date.

Revista Médica del Uruguay, MontevideoOctober, 1919, **22**, No. 10

Scarlatiniform Eruption from Insect Bite. A. Armand Ugón.—p. 719.

Antecedents of Vulvar Cancer. C. Stajano.—p. 722.

When Therapeutic Abortion Is Decided on, the Physician Should Not Depute the Task to a Midwife. A. Turenne.—p. 747.

Semana Médica, Buenos AiresSept. 18, 1919, **26**, No. 38

*Chronic Pseudo-Appendicitis. J. R. Goyena.—p. 321.

Teaching of Clinical Gynecology. C. R. Cirio.—p. 323.

Prophylaxis of Tuberculosis. N. Lozano and C. Mainini.—p. 326; J. de Dios Alcatena.—p. 341.

*Sanatorium Unit. Añon Suarez.—p. 330.

*Myiasis. E. D. Cortelezzi.—p. 334.

Influenza. P. A. Etcheverry.—p. 339; A. Thomson.—p. 342.

Chronic Pseudo-Appendicitis.—Goyena tells of a case in which an emergency appendicectomy was done for an "abdominal mirage" from pneumonia. He thinks that in many of the cases recorded as "chronic appendicitis cured by appendicectomy," the cure was the result of the rest and hygiene during convalescence. A sign lauded as pathognomonic of appendicitis, the intense pain induced at the cecum when air is pumped into the rectum, was strongly positive in a recent case years after the appendix had been removed. In a large proportion of cases the disturbances return sooner or later after the appendicectomy, as they are the result of stasis in the cecum, and the appendix is not responsible for them. Simple medical measures may correct conditions revealed by radiography and other modern exploratory methods.

Sanatorium for the Tuberculous.—Añon Suarez gives an illustrated description of what he calls the ultra-economical sanatorium unit, and the arrangement of several such units to form a sanatorium of 768 beds with 80 beds to the hectare. A row of four units form an obtuse angle open to the sunshine, with back to the cold winds, and the other sets of four units parallel these, with ample space between.

Myiasis.—Cortelezzi reviews the literature and reports two cases in which the maggots of *Chrysomya macellaria* were found in the ear or nasopharynx. In one case over 100 of the larvae were expelled from the ulcerated nose and pharynx after instillation into each side of the nose of 2 c.c. of benzoin and the pharynx had been touched with it.

Sept. 25, 1919, **26**, No. 39

*Univitelline Twins. F. A. Deluca and V. Widakowich.—p. 355.

*Sclerogummatous Dermatitis. A. Gutiérrez and S. Rosner.—p. 360.

General Plan for Prophylaxis of Tuberculosis. E. R. Coni.—p. 363.

*Disqualifications for Matrimony. A. Stucchi.—p. 368.

Importance of Early Diagnosis of Tuberculosis. J. F. Mieres.—p. 376.

Origin of Univitelline Twins.—Deluca and Widakowich discuss the evidence on the cause of twin pregnancies from

one ovum, and say that there is much to sustain the assumption that this results from fecundation of the ovum by a spermatozoon with two heads. This assumption is sustained further, they say, by the fact that twin gestation of the univitelline type occurs mostly in syphilitized families. The spermatozoa in syphilitics are more often of the double-headed and other anomalous types.

Syphilitic Sclerogummatous Dermatitis.—The excrescences on the foot had been developing for five years, and the Wassermann test was negative; after excision of the extensive hardened areas and specific treatment, clinically normal conditions were restored. The Wassermann reaction became positive later.

Ultraprophylaxis of Disease.—Stucchi discourses on the tragedy and absurdity of the present laws which lay so much stress on matters of property and land ownership in relation to marriage, and yet pay no attention to the really vital matters, whether the contracting parties are bringing loathsome disease into the family they are founding. He discusses the arguments for and against the forbidding of marriage to the chronically diseased, and urges this "ultraprophylaxis" as necessary from the legal and social standpoint as well as from the biologic and medical.

Oct. 2, 1919, 26, No. 40

- *Tuberculin Treatment of Tuberculosis. II. F. Gómez Alvarez.—p. 393.
- *Shock in Obstetric Practice. D. Iraeta.—p. 389.
- *Prophylaxis of Tuberculosis in Children. A. Casaubon.—p. 393.
- *Antibodies in Hydatid Cysts. J. Bacigalupo.—p. 399.
- Percutaneous Tuberculin Treatment of Tuberculosis. S. de Madrid.—p. 400.
- Eugenics in the United States. V. Delfino.—p. 403.

Tuberculin in Minute Doses.—Gómez here continues his analysis of his experiences with almost infinitesimally small doses of tuberculin, as described repeatedly in THE JOURNAL in the last few months. He says that every one responds with a stimulation of the vital processes to injection of the bacillin, as he calls this many-million-times diluted tuberculin. This action is manifest within six or twelve hours. The reaction to tuberculin is always focal when there is a focus, the effect proportional to the dilution. This reaction may be in the form of an aggravation, from the production of lysins, or there may be marked improvement from the production of what he calls haptins. The latter denotes the beginning of the therapeutic action which terminates in immunity. By reducing the dilutions to the extreme limit, the lysin-producing phase is skipped, and we begin to realize at once the favorable, haptin-producing response. The ordinary tuberculin tests reveal merely that the subject is tuberculous. Tests with the tuberculin in this extreme dilution tell not only that the subject is tuberculous, but they locate the tuberculous lesion by the changes in the symptoms from it under the influence of the bacillin.

Obstetric Shock.—Iraeta remarks that the low blood pressure, subnormal temperature, exhaustion tachycardia, and syncopal condition sometimes noted after delivery should be regarded as typical shock, and be treated accordingly. Ether or chloroform may bring on acute insufficiency of the suprarenals in parturients with latent predisposition thereto, and hence he warns against the use of either, saying that nitrous oxid is free from this danger and should be preferred for obstetric cases. He quotes Bayliss' recommendations of gum injections preliminary to intervention, for persons predisposed to shock. The action of epinephrin, saline infusion, etc., is transient or unfavorable, but the Bayliss 6 per cent. acacia solution in physiologic saline increases the viscosity and osmotic tension while, he reiterates, there is no danger of anaphylaxis, hemoptysis or agglutination with it. The initial perfusion with 500 c.c. can be repeated in fifteen minutes and, if the blood pressure drops again, there are no contraindications to repeating the injections. Iraeta's practice in case of established shock is to give the intravenous gum injection and, if this is not effectual, he follows it with transfusion of blood. Warming up the patient is important; he has seen dogs in shock recover when warmed while the unwarmed succumbed. He warns against danger with intravenous injection of camphorated oil. His reliance other-

wise is on inhalation of oxygen, reclining horizontal, and absolute repose.

Antibodies in Hydatid Cysts.—Agglutinins were found in the fluid of two hydatid cysts in the liver in a child who had died from typhoid.

Berliner klinische Wochenschrift, Berlin

Oct. 6, 1919, 56, No. 40

- *Duration of Ventricular Systole. Brugsch and Blumenfeldt.—p. 937.
- *Gregersen's Modification of the Benzidin Test. I. Boas.—p. 939.
- *Disturbances of Liver Metabolism. S. Isaac.—p. 940.
- Tuberculous Peritonitis. W. Bloch.—p. 943.
- Case of Acute Suppurative Thyroiditis. H. Höpfner.—p. 944.
- *Two Superposed Infectious Diseases. S. G. Zondek.—p. 945.
- Silver Salvarsan Sodium. Bruhns and Löwenberg.—p. 948. Cone'n.

Proportionate Duration of Ventricular Systole.—That determination of the proportionate duration of the ventricular systole has, functionally, greater significance than the pulse rate, is the conviction reached by Brugsch and Blumenfeldt, after extensive research on the subject at the Berlin Charité. For the determination of the cardiac systole, phonocardiograms were made, recording the heart sounds. For control purposes, electrocardiograms were made simultaneously. The results of their investigations on healthy subjects showed that with increasing age there was a corresponding increase in the proportionate duration of ventricular systole (expressed as a percentage of the complete cardiac revolution). Sex, however, seemed to play no part. Although, in a general way, the proportionate duration of the systole increased with an increase of the pulse frequency, it was evident that no functional ratio existed. Especially significant was the finding that the proportionate duration of systole in healthy adults has a constant value after rest, and that the variation in different individuals is slight. The value as determined for both sexes in the age group 25-70 is from 33.5 to 37.5 per cent. (of the cardiac cycle); whereas pulse frequency varies from 50 to 78. The authors found further that in certain cardiac diseases; for example in aortic and in mitral insufficiency, the proportionate duration of systole increased with the severity of the disease, whereas in certain other heart diseases there was a decrease. The investigations must be carried further, but the authors feel that the marked diagnostic value of the determination of the proportionate duration of ventricular systole is already beyond question, and that it surpasses that of the pulse rate.

Modification of Benzidin Test for Occult Blood.—Gregersen has recently found that a frequent cause of failure in the application of the benzidin test is that too strong solutions of the reagent are used. Following Grundmann's idea, he reached the conclusion that many of the positive reactions in normal persons on a meatless diet may be explained by the fact that minimal traces of blood were mixed with the feces, which, because of the excessive sensitiveness of the reagent, produced positive reactions. Boas accepts the idea that the use of highly concentrated benzidin solution does lead to false diagnosis, and on that account approves, after careful trials, Gregersen's modification of the test. Gregersen uses a 0.5 per cent. benzidin solution, and instead of the easily decomposable hydrogen dioxid he employs barium dioxid, which is much more stable. Gregersen's method is described in detail, and Boas offers what he considers a further slight improvement. Boas admits, however, that in using the weaker solution very slight hemorrhages, though worthy of note, might go undiscovered.

Disturbances of Liver Metabolism.—The reason why the chemical processes in the liver have not awakened more clinical interest in the past is that disturbances in liver metabolism are difficult to determine. It has been difficult to differentiate between pathologic and physiologic phenomena, perhaps, because the pathologic phenomena are usually only quantitative shiftings. But Isaac thinks that these quantitative changes, while causing at first only partial changes of function, usually affect finally the action of the liver as a whole. The equilibrium of certain associated processes on which the normal metabolism of the liver depends may be only slightly disturbed, but in the aggregate a complex derangement of the liver functioning may thus be entailed. He finds that the most common cause of disturbance lies in

primary changes in carbohydrate metabolism, and illustrates this point by considering in detail various alimentary disturbances of glycogen metabolism. He shows how the liver may react in different ways to nervous and toxic stimuli, but that it is always a question of an exaggeration of some normal specific function.

Superposed Infectious Diseases.—Since the combined appearance of typhoid and dysentery is comparatively rare, Zondek reports several cases observed during the war. He has noted the tendency to consider such cases as atypical infections, whereas a more careful diagnosis revealed the presence of a mixed infection. Similar diagnostic errors might explain other so-called atypical diseases. Sometimes dysentery followed typhoid, sometimes the converse was true, if the statements of patients before entering the hospital may be accepted. The second infection began often during convalescence from the first. At other times the two infections ran parallel. The course of the dysentery offered nothing peculiar. Only one case was fatal. He mentions as significant that in one patient one week after defervescence of paratyphoid B, *B. dysenteriae* was found in the stool, though clinical symptoms did not appear until four days later. This finding evidences the fact that dysentery patients eliminate dysentery bacilli during the incubation period. Four paratyphoid patients eliminated *B. dysenteriae* during convalescence without showing clinical symptoms of dysentery at any time. It was often difficult to demarcate the typhoid from the dysentery, for typhoid, and especially paratyphoid, may often present a picture resembling dysentery. There was no evidence that the course of the typhoid was influenced by the dysentery. On the other hand, the dysentery was brought to an unexpected termination by the typhoid. However, paratyphoid B could not be shown to have any effect on the dysentery. Whether paratyphoid B was influenced by the dysentery could not be definitely shown, but the course of the paratyphoid B was short and uneventful. Paratyphoid A could not be shown to have been affected by a previous dysentery, but the course of the disease was lighter than usual.

During synchronous epidemics of typhus and recurrent fever about 1,000 typhus patients and 150 recurrent fever patients were treated. In twenty cases typhus followed recurrent fever. The severe and stormy course of the typhus was doubtless due to the preceding attack of recurrent fever, which had left the patient in a weakened physical condition and had doubtless damaged the central nervous system. In six cases the typhus set in after the first attack of recurrent fever. During the course of the typhus the spirochete of relapsing fever was not found in the blood. There was no second attack of the recurrent fever in these six cases, but the other patients with recurrent fever followed by typhus had two or more attacks of the former.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 4, 1919, 49, No. 49

- *Smallpox and Vaccination. G. Sobernheim.—p. 1849.
- Neuroses and Psychoses Among the War Interned. A. Repond.—p. 1858.
- *Porphyria with Paralysis. W. Löffler.—p. 1871.
- Auscultation with Two Phonendoscopes. G. A. Römer.—p. 1879.

Smallpox.—Sobernheim expatiates on the importance of an early diagnosis of smallpox. The extremely fine granula found by Paschen in all the smallpox cases he examined requires great skill in the technic for its discovery, but it most certainly seems to stand in some relation to smallpox, as also Guarnieri's cell inclusions which can be refound in the rabbit cornea inoculated with pustule contents. This test also requires a complicated technic, but Paul's method is simple and rapidly instructive. With this, the scarified rabbit cornea is inoculated with contents of the suspected pustule or with secretions from nose or throat, and in thirty-six to forty-eight hours there is a macroscopic reaction, the cornea around remaining normal while minute elevations can be seen at the infected points. If the eyeball is placed for a short time in mercuric chlorid-alcohol, the cornea turns gray while the minute swellings show chalky white. This kind of reaction is seen only with smallpox or vaccine virus, but

negative findings are not conclusive. With this and other tests, it has recently been demonstrated, he adds, that the virus is found in the nose and throat early in the disease, and that the disease can be transmitted by droplets, but no evidence of healthy carriers has been discovered as yet.

Porphyria with Ascending Paralysis.—Löffler adds another to the fourteen cases of acute porphyria on record; his case is the fifth with symptoms of acute ascending, lax, purely motor paralysis. No cause for the porphyria could be discovered in the previously healthy farmer's daughter. It is curious that women formed 92 per cent. of all the cases of the acute toxic form, and 78.5 per cent. of the acute idiopathic form. Necropsy failed to reveal in his case any pathologic changes in brain, cord or peripheral nerves. The urine averaged 0.065 per cent. porphyrin; in one day's 400 c.c. urine there was 0.26 gm. In chronic porphyria the range is from 0.17 to 0.57 gm. The porphyrin answered to all the tests, confirming that a single form of porphyrin is found in both the chronic and acute cases. The stools also showed the spectrum for porphyrin; this is the first time, he says, that it has been found in the stools in acute porphyria. None could be detected in the blood. At first abdominal symptoms predominated, but after six weeks the paralysis developed and proved fatal in less than a week.

Schweizer Archiv. f. Neurol. und Psychiatrie, Zurich 1919, 5, No. 1

- *The Fulminating Acute Psychoses. C. Ladame.—p. 3.
- Psychopathology of Arson. G. Bychowski (Warsaw).—p. 29.
- Symmetrical Formations in the Hemispheres of the Brain in Man and Animals. Z. Jatschewa.—p. 56.
- *Chemical Differentiation of Brain Tissues. E. Landau.—p. 68.
- Psychomotor Inhibition in a Case of Chorea. R. Mourgue.—p. 70.
- Feeding the Insane through Tube in the Nose. W. Boven.—p. 99.
- *Congenital Malformation of Spinal Cord. V. Demole.—p. 107.
- *Electric Motor Excitability of Stomach Wall. Bircher.—p. 122.
- *Retrogasserian Section of Trigeminal Nerve. C. A. Perret.—p. 141.
- *Nerve Anastomosis for Facial Paralysis. Id.—p. 141.

Acute Idiopathic or Fulminating Psychosis.—Ladame reserves this name for acute insanity, with a rapidly fatal termination, which presents a characteristic clinical course and histopathologic changes *sui generis*, indicating acute inflammation of the mass of the brain. The article is based on eight cases, and emphasizes particularly the intense motor restlessness and the rapid desiccation of the tissues and early cachexia, with signs of grave general nutritional disturbances, profound mental confusion and death in one or two weeks. He suggests that by combating nutritional disturbance at the start we might ward off the disease. The lipoids, especially the lecithin, seem to be mainly involved, and treatment should aim to arrest the disassimilation, which would remedy also the derangement of the water balance. This psychosis is rare, forming only 0.25 per cent. of the 3,181 insane at the Bel Air asylum. (Ladame's untimely death has recently been reported.)

Chemical Differentiation of Sections of the Brain.—Landau calls attention to the fine contrast staining obtained by the chemical reaction when a specimen is stained in turn with iron salts of a higher and lower valency. It is especially instructive for sections of the brain. He places them for a few minutes up to an hour in a 1 or 2 per cent. solution of ferric chlorid and then rinses and transfers to potassium ferrocyanid. If the stain is too deep, it can be decolorized with ammonia and stained over again.

Congenital Luxation of the Atlas.—Demole found at necropsy of a woman of 30 who had never displayed any nervous symptoms, motor or sensory, that there was forward subluxation of the skull on the spine, and the spinal cord was crushed out of shape. He ascribes this luxation to flexion of the neck at the third month of fetal existence, for reasons which he describes, and comments on the way in which the fetal spinal cord adapts itself to such injuries. The atlas had grown to the axis beneath.

Electric Stimulation of Motor Functioning of the Stomach Wall.—Bircher reports experimental and clinical experiences with various forms of electricity applied to the vagus innervation of the stomach wall and also directly to the wall. The details in seventy-five clinical cases are tabulated. They

justify to the importance of the neurotic factor in ulcer. Another practical point learned is that when the surgeon is unable to discover any anatomic basis for the disturbances, electric tests will reveal pathologic conditions when such exist. The sensation from the electricity was always referred to the electrode on the skin, the stomach itself not apparently feeling it. The excitability of the stomach was tested directly in the operative cases. The threshold grows lower from the cardia to the duodenum, and the excitability is greatest opposite to or just below an ulcer.

Retrogasserian Resection of Trigeminal Nerve for Neuralgia.—Perret reports the excellent outcome over three years to date in a very severe case of trigeminal neuralgia treated by severing the nerve back of the gasserian ganglion. This entails ascending degeneration of the centripetal fibers of its sensory root, and cures the neuralgia, while there is no danger of the neuroparalytic keratitis liable after gasserectomy, as the sympathetic fibers passing to the ophthalmic nerve are left intact. The case is illustrated.

Grafting the Facial on the Hypoglossal Nerve Cures Facial Paralysis.—Perret's illustrations show the fine result realized in a case of total facial paralysis in a young woman by total end-to-end anastomosis of the hypoglossal and facial nerves. Seven years later no asymmetry can be detected and there is scarcely a trace of lagophthalmos. One half of the tongue showed a tendency to atrophy at first, but it grew less apparent, and speech is perfect. The only suggestion of associated movements is a slight fibrillary tremor in certain regions in the cheek but she can control even this when she is not tired.

Zeitschrift für Geburtshilfe und Gynäk., Stuttgart

July, 1919, 81, No. 3

Incipient Cancer or Atypical Epithelium? W. Benthin.—p. 593.
Adenomatous Sarcoma of Uterus. E. Froeschmann.—p. 623.
Serologic Bile Test for Cancer. H. A. Dietrich.—p. 641.
Operative Treatment of Adnexitis. K. Fraenkel.—p. 667.
The Patented Metal-Placenta Test for Pregnancy. O. Hürzeler.—p. 701.
Cylindromatous Sarcomas of Adnexa. E. Büchler.—p. 723.

Incipient Cancer or Atypical Proliferation of Epithelium?—Benthin gives photomicrographs of seven cases in some of which even microscopic examination of practically the whole uterus failed to decide for or against malignant disease.

Bile Serologic Test for Cancer.—Dietrich has found that the natural hemolytic action of bile can be checked by addition of normal serum, but that serum from women with genital cancer allows the hemolysis to proceed unchecked. He proclaims this as a new biologic test for cancer, and reports that the findings with it were positive in 95 per cent. of forty-one cases of genital cancer in women, while they were positive only in 5 per cent. of the 121 noncancer women, and in these positive cases there were inflammatory processes. He explains the reaction as due to destruction of the albumins in the cancer serum, and declares that it is a useful guide not only in diagnosis but for the prognosis and in control of the results of operations and raying. He uses for the test a reliable element of bile, sodium taurocholate, in 0.5 per cent. solution in physiologic sodium chlorid solution in a set of twelve tubes, ranging from 0.28 to 0.17 c.c. of the taurocholate and filled with the saline to 1 c.c. To each is added 0.01 c.c. serum, with a parallel set containing 0.01 serum from healthy subjects. After thorough mixing he adds to each, 1 c.c. of a 2.5 per cent. suspension of erythrocytes from umbilical-cord blood of newly born infants, caught in sodium citrate, 1:10, and thoroughly rinsed with saline, centrifuging three times. The reaction is estimated after thorough mixing and the tubes have been incubated at 37 C. for two hours. In the normal serum tubes there is no hemolysis, while in the cancer serum tubes hemolysis occurs. Dietrich reviews the literature on biologic tests of cancer, remarking that none have come near to standing the test of time except the miostagmin reaction and, possibly, Abderalden's.

Operative Recurring Inflammation of Internal Genitals.—Fraenkel reviews the ultimate outcome in 1,305 cases of recurring inflammatory gynecologic disease at Frankfurt, all

given medical treatment but ninety-seven. This operative group includes thirty-eight with radical abdominal total extirpation, and the final verdict is decidedly in favor of this from every point of view.

Aug. 2, 1919, 82, No. 1, O. Küstner Festschrift

***Genital Prolapse.** A. Martin.—p. 1.
***Significance of Pain in Pelvis.** E. Opitz.—p. 9.
Gonococcus Vaginitis in Little Girls. R. Asch.—p. 28.
***Suprapubic Cesarean Section.** P. Baumm.—p. 45.
***Ventrifixation of the Vagina.** L. Fraenkel.—p. 59.
Delivery in Twilight Sleep. O. Schmidt.—p. 76.
***Chronic Ulcer of the Vulva.** F. Heinsius.—p. 96.
***Origin and Treatment of Eclampsia.** A. Dienst.—p. 102.
Reciprocal Relations Between Menstruation, Color of the Hair and Libido. A. Heyn.—p. 136.
Gynecologic Laparotomies; 491 Cases. W. Hannes.—p. 153.
Hematometra in Double Uterus. P. Becker.—p. 180.
Ileus from Postoperative Bands. P. Becker.—p. 190.
Fascia Grafts in Gynecologic Operations. G. Schubert.—p. 195.
***The Kielland Forceps.** H. Küster.—p. 218.
Pregnancy and Tuberculosis. F. Heimann.—p. 237.

Treatment of Genital Prolapse.—Martin reviews the various operative methods that have been devised to cure genital prolapse, and remarks that even the best planned and best executed operations have some failures on their record. The general condition is an important factor. Infantile, thymus-lymphatic and constitutionally inferior tissues cannot always be relied on as a permanent support, even where the conditions at first seemed perfect.

Pain in Gynecologic Disease.—Opitz warns that even with unmistakable hysteria or neurasthenia there may be local causes for pains. Careful search for these causes will reduce more and more the number of cases of purely psychic pains, although never doing away with the latter entirely. Among the causes liable to be overlooked which may be responsible for pain are (1), clumps of ascarides entailing local spasm of the bowel; (2) enlargement of veins in the pelvis. The phlebectasia can sometimes be palpated. In several cases he was able to cure tormenting pains of long standing by ligation of the enlarged vein. Pain from this cause usually comes on when lying on the back. (3) Kinking or stenosis of a ureter or traction from bands is liable to cause pain; sometimes catheterizing the ureter may straighten it and put an end to the pain. (4) Pain in the sacral region may be due merely to fatigue of the dorsal muscles; this pain comes on in the course of the day and is relieved by repose. Or sacral pain may occur from stretching of the ligaments of the iliosacral joint, and the ligaments are found tender, especially in women with oblique pelvis. Massage, gymnastics and strengthening measures may help. (5) A further cause for pains may be found in retroperitoneal tuberculous glands. Kneise has cured several such cases by operation or tuberculin treatment. (6) One of the most frequent causes is abnormal movability of the cecum or sigmoid flexure, or their being bound down by bands. He has cured numbers of patients by correcting these conditions, especially the adhesions at the sigmoid flexure. These are particularly liable to cause disturbance during pregnancy and the puerperium. He has found these adhesions in 95 per cent. of the cases, but they do not always cause pain. In several cases he did not cut these bands at the laparotomy for other cause as they had never caused disturbance, but they began to make trouble later.

Opitz now has a record of large numbers of cases of pains in the left abdomen permanently cured for years by merely breaking up these adhesions at the sigmoid flexure or cecum; they are usually connected with—possibly extinct—disease in the genital organs, and the pains are generally mistakenly ascribed to displacement of the uterus. They persist after operative correction of the displacement, or are even aggravated by this as the traction is made greater. Ordinary rheumatism affecting the pelvis and sacrum may be responsible for the pains in some cases; the tonsils should be examined. He emphasizes further the importance of distinguishing between the stimulus that causes the pain and the brain that perceives it. By psychotherapeutic suggestion and general strengthening measures we may be able to reduce the acquired oversensitiveness of the central nervous system, and thus cure from another angle.

Suprapubic Cesarean Section.—Baumm has now a record of 223 cases of contracted pelvis in which delivery was by sectio suprapubica. The mortality was 2 per cent. in the clean cases and 13 per cent. in the febrile cases. In two cases the operation was repeated at a later pregnancy and in another case three times. The prospects for the children are the same as with the classic technic. In over 59 per cent. of the cases, the operation was extraperitoneal. The great advantage is that the whole operation can be concluded at once and the uterus sutured. This suprapubic technic should not be considered for febrile cases with fetid amniotic fluid, or with an interval of twenty-four hours since the escape of the fluid.

Ventrifixation of the Vagina.—Fraenkel reports two cases, and cites others from the records, of ventrifixation of the vagina in treatment of recurring prolapse after hysterectomy or with primary prolapse, leaving the sound uterus intact, or removing the diseased uterus. The operation is simple and easy and all are surprised at the effectual way in which it counteracts the tendency to prolapse, while it is not liable to interfere with pregnancy later.

Chronic Ulcer of the Vulva.—Heinsius has had four cases of extensive inoperable destructive ulcerative processes starting in the vulva, with multiple fistulas. Great relief was obtained from fixation to the abdominal wall of the sagging genital organs and bladder.

The Eclampsia Question.—Dienst announces that his experimental and clinical research has settled once for all that the blood in eclampsia contains an abnormally large proportion of fibrin-ferment. This excess of fibrin-ferment explains the edema of pregnancy, pregnancy kidney, and eclampsia as the various degrees of intoxication with fibrin-ferment, as he describes in detail. In many hundreds of blood specimens the findings were constantly concordant in the deficient production of antithrombin in the eclampsia and pregnancy cases, and the consequent overloading of the system with thrombin. He announces the constant finding of fibrin-ferment in the amniotic fluid as early as the second month in normal pregnant women, but in these normal women no free preformed fibrin-ferment was ever found in the blood plasma. For this and other reasons he assumes that the maternal placenta is the source of production of the fibrin-ferment. Treatment should aim to relieve the spasm of the blood vessels caused by the excess of fibrin-ferment. Small repeated doses of narcotics, as in Stroganoff's prophylactic treatment, accomplish this, while venesection lowers the blood pressure and starts up the circulation and the production of antithrombin in the liver. Leech extract may also aid in combating eclampsia, and rupture of the membranes may reduce the pressure so that the liver may have better circulation, and aid in combating the toxic action. As the placenta keeps producing more fibrin-ferment, it should be got rid of quickly. Nolf states that acid drinks promote production of antithrombin, and hence the pregnant should be encouraged to drink freely of lemonade, etc. The pregnant naturally crave acid drinks and foods. A fat-poor and albumin-poor diet tends to keep down production of fibrin-ferment. This has been evidenced in the lesser number of cases of eclampsia during the last few years on the restricted war diet. In conclusion, Dienst mentions the recovery from impending eclampsia in a case of the severest form of pregnancy kidney in which he gave lemonade in large amounts and two subcutaneous injections of antithrombin in the form of blood from a healthy pregnant woman near term.

The Kielland Forceps.—Küster reviews some recent publications on the Kielland forceps and his own experiences with it, his conclusion being that these forceps and the method of their introduction form the most important progress that has been realized in instrumental obstetrics for many years.

Norsk Magazin for Lægevidenskaben, Christiania

December, 1919, 80, No. 12

*Cancer of the Rectum. P. Bull.—p. 1233.

Clinical Study of Influenza Pneumonia. R. Hatlehol.—p. 1310.

*Isolated Disease of Scaphoid Bone. E. W. Koritzinsky.—p. 1332.

Cancer of the Rectum.—Bull tabulates the details and outcome in 4 cases in which merely the malignant tumor was excised, 18 with amputation of the rectum, 2 with amputation of the sigmoid flexure, 13 with resection of the rectum, and 6 with resection of both rectum and sigmoid flexure. His historical sketch of the subject and his analysis of 71 personal cases of cancer of the rectum have convinced him that an exploratory laparotomy is practically indispensable, and that local anesthesia, especially sacral or parasacral anesthesia, offers many advantages and averts the danger of collapse and of complications on the part of the lungs. The tragic feature in treating cancer of the rectum is that the attempt to leave the anus continent often compromises the success of the intervention. He warns further that the only way to avoid gangrene of the intestine stump when it is drawn down is to ligate the superior hemorrhoidal artery above the mouth of the branch from the sigmoid artery. No action from roentgen or radium rays was apparent in the few cases rayed. Of the 39 who survived the radical operation, 17 lived for an average of eight and a half years, including six with survivals of from twelve to twenty years; 2 died from intercurrent disease after one and 2 after seven years and 16 of the others succumbed to metastasis or recurrence within five years. Two succumbed to peritonitis following an attempt to close the artificial anus. The permanent cures thus formed 30.8 per cent. of the 39 who survived the operation or 27.3 per cent. of the 44 operative cases.

Isolated Disease of Scaphoid Bone of Foot.—Koritzinsky reports a case of Köhler's disease, and compares it with the forty-nine cases on record. The prognosis is favorable; all the children outgrew the disease in from a year and a half to two years and a half, but recovery is materially hastened and suffering avoided by wearing a firm immobilizing bandage with a flatfoot insole. No operation should be considered. Sometimes the lesion is accompanied by a similar one in the patella, and it may be bilateral. The symptoms are pain and tenderness at this point, and the child steps on the outer edge of the foot. The lesion has usually a traumatic factor, but it may be merely a defect in development from some nutritional disturbance, like Kienböck's traumatic malacia of the os lunatum and Calve-Perthes' similar hip joint anomaly.

Ugeskrift for Læger, Copenhagen

Dec. 4, 1919, 81, No. 49

*Functional Tests of the Heart. K. Secher.—p. 1891.

Grave Jaundice Early in Pregnancy. E. Hauch.—p. 1899.

Lethargic Encephalitis. K. Bierring.—p. 1899; Idem, J. C. Møller.—p. 1903.

Dec. 11, 1919, 81, No. 50

Treatment of Diabetes in General Practice. H. C. Hagedorn.—p. 1939.

Functional Tests of the Heart.—Secher refers to tests that are simple enough for office and house practice. He commends in particular the Katzenstein, Rehfish and Schrumpt methods. Schrumpt states that with a normal heart the pulse returns to its former beat in four minutes after slight exercise, such as bending the knees ten times. Katzenstein's test is the difference in pulse and blood pressure before and two minutes after digital compression of the femoral artery for two or two and a half minutes. A rise in blood pressure and slower pulse rate indicate normal condition. An abnormally high rise in blood pressure is found with arteriosclerosis and hypertrophy of the heart. No rise in blood pressure indicates weakness of the heart; if the pulse is not modified, the weakness is slight, but if the pulse grows faster the heart must be regarded as decidedly insufficient. A drop in blood pressure with accelerated pulse indicates severe insufficiency; it is proportional to the degree of each. This test can be applied to the reclining patient, and Secher's experience with it in fifty cases demonstrated its approximate reliability. In some cases it excluded organic heart disease, and the course later confirmed its findings. The Rehfish test is by auscultation before and after bending the knees ten times; Bock's differential stethoscope eliminates the personal equation in estimating the findings. Bull expresses surprise that this stethoscope is not used more.

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THE SOCIAL TREND IN MEDICINE *

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ST. LOUIS

Before the war, a new era made itself known in many ways; but medicine, especially in the United States, either held aloof or, at any rate, did not actively face the facts. Many things included under the term socialization affected medical practice as well as medical study. In England, several years before the war, the new course affected the profession abruptly and without preparation in the form of the insurance laws. Because of the strong similarity with political tendencies in this country we should have taken more interest in that movement in Great Britain. I do not intend to enlarge on details now, but mention the incident as an illustration. As the editors of the *Revue de médecine* remark in announcing some changes in the plan of that sound and representative journal, "medicine is becoming less academic and speculative, but more physiologic and social."

INDIVIDUALISM AND DEMOCRACY

Many foreigners, including the most penetrating as well as the most sympathetic critics of our political life, have emphasized the great danger of our satisfaction with a low level of culture; while those who are not partial to democracy in general look on it as a necessary by-product, and one that might serve as a warning to other nations less advanced in personal liberty. Those of us who are believers in democracy and those who wish to excel in any way, especially in the so-called practical lines leading to financial success, value the boundless opportunity given to individualism in America and have long refused to heed the pessimistic assertions of those who see in these opposing but related tendencies—individualism and democracy—a serious menace to the national life.

The satisfaction with unbridled individualism has much to do with some of the things most shocking to an impartial observer, whether exchange professor or recent proletarian immigrant. In no other country called civilized is life held so cheaply, as shown by the indifference to homicide in all forms and to accidents of all kinds. Murderers go uncaught or, if caught, unpunished; lynchers, equally lawless, never give a thought to punishment, because they know it will not be meted out. Homicide is not the only neglected wrong. Thievery of all grades, be it that of the simple footpad or the embezzler of bank funds, of the payroll

cash or automobile bandit, is equally undetected and unpunished. Life and property are not everything. Grade crossings of railroads, even in the most fashionable streets of large cities, resulting in many accidents, are but the logical companion-pieces to roads, such as no other civilized land has had since the end of the eighteenth century. It is characteristic of our fondness for exaggeration and mockery that we give to the worst of these the name of trails and of highways. Add to these dangers the smoke nuisance in almost all cities, the dirty streets and dirtier alleys, the unnecessary and wholly unprotected noise of the streets, which affect health and efficiency, and we have an outward form of civilization that must shock all contemporary visitors or future historians.

The practice of lynching seems to contradict the individualistic tendency so characteristic of the American people, but in fact it does not. The individualist is a strong and aggressive character who forces a way to success in spite of obstacles. There are, however, many persons who are too indolent and too lacking in initiative to become conspicuous; with little business of their own they have too much time to devote to that of others. From this and their suggestibility to evil, they form the mobs that, like some other low creatures, are always ready for mischief. The inertness of the officials whose business it is to apprehend malefactors is explained by the fact that such officials are chosen largely from the very element concerned in the violation of law or of peace. Even the higher officials, prosecuting officers and judges have the spirit of the mob rather than that of the guardians of the law and of the dispensers of justice. This explains why a policeman who actually sees a misdemeanor or felony will usually do nothing unless some bystander, especially the victim, promises to prosecute. It explains why prosecuting attorneys, the name illustrating the etymologic law "*lucus a non lucendo*," do not bring to justice those who ostentatiously violate medical practice laws, liquor laws, misbranding laws and many others. It makes clear why even federal officials, who have the function of enforcing food laws, try to base their legal actions on the testimony of physicians, dealing with more or less disputed chemical and physiologic questions, rather than on the plain legal phases of the case. Of course, another explanation is often given for all these derelictions of duty—dishonesty or graft—but that is not necessarily true. The test of war has shown that here, as in other countries, individualism is not essentially bad. On the contrary, the good which it accomplishes far outweighs the bad, and the latter can be kept down by education and the proper social adjustment. The passive, suggestible

* Read before the biennial international convention of Nu Sigma Nu, New York, Nov. 29, 1919.

spirit is always bad. In a weak state it makes slackers; in a strong one, it may produce efficiency, but is then a source of danger to its own country, as well as to others. For it, too, education is the remedy, but it must be a vigorous and definite education.

OUR LACK OF COOPERATION

One of the most glaring examples of lack of cooperation is shown in the state laws for medical licensure, or, in short, the medical practice laws. These laws have for their sole object the furnishing of well qualified physicians, and the exclusion of others. After hard work for nearly half a century, and less strenuous efforts for a longer time, the laws of most states act chiefly to prevent physicians from moving from one state to another, which, for climatic or other personal reason, one might prefer. In few of the states are the examinations so superior to others that the tests vary essentially from those in others. The citizenry does not care whether a physician has come from another state any more than in the case of a preacher, engineer or trolley driver. The quasi-excuse for such a state of affairs is that our form of government, the police power in relation to the states, etc., obliges us to submit to this absurd condition, which affects also such other details as marriage and divorce, taxation, etc. So far from being a valid excuse, this is only a confession of legal and political incapacity. It illustrates another fact in the ease with which we make laws, although every one knows that whereas some of them—or some details, like the practice laws—are observed in certain respects as if gospel, others are dead letters from the time they receive the governor's signature! so much so, that hundreds are unknown even to those who have the duties of making, signing and enforcing them. As Kipling says of the American spirit:

The cynic devil in his blood
That bids him flout the law he makes;
That bids him make the law he flouts.

The law officer, when accused of inertia, throws out a smoke screen by asking for still more laws.

Just as the country was getting into one of its frequent periods of financial and industrial depression, the war came; and although that form of intellectual dishonesty that calls itself idealism tried to keep us out, it was obvious from the beginning that we should have to fight for everything we had gained—life, wealth and honor, probably for civilization itself—with the certainty of losing something.

When war came, the weaknesses of the national fabric soon began to be disclosed. Notwithstanding our strong individualism and energy, our skill, ingenuity and industrial organization, the low average ability and lack of cooperation were seriously felt in many lines, and especially in those relating to the national security and the continuance of our traditional policies. And this proved to be true not only of such large matters as universal service and taking part in European politics, but in the more selfish questions of freedom of opinion and speech, of the use of spies and informers, of personal liberty in regard to wine and beer, and many questions of taste rather than of ethics or laws.

In spite of all these drawbacks we played an active part in the war, and one of signal honor in hundreds of ways. The experiences of the epoch can hardly be evaluated yet, but some of the lessons are already evident for those who wish to consider them.

PROBLEMS OF THE TIMES

At the beginning, when bodies and dollars were being poured out, there was the same pathetic confidence in a coming intellectual and moral renaissance as is doubtlessly always manifested when a nation goes to war. It was so in a less glorious war still within the memory of most people now living—the Spanish-American War. There was a general elevation of soul, even on the part of those who objected to the manner of beginning war, with high hopes of a mighty advance in all directions. It was assumed that with the courage of those who ventured all, with the self-sacrifice of the wives and families of the fighting men, a real and permanent exaltation above previous levels would take place in intelligence, in politics, in business and in public service.

Doubtless in individual cases there was a new birth or a moral exaltation that will continue; but in general we have fallen back into the old ruts, while some new traits, brought out or accentuated by the exertions or readjustments of the effort to win, have shown themselves to be even more threatening than the schemes of kaiser or German general staff.

One of the outstanding phenomena of the struggle was the important part played by experts, by men and women of scientific training, in medicine as much as anywhere. Medical men wholly prevented many of the plagues that in former wars decimated armies and devastated civil populations. They saved countless limbs that would have been amputated in previous wars; they restored minds unhinged by physical and mental shocks. The destructive pandemic of influenza that began before the end of the war and lasted long after hostilities ceased, may seem to lessen the credit due the medical service. This really emphasizes the value of medical science in the other cases mentioned. The misinformed sometimes assert that lessening of infectious disease in recent years is due to the advance of general and personal hygiene, but the truth is that each infection requires special measures, which can be taken only when the vital peculiarities of the infecting germ are known. Influenza in this respect is far behind many other diseases, such as diphtheria, smallpox, tetanus and typhoid fever, and it will probably require the labors of many investigators, working from various angles, to solve the problems of influenza and enable us to check its spread and danger. That the difficulties will be solved no one can doubt, and as in other cases, the necessary measures, no matter how costly, will be cheap in the end.

During the war, the resources of trained minds were so striking, the practical results in hundreds of directions were so real and so important, not only in medicine, but in every scientific line, physics, chemistry, physiology, bacteriology and serology, that one might have expected that those who accomplished such results would be hailed as the most precious and indispensable members of the commonwealth, and that they would be showered with everything necessary for their future work and material comfort.

But again history repeated itself: The men who accomplished the greatest destruction of life get all the glory and all the rewards possible, the physicists, physiologists, and the like return to their meager salaries and their poorly supported work. On all sides while the struggle was on, it was asserted that since education had shown its value (with the imputation that it had not in dull times of peace) it would be easy to get the requisite financial means. That art and

science would no longer have to go after bread seemed almost an axiom.

Well, the war is over—for some purposes, such as selling beer, if not for others, such as digging coal—and what is the result? A few rare souls, as I said before, retain the exaltation they felt at first. The mass of the citizenry went back to the same old selfishness, the same indolence, the same indifference, the same carelessness. Many have gone backward physically and mentally, and show an intense ennui, a definite relaxation of physical and moral fiber. We see general lack of thrift and a widespread extravagance coupled with the desire for easy money, whether by raising to an exorbitant height the price of labor and commodities, or by the simpler methods of expropriation and printing of fiat money. The method of raising prices of labor or goods has been so successful in America that the Bolsheviks of Russia must regret the danger and bloodshed they risked when they followed the cruder method.

We are at present too much engaged in keeping our heads above water to know how serious the danger is. When Germany began her gamble of *Weltmacht oder Niedergang*, it was clear that the downfall threatened, not only the reckless adventurers who struck the blow, but civilization itself. Nor must we think that the results still to come can be no worse than those that followed the break-up of the Roman Empire. Just as civilization is so much more complex in almost all lands, and populations are so much greater all over the world with a resultant accentuation of the struggle for existence, and just as the means of destroying life and property are so much more effective than before, so may the shock, the destruction and the period necessary for recovery be much greater than ever before.

Very instructive are the intellectual camouflages that have appeared but have excited little comment. When the draft began and the records as to the large number of illiterates were made public, much surprise was expressed. Yet the facts and figures were accessible to everybody and had frequently been set forth by economists and educators. Nor is it strange that in the year since the armistice was signed no serious effort has been made toward bringing the literacy, even among native Americans, up to the level of civilized Europe.

Before the war the United States was fondly spoken of as the "melting pot," and "Uncle Sam" was figured as a benign pedagog illuminating the soul of the benighted foreigners who throng to our shores. Since we found that the "melting pot" does not transmute the immigrant generation, we have no better way to improve it than by deporting it, without giving it time to learn English, or without getting the aid of the several hundred foreign language papers in setting forth our ideals, aims and laws. Much money was spent in propaganda to make bad Germans worse in their own country; very little to make Americans better in ours.

The great increase in the number of students at colleges and universities may be looked on as evidence of a desire for learning, but I am not at all certain that this is so. Large classes have been observed before, corresponding with times of financial stringency. Many people, and especially the families of salaried employees, find themselves now in that condition, and may furnish part of the number; others may be in affluence, and enter institutions of learning in order to get what social prestige may accrue from

that association. Among the congratulatory notes in the press about large classes, little appears in regard to another side. Before the war, the colleges and universities in many instances had insufficient teaching forces. With the increased cost of living many teachers have gone into other vocations, and their places have often been filled by less capable persons. The change of vocation is interesting. The war not only emphasized the importance of the expert, but it also showed how men of talent can rapidly master new subjects and make themselves, as it were, experts in other, and sometimes unrelated, lines. Not only may an economist become a successful banker; a physician, a zoologist or a modern language instructor may become a leader or an administrator in some industrial line. Universities see the danger and are making praiseworthy efforts to increase funds for salaries; but in the meantime the large classes and overworked and underpaid teachers must get on as best they may.

Since the war, a curious lowering of entrance requirements has threatened university scholarship. For some years adherents have been gained for the belief that education means not so much mental discipline as the cultivation of branches that are not disagreeable to those who take them. So now it is proposed that, in place of giving the matriculant an opportunity of showing his acquaintance with Cicero and Plato, with geometry and history, he must be familiar with even lesser stars in the "movie" constellations, and be able to tell whether a certain low priced motor car is made in Detroit, Flint or Toledo. I have seen the possible results of this foreshadowed in my daily work. In speaking before certain kinds of patients I have long had the habit of using terms like "psyche" and "cor" when inquiring about functions of brain and heart, frequent objects of morbid introspection to such patients. In the last few years I find that either no one in the class, with two years of college work, recognizes the word, or if he does he is not willing to embarrass his classmates with an exhibition of such antiquated mental lumber.

So we are passing through an era in which many traditions, beliefs and customs are in the scrap-heap or the melting pot. Those that survive must be treated by people, many of whom have had their mental faculties exhausted or unbalanced by the fatigues and shocks of the long struggle. Reconstruction will be slow at best, and can be successful only if the whole subject is worked at with all possible knowledge. A century and a quarter ago, Lavoisier, one of the greatest geniuses of France, who had given many proofs of the practical value of the scientific mind, was condemned to the guillotine, with no good reason, according to sober views. His reprieve was asked for on account of his scientific eminence, but it was rejected on the ground that the republic "had no more need of savants." Let us be sure that in our time the same cannot be said, or even subconsciously supposed.

There are some reasons for an optimistic view in this respect. One is the continuation of the work of the National Research Council, one of the most valuable auxiliaries of the government produced by the stress of war. With Henry A. Christian at the head of the medical division we may anticipate solid results. Another is the reconstruction work carried out under the direction of the Public Health Service. There can be little doubt that a demonstration of the practical value of this work on a large scale will impress every one that provision must be made for the wrecks pro-

duced by industrial accidents—wrecks very often quite as much the result of devotion to duty as those produced by war. With such examples we can hope it will soon be impossible to say of Congress, as Edward Everett wrote to William Beaumont in 1834: "The great difficulty lies in the theoretical objection to the appropriation by Congress of money for any scientific or philanthropic purpose whatever."

PROBLEMS CONFRONTING PHYSICIANS

We as physicians are concerned in innumerable social problems, along with other intellectual workers and handicraftsmen. We also have our special problems, depending on the close relation of medical advances with general industrial and social questions. Some of these arise from the new conviction of the need of cooperation in many lines of activity, the struggle for the extension in every direction of trades unionism, the tendency to strike in various forms and especially on a large scale. Others arise from the many manifestations of conscious and unconscious socialism already present, with the promise of still more serious problems should the radical movement reach the stages reported, incorrectly in many respects and imperfectly no doubt in all, in Russia and Hungary. The fact that a strike may assume the proportion of a monopoly has recently been shown, but has barely been mentioned by those who should do so.

Without wishing or intending to pose as an oracle, let me touch on a few of the problems:

Health insurance, with its reliance on the medical profession for the most important part of the work, has been widely discussed and warmly advocated, especially by nonmedical people. On this question there is an enormous experience in other countries, and it would be well if we insist on a study of such experiences and an equally thorough study of the differences in conditions in those countries as compared to our own, before we encourage such a project or take part in making laws concerning it.

The little work of David McKail and William Jones, recently published by the Fabian Society, illustrates some of the weak points of such plans. As a review in the *London Nation* (Oct. 25, 1919) shows, the English insurance act "was forced on the medical profession without its acquiescence and without its voluntary help; the act was brought to birth amid a mass of bargaining and trickery, the spirit of which still hangs about its administration (after eight years)." These comments remind one of the conditions under which even the most meritorious changes of law are brought about, and recall the dishonesty associated with the passing and application of the Lever act. The British reviewer goes on to point out the lack of facilities, including hospital care, expert opinion and surgical operations, under the operation of the insurance act. We can see how, with our more scattered population, the conditions in our country are even more difficult than in Scotland. The crux of the argument for the new system is based on the cost of operation, while the most salient point in this depends on the elimination of motor cars and the reduction of physicians' salaries to half their present income. In other words, under socialization, as under the old system, the physician's welfare is the last consideration. The proposal illustrates the inconsistency as well as the lack of humor of soviets. Their cry is mines for miners, railroads for railroad unions; why not patients and pay for doctors?

The socialization of medical and sanitary measures has already made some headway in the United States. I think it may be said that this consists essentially in having all public medical and sanitary affairs in the hands of well-informed and capable men, at sufficient salaries, with adequate staffs, wholly free from the caprice or ignorance of politicians. As such matters are almost wholly neglected in most parts of the country, it should be possible to follow from the beginning a well-tried plan, such as was demonstrated practicable by our government in Panama, as well as in other places. Seeing how badly conducted are many public services, and how much harm could befall the country if the management of sanitation were as faulty as some other branches, we can only hope that a higher standard will be set before we embark on any new hygienic efforts.

The difficulty of making the public realize the economy of prevention of disease has in the past been the chief reason for general neglect of hygienic efforts, and for imperfect work in almost all parts of the country. We were not accustomed to consider the cost of foes like infection and filth, and the cost of sanitary officers, detention hospitals and compulsory care of dangerous invalids. In the last three years we have, almost without a murmur of protest, paid many times the former taxes in order to retain our moral and political freedom, and we all know that the price, extravagance included, was justified. To state it in another way: We spent many times more to kill or even disable, as by gas, a single enemy soldier, than we spend to keep our own population free from communicable disease; just as we spent many times more to maintain roads for ammunition than we ever have to facilitate bringing farm products to cities, or to get the country doctor to his patients. For the cost of a battleship we could eradicate malaria and typhoid fever from many localities where they still flourish. For sums that to a secretary of war would seem trifling, we could make it possible for every tuberculosis patient to get necessary treatment in any stage of the disease. For the price of a single battle we could see to the health of every schoolchild, and train all those in schools and colleges in proper hygienic lines. The cost of sanitation of work places would be a bagatelle. Of course, this could not be done under the old pork-barrel method of administration, or even according to the methods used in some lines, like aviation, in the war. But with a corps of experts, that could be formed now better than ever before, and a fund properly budgeted and honestly administered, a better return could be made than on any money ever spent by the country.

TRADE UNIONS AND MEDICINE

For a long time now the medical profession of the United States has been spoken of by some of its critics as a trade union. To be sure it has never adopted any of the methods so characteristic of trade unions in its relation to the rest of the population; and although it has had, for nearly twenty years, a very efficient organization, it has never used its power for any other purpose than some public welfare, and in particular has not attempted to gain financially or politically, either for the organization or for individuals. Under the circumstances it seems that the use of the term reflects as much on the trade unions as on the medical profession.

But the trade union movement is making rapid accretions, and in spite of the short-sightedness of

many leaders of American labor, should be given every opportunity for proper expansion. Teachers in schools and universities have formed unions. From the experience of other countries we may find pressure on physicians also to unionize. Before we do this we should remember that we are not merely craftsmen; we occupy a position comparable rather to that of policemen, firemen or soldiers. Any such allegiance as those exhibited even by the most conservative unions would be wholly at variance with our duties, as understood at all times and in all places by physicians.

When we see, especially, the harm that can be done by unscrupulous, dishonest or overambitious representatives of unions—harm not only to innocent fellow citizens, but to trade unionism itself—we can draw a lesson regarding one danger. There are others. Trade unions too often consider wages the main thing, the quality and quantity of work quite secondary. One can see a danger from this tendency, which may last longer than either the capitalistic or the feudal systems, in the case of teachers' unions. Few teachers are paid enough, but many are paid more than they earn. In the agitation for increased appropriations, I have not seen any recognition of this fact, nor any intention of requiring a higher standard of performance when salaries are made fairly commensurate with comfort. The same danger would threaten if physicians had unions. How rarely in any unionized trade does one see pride in a neat job, or any effort to get it. The controller is keen to detect any detail that might be the sole function of another union, and fines a plasterer, for example, if he knocks in a protruding nail with the handle of his trowel; but both workman and helper may loaf to their heart's content without remonstrance. So let us keep out of unions as long as we can, and if we are forced into them as a result of social evolution, let us try to retain our pride in a good job and remember that ours is a calling in which there is work to do all the time; and time for our own comfort must often be negligible.

But there is already a class struggle going on, and as usual at such a time, it is all the more dangerous because declarations of war have either not been formally made, or if so, they have been concealed by those who fear to face the verdict of contemporaries or posterity. The coal strike is an example of a new method of trades union struggle. Incidentally, it illustrates the mental inertness of the people. As soon as the government took its stand even the most judicious newspapers assumed that the strike was over, though even now the coal situation grows more serious. One is reminded of the courtiers who assured King Canute that the waves receded at the royal command. It would have been better to imitate those, who, when hungry and unable to fill their stomachs, obliterate the void by tightening their belts.

PHYSICIANS AS SERVERS OF HUMANITY

What stand should physicians take in this war? Having the highest example, one can decide without trying to go into the merits of the case. I should say physicians should take the same stand they all took in 1914, and some even after that time, in international war. They should serve humanity wherever possible. But this, of course, is when they act as individuals, so that, to take a very concrete example, in case of a strike affecting the lives and health of the community, as of miners, railroad hands or dealers in food, they should apply the counterstrike, as members of cor-

porate bodies. If a hospital cannot get coal or food, then no one in the unions concerned should be admitted to the care of such a hospital. To do other than this would be a crime against the helpless, though the individual physician would be free to exercise his care wherever he could, and should help even those who call themselves his class enemies, when they are sick or wounded.

To do this may seem to require more charity than the twentieth century can afford. I do not think so. Let us hope, however, that instead of having to devote our talents to such work, we may soon enter another era, in which the only strife will be that for excellence. *Punch* not long since had a cartoon in which a great politician was posed as Hamlet, and quoting the bitter lines: "The time is out of joint;—O, cursed spite, that ever I was born to set it right!" This was a reflection of the soul of Hamlet, but other sentiments are more in keeping with the present time.

Class struggles of the most brutal kinds are not new. From time to time the so-called peasant wars sprang up as an expression of injustice, but the greatest insurrection before our time, the French Revolution, showed that after the main object was achieved communism and anarchy were not really profitable. Some centuries ago, the robber barons of Hohenzollern used to pillage their proletarian or bourgeois neighbors, and later successfully despoiled their neighbor princes, kings and emperors. No one now cares where they are. Their successful days seemed long and were in fact too long; but even if the present chaotic times last as long as the period of divine right of kings, it will be short as compared with biologic processes.

We have seen the dream of the Victorian poet realized in its most impossible part—we have seen the "airy navies grappling in the central blue." Why not hope that some other parts will be realized, that the war drums will throb no longer.

EFFECTS OF TYPHOID FEVER AND TYPHOID VACCINE ON PUL- MONARY TUBERCULOSIS *

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Many of the older physicians and writers viewed the coexistence of pulmonary tuberculosis and typhoid fever as offering a grave prognosis; and as there are undoubtedly a large number of physicians who at present have the same views, a report of our experience gained during an epidemic of typhoid fever at this institution during the months of August and September, 1919, should be of value. That the diseases may coexist has been recognized for a long time; and unquestionably, it not infrequently occurs in private practice, unknown in the majority of instances to the physician, as the patient may have a healed tuberculous lesion of which he is often unaware. It is well known that the symptoms of one disease may closely resemble those of the other, as miliary tuberculosis is often mistaken for typhoid fever, and as pulmonary tuberculosis may begin with symptoms that may simulate the features suggestive of typhoid fever.

* From the State Tuberculosis Sanatorium.

No doubt this complication has occurred in several sanatoriums; but the available literature reveals only one reported epidemic,¹ which took place in the summer of 1917 at Trudeau Sanatorium, Saranac Lake, N. Y. Altogether there were fifteen cases in that series, eleven of which were being treated for pulmonary tuberculosis. The disease proved fatal with two of the patients who had had active tuberculosis prior to the typhoid infection, while the third active case showed no more advancement of pulmonary lesion than otherwise would have occurred. Of the remaining eight, the general condition of three remained unchanged, while in five it was improved.

There were sixteen persons infected during the epidemic at this institution, nine of whom were patients, and two former patients, who were employed as storekeeper and orderly, a foreman of construction, three laborers and a maid. As five of these were outside employees and were nontuberculous, they shall not be considered in this report.

HISTORY OF EPIDEMIC

CASE 1.—Aug. 4, 1919, a patient, D. C. B., who for several weeks had had a low grade temperature, developed a higher temperature than usual.

CASE 2.—One day later, August 5, a patient, F. C. M., who a month before had had an exacerbation of symptoms, had a chill followed by high temperature. This and the preceding patient were at first thought to have developed an acute tuberculosis.

CASE 3.—On the same day, August 5, a patient, I. Q., who had had a previous malaise, also vomited and had a slight rise in temperature.

CASE 4.—August 9, a patient, H. W., had a severe chill, followed by a high temperature. He had a complication of pulmonary tuberculosis and bronchiectasis, and not infrequently, when the lungs did not drain properly, had chills followed by fever.

CASE 5.—One day later, August 10, a patient, J. N. T., vomited and had a high temperature.

CASE 6.—On the same day, August 10, a patient, L. L., had a rise of temperature following a malaise of several days' duration.

CASE 7.—Four days later, August 14, T. D. M., a hospital patient who was having a temperature range of from 97 to 100.4, developed a higher temperature.

CASE 8.—On the same day, August 14, the storekeeper, D. N. R., whose pulmonary lesion was quiescent, had a rise of temperature.

CASE 9.—At the same time, August 14, a patient, S. H. H., who had been having a temperature range between 97.6 and 99.4, developed a higher temperature.

CASE 10.—August 20, L. J. H., a patient, had a moderate rise of temperature.

CASE 11.—Six days later, August 26, R. I. V., an orderly, who had had no contact with the former patients, developed a high temperature.

SOURCE OF INFECTION

Immediately after tentative diagnosis of typhoid fever was made, samples of milk, drinking water, ice, and water from a nearby spring, from which some of the patients had been drinking, were examined to determine the source of infection.

The supply of ice was obtained from a factory, the milk from our own dairy, and drinking water from springs on the mountain side, which at that time were very low, and from the spring to which reference has

been made. This spring was located below and to the east of the hospital, and had been in use for several years. As two of the laborers who drank from the spring and not from the water supply in the buildings became ill of typhoid, the spring was at once suspected.

In the meantime the report of the bacteriologist was to the effect that all samples were in excellent condition except water from the spring, which showed the presence of *B. coli*.

This led to an investigation of our sewerage system. The main sewer was located to the south and across a ravine from the spring, but the sewer leading from the north wing of the hospital was located about 50 yards above and was supposed to be cemented and water tight. This part of the system was found to be almost completely obstructed and was opened with great difficulty, indicating that it had been in this condition for some time. On questioning those who had been drinking from this spring, we learned that a peculiar taste—that of creosote—had been noticed in the water for several days, and with one exception, all typhoid patients had been occasionally drinking this water. As we were using a creosote disinfectant in our lavatories in the hospital, it was sufficient proof that our sewage had contaminated the spring and that it was the source of our epidemic. As there were many changes made among the patients on the north wards of the hospital, we were unable to make a thorough investigation for the carrier.

REVIEW OF PATIENTS' PULMONARY TUBERCULOSIS AND TYPHOID FEVER

CASE 1.—D. C. B. (No. 1144), admitted May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Marked dulness to fourth rib, both upper lobes, and to apex of base in back. Râles fairly active apex to base, and to lower angle of scapula back. Râles without cough. Condition far advanced. Sputum, positive. Diazoreaction negative. Temperature, from 98 to 99.4. Patient was substandard, and condition was slowly progressing at the time of the typhoid. Temperature, from 98 to 100. Sputum was positive prior to infection.

Typhoid.—Onset, August 4. Epistaxis. Widal test, positive. Diazoreaction, positive. Few rose spots. Delirium at intervals. Highest temperature, 105. On thirty-seventh day, relapse. Spleen palpable 2 inches below costal margin. Temperature returned to usual level on sixty-fourth day. Severe infection.

CASE 2.—F. C. M. (No. 1140), admitted, May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to fourth rib. Left, slight dulness, apex to third rib; thickened pleura with flatness left base. Right, râles on cough apex to fourth rib. Left, râles, apex to base without cough. Breath sounds very weak at left base. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 99.8 to 102.4. Patient was admitted to the hospital, where he remained until June 11. Transferred to cottage and continued to have occasional temperature from 99.2 to 99.4. Condition was slowly progressing at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 5. Epistaxis. Two severe chills. Widal test, negative (only one examination). Diazoreaction, positive. Delirium at intervals for three days. Highest temperature, 104.4. Severe infection. On forty-eighth day, September 21, moved to his home. Temperature range at time of discharge, from 98 to 102. Two months later, in reply to inquiry, patient stated that his temperature had returned to the usual level and that other symptoms were practically the same as before typhoid.

CASE 3.—I. Q. (No. 1201), admitted, July 15, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, slight dulness to second rib

1. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Wilson, G. E.: A Study of Effects of Typhoid and Antityphoid Immunization on Pulmonary Tuberculosis, *Am. Rev. Tuberc.* 11:717 (Feb.) 1919.

Left, râles on cough to second rib; expiration prolonged at both apexes. Condition, incipient. Sputum, negative. Diazo-reaction, negative. Temperature, normal. Patient had made slight improvement in general condition prior to typhoid infection. Sputum persisted negative.

Typhoid.—Onset, August 5. Severe vomiting. Widal test, positive. Diazo-reaction, positive. Highest temperature, 103.2. Temperature fell to normal on thirtieth day. Moderately severe infection.

CASE 4.—H. W. (No. 1113), admitted, April 1, 1919.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fifth rib. Left, slight dulness at apex. Right, râles without cough, apex to base. Left, râles on cough, apex to base front, and to lower angle of scapula back. Condition, far advanced pulmonary tuberculosis and bronchiectasis. Sputum, negative. Diazo-reaction, negative. Temperature, normal. Patient had occasional exacerbations with chills and rise of temperature, but general condition had shown slight improvement at time of his typhoid illness. Sputum had persisted negative.

Typhoid.—Onset, August 9. Widal test, positive. Diazo-reaction, positive. During first three weeks of illness had nine pulmonary hemorrhages, averaging 2 ounces. Highest temperature, 104.4. Temperature returned to normal thirty-seventh day. Severe infection.

CASE 5.—J. N. T. (No. 1047), admitted June 6, 1913.

Tuberculosis.—Readmitted, Nov. 18, 1918. Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness to second. Right, râles to fourth rib on cough and to lower border of scapula. Left, râles on cough to second rib. Condition, moderately advanced. Sputum, positive. Diazo-reaction, negative. Temperature, from 98 to 100. Patient was admitted to hospital, and after prolonged rest was moved to cottage. Discharged, June, 1916, as quiescent. November, 1918, was readmitted to hospital. Had severe hemoptysis. Improved and was moved to cottage in June, where he had onset of typhoid infection. Sputum persisted positive.

Typhoid.—Onset, August 10. Profuse epistaxis. Widal test, positive. Diazo-reaction, positive. Few rose spots. Spleen, palpable under costal margin. Had two attacks of hemoptysis, following which, both lungs became congested. Delirium for three days and at intervals for two more. Small amount of blood in involuntary stool on twentieth day. Highest temperature, 105. Temperature returned to normal on thirty-ninth day. Severe infection.

CASE 6.—L. L. (No. 1216), admitted, July 31, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to second rib. Left, slight dulness at apex. Right, râles on cough at second rib. Left, râles on cough at apex. Condition, incipient. Sputum, positive. Diazo-reaction, negative. Temperature, normal. Patient's general condition had slightly improved at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 15. Widal test, positive. Diazo-reaction, positive. Palpable spleen. Delirium for twenty-four hours. Highest temperature, 105. Temperature returned to normal on thirty-fourth day. Severe infection.

CASE 7.—T. D. M. (No. 951), admitted, June 4, 1918.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, slight dulness at apex. Right, râles on cough to fourth rib and to lower third of scapula in back. Left, râles at apex. Condition moderately advanced. Sputum, positive. Diazo-reaction, negative. Temperature, normal. Patient had severe hemoptysis in September, 1918, followed by a marked extension of lesion with cavitation in right upper lobe, and since this exacerbation his pulmonary condition has been slowly progressing. Temperature, from 97 to 100.4, and sputum positive, prior to typhoid illness.

Typhoid.—Onset, August 14. Widal test, positive. Diazo-reaction, positive. Palpable spleen. Highest temperature, 103. Temperature down to usual level, thirty-ninth day. Moderately severe infection.

CASE 8.—D. N. R., admitted, Sept. 29, 1914.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness at apex. Right, râles apex to base front; apex to lower border of scapula back. Râles on cough. Left, râles on cough to third rib. Condition far advanced. Sputum, positive. Diazo-reaction, negative. Temperature, 100 plus. Patient improved and was discharged as quiescent, in June, 1916. Employed as store-keeper at time of typhoid fever. Sputum persisted as positive.

Typhoid.—Onset, August 14. Widal test, positive. Diazo-reaction, positive. Highest temperature, 102.4. Temperature fell to normal, thirtieth day. Mild infection.

CASE 9.—S. H. H. (No. 1072), admitted, Feb. 7, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, moderate dulness to third rib. Right, râles to second rib. Left, râles to fourth rib. Râles only on cough. Condition moderately advanced. Sputum, positive. Diazo-reaction, negative. Temperature, from 97 to 99. Patient's pulmonary condition had slightly progressed at time of typhoid fever. Sputum persisted positive. Temperature, from 97.6 to 99.4.

Typhoid.—Onset, August 14. Widal test, positive. Diazo-reaction, negative. Highest temperature, 101.4. Patient had typhoid fever in childhood. Temperature returned to normal on twenty-third day. Mild infection.

CASE 10.—L. J. H. (No. 1153), admitted, May 21, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, moderate dulness to third rib. Râles, apex to base both lungs and middle scapula back. Râles mostly without cough. Condition far advanced. Sputum, positive. Diazo-reaction, negative. Temperature, normal. Pulmonary condition had shown slight improvement, and general condition was very much improved before onset of typhoid fever. Sputum persisted positive.

Typhoid.—Onset, August 20. Widal test, positive. Diazo-reaction, positive. Before onset, patient was given one injection of typhoid vaccine. Highest temperature, 103. Temperature returned to normal on fifteenth day. Mild infection.

CASE 11.—R. I. V., admitted, April 9, 1917.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to third rib; moderate dulness at base, and râles on cough to fourth rib, without cough at base. Condition moderately advanced. Sputum, negative. Diazo-reaction, negative. Temperature, normal. Patient discharged in November, 1918, with case apparently arrested. Employed as orderly at time of typhoid illness.

Typhoid.—Onset, August 21. Widal test, positive. Diazo-reaction, positive. Two injections of typhoid vaccine had been given prior to illness. Highest temperature, 104.2. Temperature became normal, twenty-seventh day. Seven days later a rise to 100.2 was noted. Thrombosis of left femoral vein. Temperature returned to normal on fortieth day. Severe infection.

TREATMENT OF PATIENTS

General Measures.—The typhoid patients were removed to the hospital and placed in well ventilated and screened rooms, and when their condition permitted, the beds were pulled out into an open ward and were covered with gauze netting. It is hardly necessary to state that the patients were requested to change the position in bed sufficiently often to prevent the occurrence of congestion and the development of bed-sores.

Prophylaxis.—Strict measures were exercised in proper disinfection of dishes, bedclothing, sputum, urine and feces. All attendants were carefully instructed in the proper use of disinfectants.

Diet.—The high caloric feeding of Coleman was deemed advisable. In Table 1 an example is given of a day's menu with nourishments:

Substitutes of grape juice, baked potatoes, jello, bouillon, buttermilk and malted milk were given from

time to time. Four of the patients were so toxic for a few days that they were unable to take more than 1,500 calories in twenty-four hours; but as soon as possible they were increased to the daily average of 3,500.

Medicinal.—Five grains of salol were given every six hours. Ten drops of dilute hydrochloric acid were given three times a day after eating. Two drams each of aromatic cascara sagrada and glycerin were given every other night, alternating with a soapsuds enema.

Hydrotherapy.—A tepid sponge bath was given three times a day followed by an alcohol rub. A cold sponge was given only when there was manifestation of nervous symptoms or extremely high temperature.

Convalescence.—Protracted bed rest was deemed essential in all the cases. Those whose pulmonary condition was quiescent prior to illness were kept at rest two weeks before they were permitted to sit up, and those with active trouble were kept at rest for a week longer. During this period, calories were increased and solid food was given as soon as possible in the individual case.

THE EFFECT OF TYPHOID FEVER ON PULMONARY TUBERCULOSIS

The conclusion of the effects on pulmonary tuberculosis in our series of eleven cases was made two months following convalescence. Of this number, four were classed as active with abnormal temperature prior to the typhoid infection, and all were far advanced.

TABLE 1.—MENU FOR A DAY

BREAKFAST			Calories
Oatmeal gruel	5 oz.		167
Egg	1		80
Milk toast	1 slice (milk, 3 oz.)		164
Butter	10 gm.		75
Cream	2 oz.		120
Coffee			
Sugar (granulated)	5 gm.		60
NOURISHMENT, 10 A. M.			
Egg-nog	7 oz.		220
Total			886
DINNER			
Cream of potato soup	8 oz.		200
Milk toast	1 slice (milk, 3 oz.)		164
Custard	4 oz.		262
Milk	7 oz.		150
Coffee			
Sugar (granulated)	5 gm.		60
NOURISHMENT, 3 P. M.			
Lactose ice cream	4 oz.		390
Total			1,226
SUPPER			
Beef juice	6 oz.		46
Egg	1		80
Milk toast	1 slice (milk, 3 oz.)		164
Mashed potatoes	50 gm.		41
Cocoa	6 oz.		197
NOURISHMENT, 10 P. M.			
Lactose lemonade	6 oz.		360
NOURISHMENT, 1 A. M.			
Milk	7 oz.		150
NOURISHMENT, 4 A. M.			
Lactose orange albumin	6 oz.		390
Total			1,428
Total for 24 hours			3,540

Two of the four cases have continued to advance, and judging from a report received, the condition of the patient who had returned home has also advanced but in no case more rapidly than before the onset of typhoid. The remaining patient has shown a slight improvement in general condition.

Three of the total cases were classed as active without rise of temperature but with other symptoms, as cough, streaked sputum and pleurisy. Two of these patients have shown improvement in their general condition, while the condition of the other is unchanged.

Three of the remaining four cases were classed as quiescent, and the other as apparently arrested. Two of these patients have shown improvement in both pulmonary and general condition. One has shown improvement in general condition, while there is no appreciable change in the condition of the other.

With one exception, the patients were weighed as soon as they were able to be weighed, and it was found that eight had lost from 5 to 12 pounds and that one had actually gained 5 pounds, while the weight of the other remained the same.

EFFECTS OF TYPHOID VACCINE ON PULMONARY TUBERCULOSIS

In all, sixty-two patients were given three injections of typhobacterin. The initial dose consisted of 500 million bacilli, and the second and third 1,000 million

TABLE 2.—REACTION OF TUBERCULOUS PATIENTS TO TYPHOID VACCINE

	No Reaction		Mild Reaction		Moderate Reaction		Severe Reaction	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Active	15	41	9	24	8	22	5	13
Inactive	13	52	8	32	4	16		
Total	28	45	17	27.5	12	19.5	5	8

each. The injections were given ten days apart, and the patients, who were on exercise, were requested to remain quiet for forty-eight hours. None were given vaccine if they were having abnormal temperature, or if there was a recent hemorrhage or streaked sputum. Of the total cases, nine were incipient, twenty-four moderately advanced, and twenty-nine far advanced. Of these, thirty-seven were classed as active, and twenty-five as inactive. A reaction was regarded as mild when there was a slight aching, malaise or pleurisy, or if the temperature did not exceed 100; as moderate when the temperature did not go above 101, and as severe when the temperature exceeded 101.

It is interesting to note that a higher percentage of the inactive cases gave a mild reaction than the active cases. As was expected, the active cases gave a higher percentage of moderate and severe reactions than the inactive. The results obtained in our series of sixty-two cases are given in Table 2.

SUMMARY AND CONCLUSIONS

1. The coexistence of these diseases should require a high caloric feeding.
2. Prolonged bed rest during convalescence is advisable as a precautionary measure.
3. Typhoid vaccine gave severe reactions only in the active cases, but with no permanent bad effects.
4. Patients with inactive pulmonary tuberculosis may have typhoid fever without any detrimental effects on the pulmonary condition, while the general condition may often be benefited.
5. Patients with active pulmonary tuberculosis may have typhoid fever and recover without a more rapid advance in the pulmonary condition than would have occurred had they not had typhoid.
6. Pulmonary tuberculosis did not have any appreciable effect on the course of typhoid fever.

Health First Means Safety First.—When all employers realize that medical inspection of employees is quite as important as regular inspection of the machinery itself, we can look hopefully for a great reduction in the amount of accidents.—*Minnesota Health J.*, Nov. 20, 1919.

AN IMPROVED TEST FOR THE DETECTION OF GLUCOSE, ESPECIALLY IN URINE

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Some years ago one of us (Haines¹) introduced a test for sugar in the urine which has found wide acceptance by the profession. The solution suggested at that time contained copper sulphate, potassium hydroxid, glycerin and water in these proportions:

Copper sulphate	30	grains
Potassium hydroxid	1½	drams
Glycerin	2	fluidrams
Water	6	fluidounces

These proportions have been more or less changed by different investigators and transformed into the metric system. The method, used with this test solution, is generally known and consists in heating to boiling about 5 c.c. of the test solution and adding from 8 to 10 drops of the suspected sample of urine. If sugar is present, a brick-red cloud is formed which eventually settles to the bottom of the tube. This solution, if made with pure ingredients, keeps indefinitely and has been found to be relatively delicate and quite reliable.

It occurred to us that the original solution might be improved on in such a way as to increase its delicacy and also to permit of the performance of the sugar test by the ring or contact method. The modifications introduced by us enable one to detect with certainty amounts above 0.03 per cent. of sugar, which is about the upper limit of the so-called "normal" sugar of the urine. In other words, the delicacy of the test is increased so that sugar in pathologic amount will be indicated, but physiologic sugar will not be shown. While this test is not as delicate as the special solutions of Folin² and of Benedict and Osterberg,³ yet this new Haines solution has the advantage over the latter solutions that it will show sugar only in pathologic amounts, while the other solutions mentioned will show sugar in practically every specimen of urine examined. It is, therefore, a clinical test in contradistinction to the others, which are too delicate for such purposes.

Owing to the increase of the specific gravity of the solution, by the addition of the larger amount of glycerin, the employment of the contact test becomes a matter of the greatest simplicity. However, one precaution must be taken before this test may be applied: Owing to the fact that the phosphates of the urine precipitate, when added to the alkaline copper solution, these interfering substances must be removed before the contact test shows in its most perfect manner; otherwise a confusing contact ring is observed, which might lead to possible errors in interpretation. This removal is accomplished by adding to the urine in a test tube 5 or 6 drops of a 5 or 10 per cent. solution of sodium or potassium hydroxid (or the official liquor potassii hydroxydi may be used), and allowing the phosphates

to settle out or centrifuging or filtering if desired to hasten the process. For coarser clinical purposes the test may be used with urine from which the earthy phosphates have not been precipitated, and we have occasionally employed it in this way. If the sugar present is 0.1 per cent. or upward, the reaction with the untreated urine usually comes out quite unequivocally; but, if the amount of sugar is below 0.1 per cent., the removal of the phosphates is essential to obtain entirely reliable results. It was thought that this precipitation of phosphates at the point of contact could be averted by the addition of sodium citrate or Rochelle salt to the copper solution, but this was found to be ineffective, as the ring appeared, although slightly slower, even when as large amounts as 30 gm. of either of these salts were added to 100 c.c. of the copper solution.

The composition of the improved Haines solution is:

Copper sulphate	5 gm.
Glycerin	250 c.c.
Potassium hydroxid ⁴	20 gm.
Distilled water to	1,000 c.c.

The copper sulphate is dissolved in a mixture of the glycerin, and an equal amount of water, with the aid of gentle heat. The potassium hydroxid should be dissolved in about 200 c.c. of water and added to the copper solution with constant stirring, the whole being made up to volume with distilled water. This solution keeps indefinitely, although with many of the specimens of glycerin now obtainable on the market a reduction may be observed. If, however, the solution be allowed to stand in a warm place for forty-eight hours, the clear supernatant fluid may be decanted or filtered from the precipitated cuprous oxid, without impairing its delicacy.

This solution may be used in the same manner as directed for the original Haines solution, but a much more delicate and beautiful reaction is obtained as follows: Heat about 5 c.c. of the copper solution to boiling in a test tube, remove from the flame, and hold at an angle of from 30 to 40 degrees. To this add, by means of a medicine dropper, from 10 to 20 drops of the urine, freed from phosphates as outlined above, in such a manner that a distinct zone of contact is formed between the copper solution and the urine. The tube is then placed in an upright position and the reaction noted. If sugar is present in quantities exceeding 0.1 per cent., a brick-red or yellowish ring will immediately appear at the junction of the two liquids. If the amount of sugar is less than 0.1 per cent. ranging down to 0.03 per cent., the ring will appear in from a few seconds to slightly less than a minute, the smaller quantities showing slower reactions with a tendency to a more yellowish color of the ring. In urines containing no pathologic sugar, no ring of any kind will be noted at the zone of contact.

In order to determine whether this new Haines solution offered any advantage, in the performance of a contact test, over other qualitative sugar test solutions, comparisons were made with the solutions of Benedict⁵ and of Folin and McEllroy.⁶ With the solution of Benedict, using the phosphate-free urine, a slight white contact ring was formed with normal urines, and with sugar-containing urine no distinct ring, indicative of sugar, was observed until the solution had stood for considerably longer than was neces-

1. Haines, W. S.: *Med. Examiner* **15**: 569 (Dec. 1) 1874.

2. Folin, Otto: *J. Biol. Chem.* **22**: 327, 1915.

3. Benedict, S. R., and Osterberg, E.: *Determination of Sugar in Normal Urine*, *J. Biol. Chem.* **34**: 195 (April) 1918.

4. Or 14.3 gm. of sodium hydroxid.

5. Benedict, S. R.: *J. Biol. Chem.* **5**: 485, 1908-1909.

6. Folin, Otto, and McEllroy, D. S.: *J. Biol. Chem.* **33**: 513 (March) 1918.

sary with the Haines solution. When the solution of Folin and McElroy was used with phosphate-free urine, the contact ring in normal urines was so marked that it could not permit of the use of this contact test.

This improved Haines test has the following advantages:

1. The reaction is concentrated to a single plane, thus increasing its visibility.
2. Only one heating is necessary, and there is no long standing before the reaction appears.
3. It will demonstrate pathologic sugar in amounts greater than 0.03 per cent.
4. It differentiates between pathologic and physiologic sugar.
5. It gives a clear-cut, decisive result in a minimum of time.

TUBERCULOSIS

A CITY PLAN*

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It may be said "tis not in mortals to command success," yet there may be some doubt in our minds whether in our past efforts to control tuberculosis we have quite deserved to succeed.

If we will look back fifty years into the history of medicine it will be clear that the clinical symptoms of tuberculosis, the case histories of the disease, and the pathology of the gray tubercles were intimately known. Austin Flint in America, and Trousseau in France had demonstrated the relationship between tuberculosis and the lack of fresh air and sunshine, sedentary occupations, and those conditions that are the result of careless and unclean habits found in congested areas of population. Furthermore, the infectivity of the human tuberculous lesion had been suggested by Villemain's experiments with guinea-pigs in 1865. Aitken, writing at this period, said, "The stabled cow, the rabbit, the monkey, the caged lion, tiger or elephant, are almost invariably cut off by tuberculosis affections."

Koch's brilliant discovery of the causative organism in 1882 served to place the seal of certainty on the theory of infectivity, but did not add to our knowledge as to the paths of infection or the manner in which infection might be conveyed.

A review of the yearly mortality from tuberculosis will show that throughout the civilized world there has been reported year after year a continuous decrease. The picture, however, is not comparable in extent with that seen in the number of deaths from epidemic diseases in general; the curve of decline is less abrupt, the grade gentle and in sharp contrast to that seen in scarlet fever, diphtheria, typhoid fever or in smallpox.

It may be said that in spite of the great decreases recorded in the mortality from tuberculosis in the registration area, the disease must be still prevalent to a degree resembling the widespread epidemics of contagion of earlier days. In spite of intimate knowledge, it is evident that our empiric methods have so far failed. Tuberculosis, "lingering like an unloved guest," by its very perversity calls for our utmost efforts for its eradication.

The draft examinations are too recent for us to forget the 82,000 young men who were reported as unfit

for national service on account of tuberculosis. The experiments at Framingham have demonstrated that at least 2 per cent. of an average industrial community would be found after examination to be suffering from tuberculosis in some form or other, and they have left an increasing feeling that we are as yet ill informed as to the physical standing of communities. In the country at large it is estimated by the National Industrial Conference Board that 1 per cent. of the total population is tuberculous.

In looking at these enormous figures it is evident that the control of tuberculosis is still far from what it should be in the present state of our knowledge. Tuberculosis has been regarded as a disease that is the result of hereditary inclinations, and then again as a disease of a contagious and communicable nature; nevertheless there has been no decided decrease in the mortality figures. If tuberculosis were a communicable disease whose clinical symptoms were easily discoverable, the problem of control would be simple. It is more than this, however, for like the venereal disease it presents the twofold aspect of a communicable disease and a social problem so important as to require a complete readjustment of our views on the subject.

There is a factor in its persistence that has somehow escaped our notice. It may well be that this is the neglect of the social side, and that it is responsible for our failure to bring about good results that are more permanent in tuberculosis control. Support of this view is found in the acknowledged experience that the onset of the disease is largely dependent on unusual habits and manners of living which subsequently react in physical susceptibility. Probably too much emphasis has been placed on the contagious disease aspect and too little on the predisposing causes. The social factor is also strong in determining the opportunity for early advice and treatment. Society makes as yet no provision for sick pay, either for the patient or for the dependent family.

Tuberculosis will not persist when communities live right; when fresh air is regarded as a vital necessity, and when methods of living depart least from accepted standards of health. On the other hand, in this country there may be certain national and climatic conditions which bring about a susceptibility to tuberculosis. Our severe winters are probably responsible in part for the depressing influence of overheated dwellings. The craze for up-to-date bathrooms and plumbing may well have brought about the greater danger of the common wash basin. The old-fashioned ewer and basin in each bedroom, although inconvenient, certainly provided the more sanitary equipment for the home.

In outlining a city plan for tuberculosis control, modifications will be found necessary to meet local conditions. Any occupation or community life in which conditions are apparently predisposing toward tuberculosis will require special handling.

The city plan may be divided into certain definite lines of activity, as outlined in the accompanying tabulation. None of these separately can be considered more important than the others; the success of the whole will depend on the acceptance of the value of each.

CONTROL OF INFECTION

Reporting by Physicians.—In the control of infection it will be agreed that it is vitally important to know where the disease exists, for without this knowledge no supervision is possible. There is some doubt, how-

* Read before the New Jersey Anti-Tuberculosis Association, Paterson, N. J., Nov. 8, 1919.

ever, as to what shall constitute a good standard of reporting excellence.

If we accept the dictum that there are twelve persons with tuberculosis for every recorded death from the disease, a city with an annual total of 100 deaths from tuberculosis has probably 1,200 persons afflicted with the disease in various stages. The average duration of life of the tuberculous person is difficult to estimate since there are so many variations in bodily resistance to the progress of infection. If the average duration of life in a purely empiric way is stated as three years, then a city with this number of deaths should have about 450 reported cases annually.

If the number of reported cases in any community is three times as large as the number of deaths from tuberculosis, we probably have a fair measure of notification by physicians. In checking up the reporting of cases, much information is obtainable by comparing deaths with report files. Duplicate reports of cases by one or more physicians should be accepted and paid for. The physician has no means of telling whether his patient has been reported previously. Similarly a follow up system of all sputum examinations made by municipal laboratories affords much information as to

CITY PLAN FOR TUBERCULOSIS CONTROL

- | | |
|-----------------------------|--|
| A. Control of infection... | { Reporting by physicians
Hospitals and sanatoriums
Day camps and tents; field nurses
Laboratory; enforcement of anti-spitting laws; milk supervision |
| B. Social progress..... | { Publicity
Social insurance
Antituberculosis societies program
Home visiting and relief |
| C. Economic improvement | { Improved housing
Industrial hygiene
Open air school
Vocational training
Employment bureau |
| D. Associated activities... | { Control of epidemics (measles, whooping cough, etc.)
Convalescent homes
Child hygiene
Mental hygiene |

accurate reporting. In this respect a policy of wise toleration that does not degenerate into the actual condoning of violations of the reporting law will prove an incentive to efficient reporting by physicians.

Nurses.—The services of the health nurse are too widely appreciated to require more than a brief comment. The importance of her work in the control of infection cannot be overestimated. The widest measure of success with the public depends as ever on the possession of tact and judgment, backed up by special training. I do not believe that a health nurse can give efficient service in a department unless her lines of action are specialized. An old adage still holds true: "Jack of all trades, master of none." It is only by special qualities of training and intelligence that a supervision of the tuberculous patient is possible which, apparently unobserved by the law abiding patient, is still there when occasion demands more drastic methods. The visiting nurse requires for the salvation of her patient the freest possible hand. Impossible tasks, such as the care of many patients, should not be attempted. It has been our experience in Newark that the best work is obtained when no more than 100 cases are assigned to each nurse. This number will generally bring about

a fair return of intelligent interest in the patients, provided distances are not excessive.

When the number of nurses is limited and the patients requiring supervision are many, areas of greatest prevalence may be selected for intensive work. In any case, interest tends to be lost when patients are many and the distances between visits are great. Let me state here that the work of the tuberculosis nurse is a health function. Only under a municipal board of health can the best results be attained in obtaining the necessary cooperation with municipal departments, with hospitals and other social agencies.

Clinics.—Activities against tuberculosis must radiate from the dispensary clinic as a center. Dispensaries are not always located in ideal neighborhoods. If a choice is possible, areas where tuberculosis is most prevalent should be selected. It must not be forgotten that a long trolley ride to a dispensary will seriously dampen the enthusiasm of the most optimistic nurses or patients. To the clinic come the ambulant patients not under private treatment, as well as all exposed children. An attractive feature for children is the provision of free milk or other food, such as biscuits. Milk for the purpose may be provided from what is left of milk samples taken by department milk inspectors. Little children are frequently reconciled to the discomforts of a physical examination if a glass of milk is held in one hand and a cracker in the other. Special efforts to attract mothers with children to the clinic are frequently successful if free transport to and from a clinic is provided. In Newark a special ambulance donated by the Red Cross performs wonderful work in this way.

In providing the free distribution of necessary sick appliances in dispensaries, extreme generosity with regard to sputum cups, towels and disinfectants is a good policy. Patients sometimes complain of the difficulty of obtaining metal sputum cups from medical supply houses. A number of these may well be stocked in the dispensary and sold to patients at cost.

Centralization of effort will result if the examinations for state and county sanatoriums can be made at the municipal clinic. Very definite efforts can also be made by means of illustrations and literature to influence patients to undergo hospital treatment. There has been some effort to discourage the term "tuberculosis clinics" and to substitute the term "health clinics." This is in line with the present day application of tuberculosis psychology, and may be employed without any loss of efficiency.

Where there are large colored communities, a special clinic is desirable. Colored physicians and nurses of a high type can be obtained with little trouble for the staffs of these clinics, and the results will repay the added outlay.

Hospitalization.—In Koch's original monograph he drew particular attention to the low tuberculosis mortality experienced in those European countries where hospital beds were provided in large numbers for tuberculosis sufferers. A similar experience has been noted in this country. Bonney says: "The evidence thus far presented is quite overwhelming to the effect that the closed institutions are everywhere responsible for a material diminution in the tuberculosis mortality rate among the neighboring inhabitants." Among the important efforts against tuberculosis is a campaign for an adequate number of sanatorium beds. Some beds should also be provided in local hospitals for emergency

bedridden patients waiting for admission to the county institution.

Boards of freeholders will seldom act to provide increased accommodations unless a popular demand for them is made very clear, backed by the opinion of the local boards of health. Such a campaign is necessary in every county in this state. That the present accommodation throughout New Jersey is inadequate is evident. More than half the counties of the state have no sanatorium at all for tuberculosis patients, and in only one, Union County, does the accommodation equal the minimum of one bed for each death from tuberculosis.

Before, however, sanatoriums can accomplish their function of healing every class of the community, a considerable change must take place in the attitude of the tuberculosis sufferers toward these institutions. The tuberculosis sanatorium is commonly regarded as the final step before dissolution instead of, as it should be, the first step toward recovery. For this public view the representative tuberculosis institutions are not to blame. The sanatorium must admit every suitable patient for treatment. It is no one's fault that patients have been largely recruited from the riffraff of the saloon, and the down and outs of public lodging houses, who are generally as hopeless in prognosis as they are in the finer feelings of respectability. It is unfortunate that public opinion has been allowed to look on our sanatoriums as institutions for incurables instead of places for recuperation and recovery.

It is desirable that institutional traditions in tuberculosis sanatoriums be reduced to a minimum. Freedom and homelike surroundings are synonymous: all that is needed is to cure temperamentally as well as physically. It is only in this manner that the person in the early stage of tuberculosis can be persuaded to take hospital treatment. As an indication of what should not be done, only recently a visitor to a well known sanatorium before being admitted to the ward was required to be swathed in a white robe, cap and respirator. What an unforgettable vision he must have been to the highly neurotic tuberculosis sufferer.

Day Camps.—It has been the experience of many communities that patients will attend day camps who refuse all other kinds of outdoor treatment. The attractive features are greater freedom, less restrictive rules, food and free medical advice. The patients can go and return home every night. Such a camp can be established on vacant land owned by the city, and purchased with city funds or bought by private subscription. These camps are not expensive, and they give satisfactory return for the expenditure. The tent colony carried out in some cities is equipped for all purposes, and includes dining hall, cooking tent and special accommodations for men and women. The attraction in this plan is its elasticity. Only enough tents need be erected to meet prevailing demands. The opportunities are for education in the personal care and prevention of infection, for medical treatment, and for vocational training. In Newark, tents bought by public subscription and presented to the department of health are lent to patients for use in back yards or adjacent lots. The plan works well, but requires careful selection of patients granted the privilege.

Laboratory Facilities.—The use made by physicians of laboratory facilities will depend very much on rapid and consistent service. The laboratory must be fed by a good system of culture stations, preferably located in drug stores where supplies of sputum boxes may be

obtained and where specimens may be left for collection.

Antispitting.—Spitting in public places should be regulated by an active propaganda. Public notices placed on road and traffic signs are effective reminders if sanitary inspectors are occasionally detailed on the streets to make arrests. The fine imposed for this offense should be a small one, the police proceedings being sufficiently deterrent in themselves. The fine in Newark is from \$2 to \$10. It is better to have a small fine collected than one so large that judges hesitate to impose it.

Milk Supervision.—It is contended that about 6 per cent. of all tuberculosis cases are of bovine origin. Where there is a raw milk supply, constant vigilance at the point of production is the only safeguard against tuberculosis. The tuberculin test of all cattle used for raw milk supplies must be insisted on. Careful watch on this type of dairy herd should be kept for plugged cattle and infected udders. The tuberculin test is usually required by municipalities annually, and it might well be made every six months. No new cattle should be allowed to be added to a herd before being tested. No local board of health should allow the sale of raw milk unless the supervision as outlined above is possible. The alternative is pasteurization of all milk supplies at the point of production.

SOCIAL PROGRESS AND RELIEF

There is no disease so closely connected with poverty and general distress as tuberculosis. All conditions found under these circumstances make for a more effective spread of infection. Intimate contact without regard to personal protection, filthy hands, food and china, and contaminated fingers are the supposed ways of spreading infection.

Much of the dirt, squalor and misery found in tenement life undoubtedly will favor infection with tuberculosis, but many of these unfortunates are themselves recruited from the ranks of the tuberculous. Improvement in the situation must come from every direction, and will be facilitated by an awakening of the people to the fact that clean habits and customs of living should be more a commonplace than an exception.

The pioneer work of the antituberculosis associations, national and state, in bringing the knowledge of the facts of tuberculosis to the public will always remain a wonderful tribute to patient and persistent effort. It is these associations alone that we must thank for the general recognition by the public of the gravity of the tuberculosis situation, as it is through their efforts that local boards of health have adopted more active methods to combat the disease. Where the tuberculosis association may well remain a valuable agency is in arranging plans for active public propaganda. There is much work for these associations to do along educational, social and economic lines. Their independence as citizen committees gives their efforts an appeal to public sympathy always timely and effective in results. What shall be done to relieve the poverty in tuberculosis is a question always demanding and receiving no satisfactory answer. Food, clothing and money for rent are constantly asked for, or at least obviously needed. These patients should not be poor and applicants for alms. Their poverty is due not to vicious habits, intemperance or crime, but to the effects of a disease which they surely would have been protected against if society had been properly organized. The tuberculosis victim can surely demand the

protection of the community, not in doles of charity but as sick pay, rightfully earned by labor for the community. How such a scheme of assistance should be carried out is still a matter of conjecture. Many authorities are in favor of state or national health insurance. Whatever objections may be brought against such a scheme, its advantages in tuberculosis are obvious and incontestable. Last year a bill was presented to the New Jersey legislature for the relief of tuberculous families, allowing each dependent adult \$5 a week and each child under 14 years of age \$3. This pension was not to be distributed through municipal poor and alms departments but by the state department of health. The bill was presented too late to be included in the appropriation bill, and will be redrafted and presented this year. Special legislation for relief covering tuberculosis alone is a logical procedure until a scheme for insurance against all disease hazards is adopted.

ECONOMIC IMPROVEMENT

Improved Housing.—It is because the problems of economic improvement are spectacular that the public has learned to attach much importance to them. The economic side appears more national in character and has a wider appeal than any other view. The housing situation is the same in most cities that have a tenement or slum population.

The poor and destitute always gravitate toward the cheap tenements. The cheap tenement is badly kept up, is persistently insanitary, and escapes the control of tenement house commissions and local boards of health by constant change of ownership. Dark, damp, ill ventilated rooms are tolerated because they are cheap, and the tenants, fearful of eviction, will not complain. Few boards of health have a staff sufficiently large to inspect continually the conditions in all the tenements within the municipal area. Such buildings may be sanitary one day and indescribably foul the next. The only logical method of control is to pick out the plague spots and center intensive sanitary work on them. A list of tenement houses of a suspicious nature is most useful for local boards of health to have on record. The tenement house commission of New Jersey has adopted a score card for tenement houses which shows at a glance the structural condition of any one tenement building. These score cards will be available to local boards of health and will be a valuable index of housing conditions in these tenements, pointing out the worst places for intensive health work.

It is clear, however, that these insanitary habits are not necessarily confined to the poor and destitute, for tuberculosis is found in all stations of life. As Ritter says, "We may improve the most insanitary house or room, and make it habitable for either sick or well; but if we neglect to improve the occupant or occupants of the house, our efforts will be of no avail. Sanitation of the house must go hand in hand with personal and family hygiene."

Poverty is not the cause of tuberculosis; more truly poverty may be called the result of tuberculosis, for the disease by its long drawn out clinical history and the resultant physical incapacity is but a graduation from poverty to distress and family destitution.

The greater number of tuberculosis victims end their sufferings amid conditions of want and family neglect. The sick person has outstayed his welcome, his relatives are all working and will not have him, and the meager dole of municipal or voluntary organizations makes him

a human wreck most frequently beyond hope of salvage.

"The improvement in housing, the abolition of old tenement buildings, and the erection of new, light, sunny and well ventilated dwellings have been urged as the panacea that will exorcise the tuberculosis demon. This would be a worthy proposition if a similar change could be assured in the people thus translated from a bad to a good environment."

Ritter¹ supplies his own answer:

Now if such a supposed or active tuberculous individual were suddenly placed in a most hygienic room with plenty of sunlight and fresh air, a complete change of his environment, how long would these improved conditions prevail? . . . Would the occupant improve in his new surroundings or would the room rapidly retrograde? In all probability in a very short time we would find this sanitary, hygienic surrounding and well aired room in a most insanitary condition.

Industrial Hygiene.—For the control of tuberculosis, many fads have held sway. The effect of dusty trades on the prevalence of the disease has perhaps been unduly emphasized. Giving all due credence to the harmful effect of foreign matter on lung tissues, there is insufficient evidence to show that mechanical injury to the lungs is the frequent precursor of infection. As Bonney² remarks:

There are many other pursuits exhibiting a frightful mortality rate from tuberculosis in which inhalation of dust from any source cannot be regarded as a definite etiologic factor. . . . It is quite as reasonable to attribute the development of consumption to the effect of the ten or fourteen hours spent in the home as to the eight or ten passed in the workshop.

There are, it is true, trades and occupations which predispose to tuberculosis. Vast strides have, however, been taken in late years to improve the conditions in factories by the state department of labor. The effect of dust and fumes has been reduced to a minimum by effective mechanical devices, and there are few factories at this time in which dust is allowed to exist so as to be a serious hazard to health. The workers themselves with the aid of their trade unions are demanding better working conditions in factories and workshops. There is, however, much room for improvement in the working conditions of labor which only boards of health can properly supply.

The sanitary survey shows the diseases of occupation, the hours of labor and the special employment of women as subjects that can best be cared for by a bureau of industrial hygiene. At least diagnostic clinics are advised where expert advice may be obtained free or for a small charge.

ASSOCIATED ACTIVITIES

The importance of associated activities is evidenced by the control of epidemics bringing about a lessened prevalence of diseases such as measles and whooping cough. Child hygiene activities are important in protecting the mother, whose weak condition after childbirth or disease may well predispose toward tuberculosis. Convalescent homes for the treatment of hospital patients to insure good recovery before they return to their homes will surely be an added link in the chain of protection. Mental hygiene, our newest

1. Ritter: Bull. Chicago Tuberculosis Institute, 1916.

2. Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Co., 1910.

health activity, will function to reduce the subnormal conditions harmful and prejudicial to the health of the family.

CONCLUSION

Finally, let me paraphrase a well known health motto:

"Freedom from disease is purchasable: within certain limits a community may by its own endeavors control tuberculosis in its midst."

51 Cypress Street.

THE SELECTION OF OPERATION FOR EXOPHTHALMIC GOITER *

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Surgery, at the present time, gives a higher percentage of cures than any other measure in the treatment of exophthalmic goiter. For a number of years the mortality following surgical procedures has gradually decreased, largely because much has been learned regarding the selection of the type of operation which is safest in any given case, and because the greater number of patients are operated on earlier in the course of the disease than formerly, and at a time when they are better surgical risks. It is possible to operate by present day methods in a large number of consecutive cases of exophthalmic goiter without a death. There are, however, a few patients who fail to respond to preoperative medical treatment and who must be subjected to operation at a relatively high risk, in order to offer a chance for cure. Refusal to operate in this group of cases naturally diminishes the death rate. On the other hand, poor judgment in selecting the type of operation which is best and safest in a given case, and in advising operation in certain cases that are nonsurgical at the time, increases the mortality.

If the disease is left to run a normal course, it progresses in several different ways. In a few instances the onset is sudden, with rapid development of symptoms, and the progress is so quick that the patient soon becomes a poor surgical risk. In the greater proportion of patients, however, the onset of the disease is so gradual that in its incipency it can scarcely be recognized save by one highly experienced in the diagnosis of hyperthyroidism. In such patients the symptoms gradually increase in number and severity, and an enlargement of the thyroid gland occurs. As a rule the disease reaches its height during the second six months of its course, and the patient passes through a period which usually is referred to as a crisis. During such periods all the symptoms become markedly exaggerated; the pulse rate is high, there is rapid emaciation and loss of weight, with extreme nervousness and mental irritability, and often vomiting and diarrhea; marked damage occurs to the vital organs, such as the heart, liver, and kidneys. Unless the disease proves fatal, the majority of patients improve greatly after a period of from one to several weeks, although as a rule they are never so well after having passed through a crisis as they were before. The amelioration of symptoms may persist for a period varying from a few months to several years, but in the majority of patients a second or even a third crisis eventually develops. With each crisis the damage to vital organs,

especially the heart, liver, and kidneys, increases, until the patient finally suffers more from the symptoms produced by these degenerative changes than from the disease itself. In a third, but small group of patients, the disease runs a chronic course from its onset without the development of acute crises.

Fortunately and unfortunately, patients improve when treated medically: fortunately, because patients unfit for surgical treatment may improve to such an extent that they become fairly good surgical risks; and unfortunately, because a knowledge of the fact that improvement occurs under medical treatment leads many practitioners to use only medical measures in the management of exophthalmic goiter, apparently without fully realizing the sad state to which a large percentage of the patients thus treated will be ultimately reduced. Many patients who have been treated medically for a long period apply for surgical aid and are found to have such marked degenerative changes in their vital organs that it is impossible for surgery to effect a cure. Operation usually stops the progress of the disease even in this stage, but the damage to the vital organs cannot be repaired; it would be quite as reasonable to expect to cure patients with well pronounced nervous lesions from tertiary syphilis by means of antisyphilitic treatment.

It is often a perplexing problem to decide just how toxic a given patient is and how much damage has been produced by the disease, and for these reasons it is difficult to decide what operative procedures the patient will safely endure. Although the mortality is largely affected by the decision, no absolute rules can be given as to the selection of the best type of operation; each case must be judged on its own merits. A condition which in one patient would justify the performance of a thyroidectomy, in another patient would be counterbalanced by some other factor that would make the operation dangerous. There seems to be no way of elucidating all the possible conditions that may arise, as these can be recognized only by observers who are highly experienced in dealing with exophthalmic goiter.

In operating in such cases at the Mayo Clinic, certain factors are taken into consideration in selecting the type of operation. The ideal surgical procedure in exophthalmic goiter is partial thyroidectomy as soon as the first symptoms of the disease appear and it can be definitely proved, by metabolic tests, that hyperthyroidism is present. At this stage of the disease, a primary thyroidectomy can usually be performed with a very low death rate, and many such patients are restored to normal health. The percentage of patients operated on during the early stage of the disease is steadily increasing, and an increase in the percentage of cures will result.

It cannot be denied that certain patients improve and apparently recover under medical treatment. However, in the beginning of the disease it is impossible to distinguish between the patients who may fall in this group and those who are destined to suffer severe damage as the disease progresses. Great responsibility is assumed, therefore, by advising medical treatment in early cases, in which thyroidectomy might prevent the severe conditions and in many instances the death of patients who would fail to improve under medical treatment.

The metabolic rate is a definite index to the degree of hyperthyroidism in a given patient at a given time. It is of very great value as a diagnostic aid in the early stages of exophthalmic goiter, when studied in con-

* From the Mayo Clinic.

function with the symptoms and general appearance of the patient. As a rule, the clinical picture presented by the patient, the metabolic rate, and the pulse pressure run hand in hand, the symptoms increasing and decreasing as the metabolic rate varies. However, patients do not always present the same clinical picture while carrying similar metabolic rates; for instance, one patient with a rate of $+50$ per cent. may be in a crisis and extremely ill, while another with the same rate may show a very different clinical picture and be a fair surgical risk. Some persons seem to develop a certain tolerance to increased metabolism. We occasionally see a patient who, although carrying a safe metabolic rate, must be classified as a bad surgical risk. Later, the same patient, while carrying the same rate, may present a different clinical picture and stand the operation which previously was considered unsafe. In all instances in which a high metabolic rate is associated with symptoms indicative of a high-grade toxemia, such as nervousness, irritability, cardiac dilatation, high pulse rate, loss of weight and strength, nausea, vomiting and diarrhea, the condition must be looked on as serious and nonsurgical. The metabolic rate gives no indication of the amount of damage which may have been done previously; it can be used only partially as a means of deciding on the best type of operation to be performed. We make a careful selection of the type of operation for patients with a rate above $+40$ per cent., and we hesitate to perform a primary thyroidectomy in patients with metabolic rates 60 to 70 per cent. above normal. In the majority of such patients without marked cardiac damage, and who, except for this high rate, would seem good risks, we perform a preliminary ligation as a means of testing their ability to stand any operative procedure without the precipitation of an acute hyperthyroidism. If a mild reaction follows the ligation, a thyroidectomy is performed after seven or eight days; but if the reaction is severe, it is best to do a second ligation and to wait three or four months before performing a thyroidectomy.

Certain patients, after having had the disease for some months, present themselves for treatment because of increased symptoms. As a rule they have lost weight and probably are losing weight at the time. Such patients will usually be found to have high metabolic rates. If the loss of weight and general strength has been marked, and especially if the patients are highly nervous and irritable, we have found that a thyroidectomy is performed with considerable risk because in these cases a crisis may be precipitated by even a slight surgical procedure. In such instances we usually perform two superior polar ligations, under local anesthesia, at one operation or at intervals of seven or eight days, and wait for three or four months before performing a thyroidectomy.

Patients who consult us during acute crises are considered extremely dangerous surgical risks, and we prefer to treat them by means of rest, fluids and careful nursing until the crisis is passed and there is a gain in weight, with a corresponding subsidence of the pulse rate, the nervousness, and mental irritability. The metabolic rate usually drops considerably following a crisis; therefore, patients who have just passed such a period are not likely to be thrown into an acute hyperthyroidism by a thyroidectomy; but on account of the marked degenerative changes in their vital organs and the weak, degenerated heart muscles, the operation may prove a dangerous procedure. In such patients

we have usually found it safer to perform two superior polar ligations, under local anesthesia, seven or eight days apart, thus preparing the way for thyroidectomy several months later.

In a few patients who seem to be risks for any surgical procedure and who fail to respond to medical treatment sufficiently to warrant an operation, we occasionally are able to perform two ligations at intervals of from seven to eight days after having made one or two injections of quinin and urea hydrochlorid solution or of hot water, into the thyroid gland. Such injections seem to lessen the tendency to excessive reaction following ligation.

It will be noted that ligation is performed with two ideas in view: first, as a means of testing patients who seem fit surgical risks for thyroidectomy but concerning whom there is enough doubt to make ligation the safer procedure, and second, as a means of preparing patients for thyroidectomy.

Patients who are being tested and who stand a ligation well can, in the majority of instances, stand a thyroidectomy. The reaction following the ligation of one superior pole, performed under local anesthesia, is similar to, but much less marked, than that which occurs when a thyroidectomy, instead of a ligation, is done. This reaction consists of an increase in the pulse rate and temperature, vomiting, nervousness, and mental irritability; it usually begins within a few hours after the operation has been performed, gradually increases, and reaches its height within from thirty-six to forty-eight hours. In exceptional cases it may be so marked as to produce death from an acute hyperthyroidism in from one to four days following operation. As a rule, however, it begins to subside after from forty-eight to seventy-two hours and, in a few days, the patient is in a state similar to that present before the operation. In cases in which the reaction following such a ligation is marked we perform a second ligation, and later a thyroidectomy.

When ligation is done with an idea of preparing patients for thyroidectomy, the superior pole is ligated on each side, under local anesthesia, at intervals of seven or eight days, and the patient is allowed to wait for three or four months before a thyroidectomy is done. During this period there is usually a marked abatement of symptoms and an increase in weight averaging about 21 pounds for each patient, while the general improvement is such that a thyroidectomy may be done with comparative safety. As a matter of fact, in some of these cases the surgeon hesitates to recommend a thyroidectomy; but experience has shown that hyperthyroidism may recur in from one to five years unless a thyroidectomy is done.

The degree of improvement which follows thyroidectomy depends largely on the extent of damage to the vital organs at the time of operation and on the amount of thyroid tissue which is removed. If the damage to organs has been extensive, it is impossible to restore the patient to normal health; the operation usually stops the hyperthyroidism and great improvement follows, but the organs do not return to normal. In doing a thyroidectomy on a patient with exophthalmic goiter, we have found that in order to bring the metabolic rate to nearly normal it is necessary to remove all of one lobe, the isthmus, and the greater portion of the other lobe, leaving a piece of gland tissue probably not larger than one half or one third of a normal sized lobe. If not enough thyroid tissue is removed, and this may be proved by metabolic tests,

the patient may be benefited, but will continue to have symptoms of hyperthyroidism. In a few patients, the remaining portion of the thyroid gland hypertrophies and the symptoms recur. In either case, if the metabolic rate indicates a degree of hyperthyroidism which seems incompatible with good health, we reoperate and remove a portion of the thyroid tissue which was left at the first operation.

LETHAL DOSE OF ROENTGEN RAYS FOR CANCER CELLS*

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AND

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Within the last few years, and especially since the introduction of the Coolidge tube, much has been accomplished in the establishment of suitable dosage for the therapy of superficial and benign skin lesions

The difficulty of accurately measuring the dosage of roentgen ray compelled the repetition in 1918 and 1919 of much of the previous work; but the ultimate figure are quite concordant with the preliminary ones, the slight differences being largely attributable to a more efficient transformer which was substituted for the one first used, and to the more accurate measurement by ionization methods of the roentgen-ray output.

In most of the investigations which have previously been made on tissues under these conditions, very soft rays were used, the penetration of which was limited so that a large dose could not be given the deeper tissues without destruction of the skin, as was well shown by the experiments of Wedd and Russ.¹

Quite recently, Kimura² published an account of a number of radiation experiments, but in all his series he also used very soft unfiltered rays, with a spark gap of from 4 to 8 cm. Such soft roentgen rays have, as just stated, a practical therapeutic value only for superficial growths, the penetration being very slight and the general tendency at present is to use highly filtered rays with a spark gap of from 8 to 9 inches

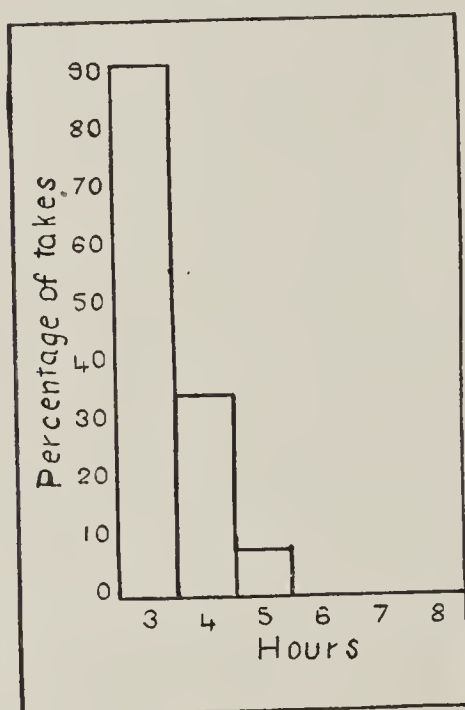


Fig. 1.—Results of exposure of mouse sarcoma 180 in vitro to one-fourth dose of roentgen ray, 85 kilovolts strength, at 23 cm. distance, with 3 mm. aluminum filter.

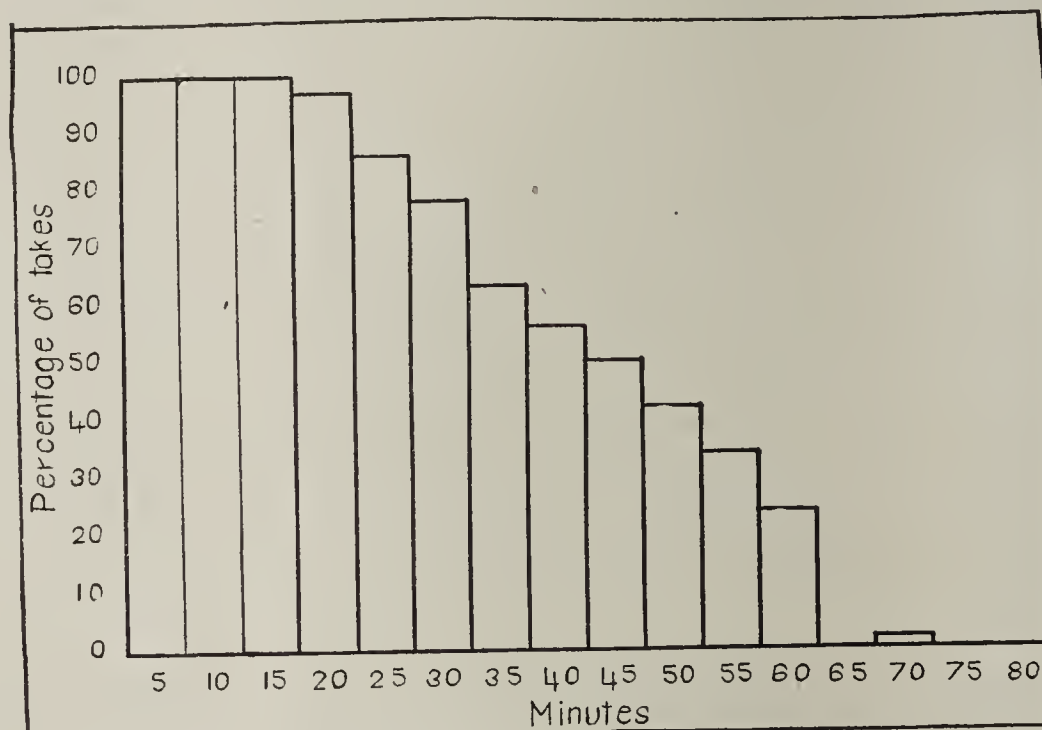


Fig. 2.—Results of exposure of sarcoma 180 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

with the roentgen ray. The lethal dose for cancer cells, however, has not, so far as we are aware, been accurately determined for filtered rays of short wavelength such as are now used for deep therapy. The experiments described below were, therefore, undertaken in 1916, with tissue growing in culture as well as in the living animal.

There is a distinct advantage in the use of animal tumors, as they furnish an easily reproducible standard for biologic calibration of the output of any roentgen-ray machine and of the effects of filters, while human material is extremely variable in its resistance to the rays, ranging from the basal-cell epitheliomas, which often yield to a single erythema dose, to the chondrosarcomas and fibrosarcomas, which are much more resistant than healthy tissue and in many instances cannot be influenced by any quantity of roentgen ray which does not endanger the life of the patient.

representing a terminal voltage across the tube from 80 to 90 kilovolts. When low voltage is used the effective roentgen-ray output from a tungsten target tube is small, the K radiation appearing only when about 70,000 volts are applied to the tube terminals, while a much higher yield is apparent with from 80 to 95 kilovolts.

Since this work was completed, German journals have been received containing reviews of a monograph by Krönig and Friedrich,³ unfortunately at present available only in abstract, and also two papers by Seitz and Wintz.⁴ Both groups of investigators used ionization apparatus to measure the dosage of roentgen ray and report that they have determined the carcinoma

* From Columbia University, George Crocker Special Research Fund, F. C. Wood, M.D., director.

* A preliminary report of some of this work was read before the American Association for Cancer Research in March, 1918, and published in the *Journal of Cancer Research* 4:49 (Jan.) 1919.

1. Wedd, B. H., and Russ, S.: The Effect of Roentgen and Radium Radiations upon the Vitality of the Cells of a Mouse Carcinoma. *J. Path. & Bacteriol.* 17:1, 1912.

2. Kimura, Noriyoshi: The Effects of X-Ray Irradiation on Liver Carcinoma and Sarcoma Cells in Tissue Cultures in Vitro, *J. Cancer Res.* 4:95, 1919.

3. Krönig and Friedrich: Physikalische und biologische Grundlagen der Strahlentherapie; review in *Fortschr. a. d. Geb. d. Röntgenstrahlung* 26:208, 1919.

4. Seitz, L., and Wintz, H.: I, Grundsätze der Röntgenbestrahlung des Gebärmutterkrebses und des Karzinoms im allgemeinen; die Karzinomdosierung, München med. Wchnschr. 65:89, 1918; III, Die Röntgenbestrahlung der Genitalsarkome und anderer Sarkome und ihre Erfolge, die Sarkomdosierung, *ibid.*, p. 527.

and sarcoma "dose." These determinations were, it is stated, made on human carcinoma and sarcoma, and the dose was determined by Krönig and Friedrich as "the amount causing shrinkage of a carcinoma nodule." This is slightly less than a skin erythema dose, employ-

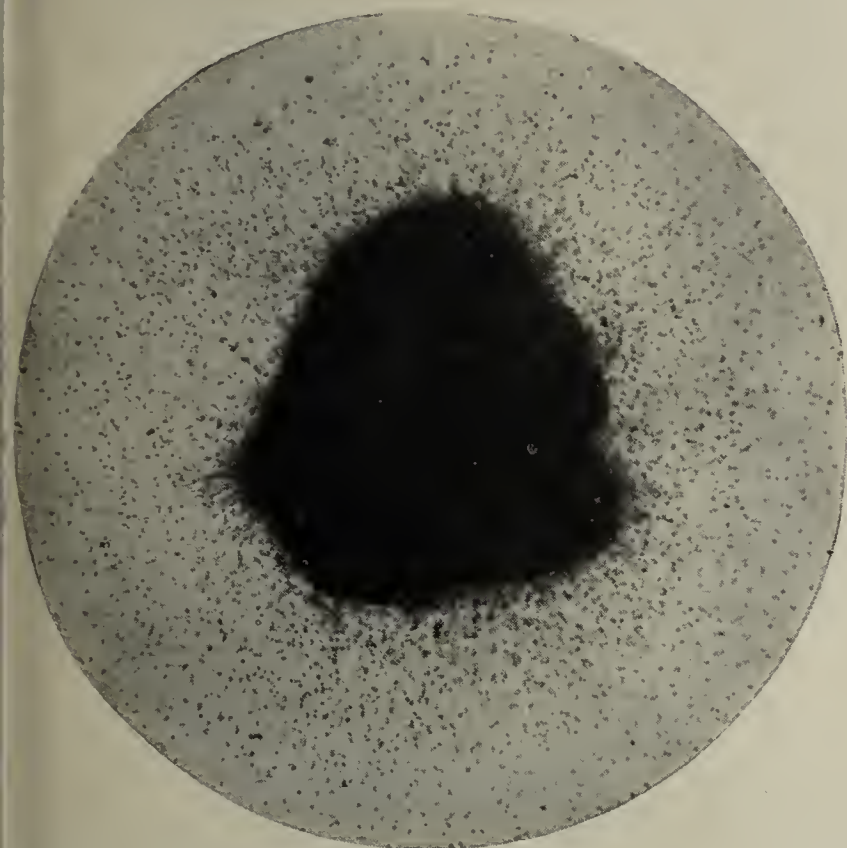


Fig. 3.—Tissue culture, sarcoma 180, exposed to four erythema doses of roentgen ray.

ing as they did 1 mm. of copper as a filter. Seitz and Vintz, using 0.5 mm. of zinc as a filter, found that the "carcinoma dose" is about 20 per cent. more than this. Such quantities of roentgen ray are about those which have for many years been known to be capable of causing the temporary disappearance of metastatic skin nodules of carcinoma of the breast with fair frequency. They are far below the amount required to affect primary growths of the same type. The latter authors state also that tumors vary in their susceptibility, a fact long known to every roentgenologist. They give their "sarcoma dose" as from 60 to 70 per cent. of that for a skin erythema; but their experience is confined to a few cases, and a wider knowledge will probably bring a realization of the fact that many sarcomas resist enormous doses of roentgen ray.

While the accurate estimation of roentgen rays with standards of barium platinocyanid is difficult, if not impossible, they were, nevertheless, employed to furnish a rough approximation of the erythema dose. Graduated exposures over small areas were then made on the skin of the back of several patients, and the erythema dose for this region was obtained. This gives a universal biologic calibration of the amount of roentgen ray produced. The scale readings of a very sensitive galvanometer connected with an ionization chamber were then determined, and all conditions of current, voltage, distance, etc., were accurately recorded. With each series of experiments the apparatus was adjusted so that the same galvanometer deflections were again obtained. This is the easiest, simplest, and only satisfactory way with which we are acquainted of measuring the roentgen-ray output from a tube; and even though the results are probably not absolutely accurate, they are close enough for clinical work. The usual factors recorded, such as milliamperes through the tube, and the spark gap, give rise to errors, often as

much as 20 per cent., with the same transformer and tube, owing to fluctuations in the commercial current supply and variations of an unknown sort in the transformer and its regulating connections. It was found necessary to install a storage battery to heat the tube filament, instead of the usual low voltage transformer, as fluctuation on the line caused the tube to give off very irregular quantities of roentgen ray as measured in the ionization chamber, even when the variations in the milliamperage through the tube were slight.⁵

Our intention was to establish on easily transplantable mouse tumors the lethal dose of roentgen rays of moderately short wave length produced from a tungsten tube at a voltage which gave an ample yield of energy including the K series of lines and the short wave length region above it, the softer components of the general radiation being removed by a filter of 3 mm. of aluminum. This is the filtration most generally used for deep therapy, although, since its employment was suggested by Elihu Thompson in 1896, no scientific determination has been published showing exactly the thickness most effective on cancer tissue. Our experiments show no practical difference due to length of exposure. If one-fourth the dose is given for four times as long, the lethal quantity is the same (Fig. 1).

The same tumors were used in these as in previous experiments undertaken in this laboratory with radium instead of roentgen ray,⁶ i. e., mouse sarcoma 180, Crocker series, and mouse carcinoma 11, Crocker series. In addition, mouse embryo kidney was used, this offering a normal tissue as a check on the biologic effects of the rays. Sarcoma 180 is a rapidly growing, large cell sarcoma with but little interstitial tissue. It almost never undergoes spontaneous recession. Carcinoma 11 is a breast carcinoma of a medullary type, occasionally receding.

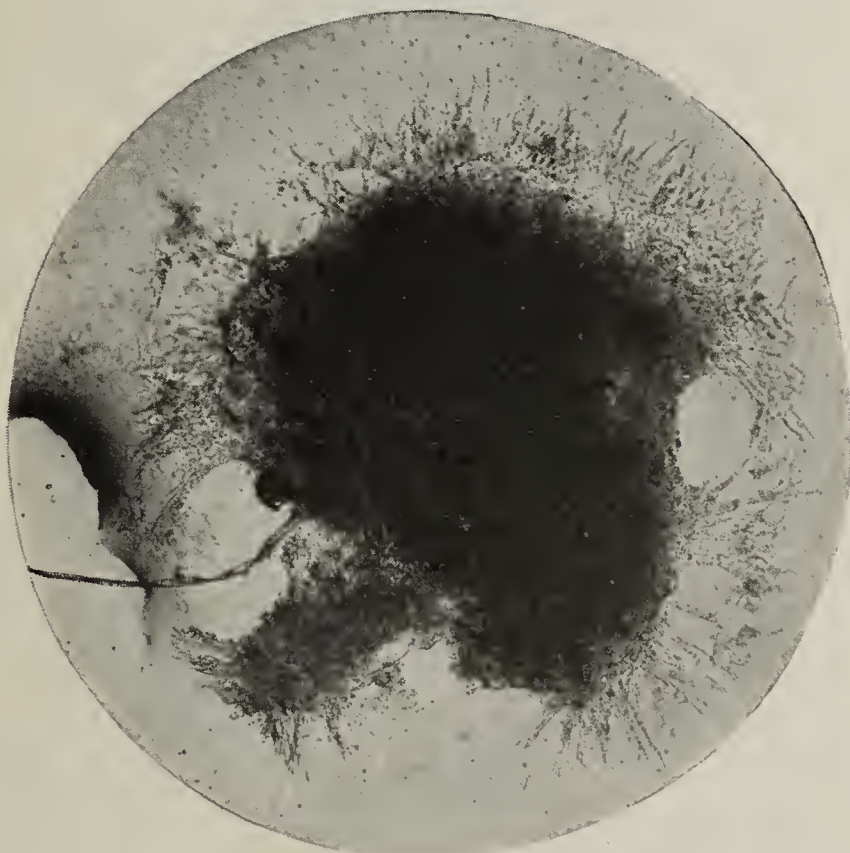


Fig. 4.—Tissue culture, mouse embryo kidney, exposed to three erythema doses of roentgen ray.

In order to avoid the errors due to random fluctuations which occur when too small a number of animals

5. We are indebted to Prof. William Duane of Harvard University for valuable advice in connection with the ionization apparatus, which is of his design (Duane, William: *J. Cancer Res.* 4: 72 (Jan.) 1919).

6. Wood, F. C., and Prime, F.: *The Action of Radium on Transplanted Tumors of Animals*, *Ann. Surg.* 62: 751, 1915.

is used, from fifty to seventy-five animals, and often more, were inoculated in each series of experiments.

The tumors and the kidney tissue were removed under rigid aseptic precautions and cut into small pieces, averaging about 0.001 gm. in weight. These were moistened with a drop of Ringer's solution and placed in hollow slides divided by a small ridge of paraffin, on one side of which was the tissue and on the other a drop of Ringer's solution to prevent any drying of the tissue while undergoing treatment. The slides, which had been ringed with petrolatum, were then sealed by a cover glass, from 0.15 to 0.18 mm. in thickness, and another paraffin ring.

At the end of each exposure, half of the tumor tissue was inoculated into mice, and from the remainder in vitro growths in plasma were made. Control tumor series were made at the same time from unrayed tissue, and these also were inoculated into mice and grown in vitro. For the in vitro cultures a mixture of mouse serum and chicken plasma was used. Blood was drawn with a syringe from the heart of a mouse,

measured at skin distance, or twenty at half the distance. That such pastil readings have no biologic value may be judged from the well known fact that the color produced varies with the wave length of the roentgen ray used. For example, when the ionization chamber is employed, the deflections with the tube running as above were 160 mm. without a filter, and 55 mm. with 3 mm. of aluminum. In other words, the energy as measured by the ionization was as 1 to 3. A skin erythema was produced in ninety seconds and in eleven minutes, respectively, or in a proportion of about 1 to 7, while the pastil at 21 cm. required six minutes to reach teinte B with unfiltered rays, and eleven minutes with the filtered, a proportion of less than 1 to 2. Hence, statements like the one made by Wetterer⁷ that carcinoma is injured by a dose of three Holzknecht units is not only vague in form, but untrue unless the very softest rays are employed.

The pastil readings were finally made on a Cox radiometer, the Hampson and Holzknecht apparatus being found less satisfactory for our purposes. This, therefore, was the quality and quantity of roentgen ray used in the exposures, the time alone being varied.

SARCOMA

When sarcoma tissue was inoculated into mice immediately after exposure, it was found that when roentgen ray had been given for five, eight and ten minutes (a dose insufficient to produce erythema on human skin), and for twelve, fifteen and eighteen minutes, there was no appreciable difference in the number of tumor takes in mice or in the rate of growth between the control and treated tissue. In tissue that had been exposed for twenty-five minutes or longer, a gradual change was noticed; there was a decrease in the number of tumor takes and also in the rate of growth, which was much retarded, until after sixty minutes of roentgen-ray treatment there were no takes except in one instance. In the series which had been exposed to the action of the roentgen rays for seventy minutes, one tumor, out of forty-four inoculations, appeared at the end of four weeks. Similar "escapes" were noted in the studies on the radium lethal dose, published in 1917.⁸ There were no growths, however, among the grafts which had been treated for sixty-five minutes, nor among those treated for eighty minutes. It would seem, therefore, that in the majority of cases an exposure of between fifty-five and sixty minutes, or five or six so-called erythema doses, is usually sufficient to destroy the proliferative power of the cells of sarcoma 180, but not always, as is shown by the one growth appearing after four weeks, though the exposure in this case was from ten to fifteen minutes longer than was ordinarily required to kill all the cells. The percentage of grafts which grew after exposure to roentgen ray is graphically shown in Figure 2. As half the tumor particles did not grow after forty-five minutes, the broad assumption is permissible also that half the cells in the tumor would be killed by such exposure; it is, however, impossible to prove this.

SARCOMA TISSUE CULTURES

The tissues which were grown in plasma showed most interesting pictures. At the end of twenty-four hours there was a profuse growth in both the treated and the control tissue, which reached its maximum in



Fig. 5.—Tissue culture, mouse carcinoma 11, exposed to four erythema doses of roentgen ray.

without killing the animal, and the serum, after being allowed to separate, was diluted with Ringer's solution in the proportion of one part of serum to two parts of Ringer's solution, and to this mixture was added chicken plasma, one part to seven of the serum solution. The piece of tissue to be grown, either control or radiated, was placed in the center of a cover glass, and a drop of the serum-plasma mixture was added and spread out evenly with a needle; the cover glass was then inverted over a hollow slide which had previously been ringed with petrolatum, and in the bottom of which there was a drop of Ringer's solution, and the slide was finally ringed with paraffin. The series was incubated at 37 C., and observations were made at the end of twenty-four hours.

With the type of rectifying transformer employed, eleven minutes were required to produce an erythema reaction on the skin of the back of a human being at a distance of 23 cm. from the anticathode of a Coolidge tube, with 3 mm. of aluminum as a filter, while 5 milliamperes of current were used with a 21 cm. spark gap, an amount equivalent to five Holzknecht units mea-

7. Wetterer, Josef: *Handbuch der Röntgentherapie, nebst Anhang* Ed. 2, Leipzig, O. Nemnich, 1913, p. 177.

8. Prime, Frederick: *Observations on the Effects of Radium on Tissue Growth in Vitro*, J. Cancer Res. 2: 107 (April) 1917.

about forty-eight hours. There was but little difference in the extent or character of the growth, whether irradiated or not, and even in the tissue which had been treated with roentgen ray for forty-five minutes there was always a profuse outgrowth of cells (Fig. 3). These outgrowths were carefully removed, and some were fixed in Zenker's fluid and stained with Delafield's hematoxylin, while the rest were inoculated into a series of mice. Tissue treated up to twenty-five minutes grew as did the controls; whereas after twenty-five minutes of irradiation the number of takes and the rate of growth diminished, until after forty-five minutes' exposure no growth occurred. Of the sections which were stained, some were studied just as they were fixed, and others were cut in serial sections. Mitotic figures in the nuclei were found to be very scarce, though some of the treated tissue in which no mitoses were found grew well. The finding of mitotic figures was not, therefore, always an indication of the power of the tissue to grow when inoculated into mice. The probability is that as cells are much more sensitive in the mitotic phase, only those in the resting stage survived and were able to grow.

CARCINOMA

When mouse carcinoma tissue was exposed to roentgen ray in the same fashion, the results were slightly different. The tissue planted in vitro never gave rise to such profuse growths as arose from the sarcoma and kidney tissues (Fig. 5). The tissue was perhaps slightly more susceptible to the influence of roentgen ray than was sarcoma, and after an exposure of twenty minutes showed a diminution in its growth rate and in the number of takes when transplanted into other animals. An exposure of fifty minutes was required, however, before most of the tissue was killed, and even then there were two belated growths which appeared after the third week, showing that it is impossible, even when small pieces of tissue are treated, always to be sure of killing every cell, even though five erythema doses are given (Fig. 6). It should be remembered that neither roentgen ray nor radium kills the cells subject to its influence in a rapid manner. No doubt many of the cells exposed functionate for a few days, and spread out in culture in ameboid movements even when a dose which will ultimately be lethal has been administered.⁹

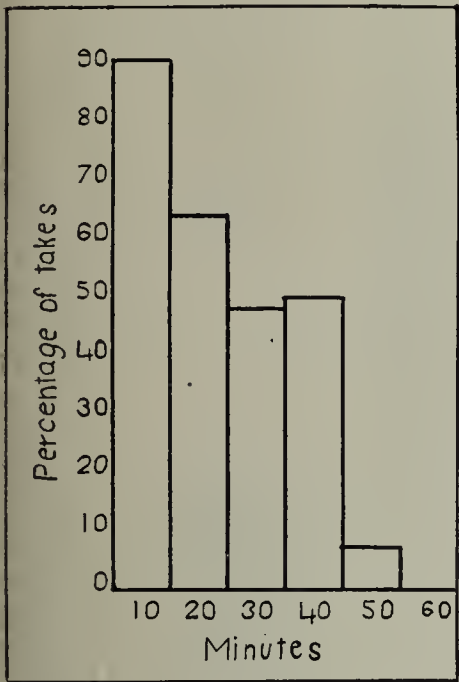


Fig. 6.—Results of exposure of carcinoma 11 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

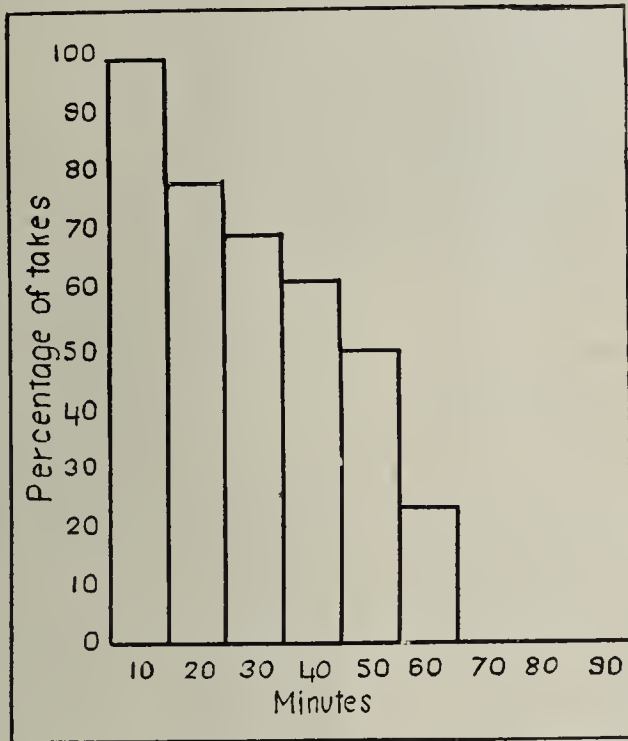


Fig. 7.—Results of exposure of sarcoma 180 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

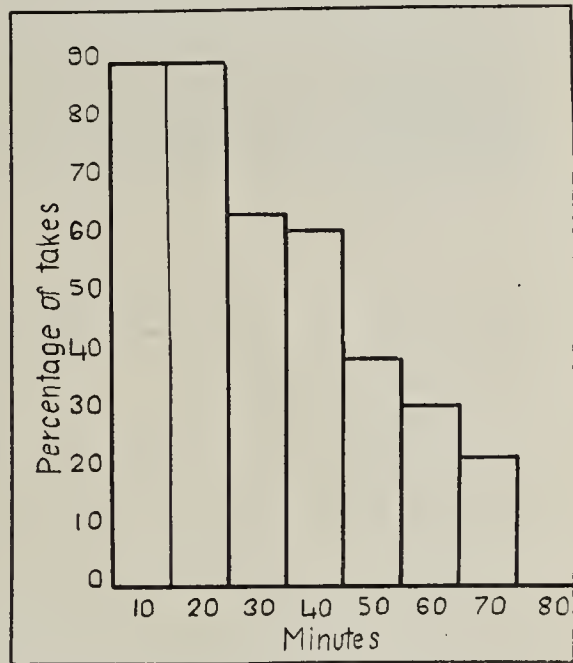


Fig. 8.—Results of exposure of carcinoma 11 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

NORMAL CELL CONTROLS

When mouse embryo kidney was used, the embryos were removed by operation as near term as possible. The kidneys were excised from the embryos and then treated in the same way as was the tumor tissue, except that no animal inoculations could be made. With this tissue there was a profuse growth, chiefly of connective tissue, in all the in vitro cultures which had been exposed to roentgen ray even up to forty-five minutes; beyond this, however, no growth took place (Fig. 4). No noteworthy difference could be observed between the treated tissue and the controls, except that after an exposure of twenty minutes to roentgen ray the growth was not quite so profuse as in the controls. There is, therefore, but little difference in the roentgen-ray sensibility of rapidly growing normal connective tissue cells and that of sarcoma cells. Clinically, fibrosarcoma is much more resistant than granulation tissue, while lymphosarcoma is more sensitive; hence, in estimating the radiosensibility of human tumors the histologic type should always be known.

TUMORS EXPOSED IN THE ANIMAL

In order to determine whether the effect of roentgen ray on these tissues was influenced by the removal of ionization products and by a constant supply of fresh food to the cells, such as occurs when the tumor remains in the host, a number of mice bearing well developed tumors of sarcoma and carcinoma were enclosed separately in a small box and exposed to similar doses of filtered roentgen ray over periods varying from ten to ninety minutes. At the end of the treatment, the animals were killed, the tumors were removed under the usual aseptic precautions, and fragments from the portion of the tumor nearest the tube were inoculated through a hollow needle into a series of mice. The only difference in filtration was, therefore, the use of a millimeter or so of skin, instead of the thin cover glass used in the in vitro tests. It was found that fragments of sarcoma 180 which had been thus exposed for ten or fifteen minutes showed good

9. Prime, Frederick: Action of Radium on Embryo Heart Muscle, Proc. New York Path. Soc. 16: 56, 1916.

growth when transplanted into other mice; but after the animal bearing the tumor had been irradiated for twenty minutes there was noticed a slowing in the growth rate of the tumor after inoculation, which gradually increased until after sixty minutes there was no growth at all (Fig. 7).

When carcinoma 11 was exposed in vivo and then transplanted into other mice, it was found that slightly longer exposures to roentgen ray than in the case of sarcoma were required before any effect was shown on the growth of the tumors after inoculation. After sixty-five minutes' exposure the appearance of the tumor was delayed, but showed fair growth; and it was not until after an exposure of seventy minutes that no growth resulted (Fig. 8).

CONCLUSIONS

1. Approximately four erythema doses of roentgen ray, given continuously and filtered through 3 mm. of aluminum, are required to kill mouse carcinoma, and five to kill mouse sarcoma exposed in vitro; but occasionally some cells may escape the effects of even six doses.

2. Approximately six erythema doses of roentgen ray are required to kill sarcoma cells in vivo, as compared to five required to kill the same cells in vitro; and approximately six erythema doses are required to kill carcinoma cells in vivo, as compared to four required to kill the same cells in vitro.

3. The in vitro outgrowth from sarcoma tissue after four erythema doses of roentgen ray produced tumors when inoculated into mice.

4. At least five erythema doses of roentgen ray are required to kill carcinoma and sarcoma cells in tissue cultures, and at least four to kill embryonic connective tissue cells in cultures.

5. The amount of in vitro growth is no indication whether the tumor cell is or is not capable of proliferating in the animal body. The growth observed after lethal doses is evidently due to the slow action of the rays, which permits cells potentially dead to wander out into the medium and to complete a division process before their growth momentum is finally checked.

6. Absence of mitotic figures after roentgen ray treatment is not an indication of lack of ability of the cells to grow in the animal body.

7. The practical conclusion which may be drawn from these observations is that the amount of roentgen ray necessary to kill all the cells of a rapidly growing, very cellular, and highly malignant sarcoma or carcinoma in man is between five and seven erythema doses of filtered roentgen ray when the tumor is on the surface of the body. Every centimeter of tissue that covers the tumor makes an additional amount of roentgen ray necessary. For example, when slices of fibroid uterus are used as absorptive material, the galvanometer deflections show that at a depth of 2 cm. 19 per cent. more roentgen ray is required; at 5 cm. depth, 47 per cent. more, and at 10 cm. depth, 65 per cent. more. While many tumor cells may possibly be slowed in their progress and mitotic forms killed at such depths, it is doubtful whether all can be destroyed. The basal-cell tumors and the lymphosarcomas are, as is well known, much more susceptible to radiation. Small, superficial, metastatic carcinomas are also, in some instances, more susceptible than is the primary tumor.

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DISLOCATION OF THE CARPAL SCAPHOID AND SEMILUNAR BONES

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Dislocation of the carpal bones is a rare occurrence. A review of the literature shows that only very few cases of dislocation of the carpal bones have been reported. Inquiry among my orthopedic colleagues revealed that many of them had not seen a single case, while others had seen one or at most two cases during their entire experience. Fracture of the scaphoid, however, has been seen frequently, and there are a fairly large number of cases reported.

The two cases described below are reported, first, because of the rarity of the condition, and secondly, because a good functional result was obtained in the one case by operative removal of the dislocated bones and in the other case by conservative treatment alone.

REPORT OF CASES

CASE 1:—History.—

H. B., a laborer, aged 21, fell from a fifth story window and injured his left wrist. It was impossible to obtain a history of the position of the hand at the time of injury. I first saw the patient about seven weeks after the injury. At that time, he complained of pain, swelling and disability of the left wrist and fingers. The left hand and wrist were moderately swollen, the swelling being especially marked over the front of the wrist where a mass of bone was easily palpable. This mass was directly under the skin, and was



Fig. 1 (Case 1).—Dislocation of scaphoid and semilunar of left wrist, lateral view.

freely movable in the lateral but not in the vertical direction. The styloid processes of the ulna and radius were in proper relationship. There was no tenderness or discoloration of any part of the wrist. The back of the wrist was moderately swollen, and palpation did not reveal any hollow. There was no voluntary motion in the wrist, but there was a passive flexion of about 20 degrees, and a few degrees of abduction and adduction. The fingers were not swollen but were in a flexed position, and their motion was much restricted. Forced extension of the fingers was painful. The grip was so weak that the patient could not hold even a light object. There were no sensory disturbances in the hand or wrist. The color of the hand and fingers was normal. The radial and ulnar pulses were present, and were easily palpable.

Examination.—A lateral roentgenogram of the wrist showed a dislocation of the scaphoid and semilunar bones upward and forward to a position anterior to the ulna and radius, as shown in Figure 1. The scaphoid was entirely above the radiocarpal joint line, while at least two thirds of the extent of the semilunar was above this line. The lower pole of the semilunar was also fractured. It is interesting to note

that these bones were entirely separated from the radius and other carpal bones: they had evidently torn through the ligamentous and muscular tissue in front of the wrist joint, and had become entirely subcutaneous.

Treatment and Results.—On account of the very marked displacement of these dislocated bones from the wrist joint, we considered that reduction by manipulation would be impossible, and that the best treatment would be the operative removal of them. Accordingly an anterior vertical incision was made over the wrist joint and the lower part of the forearm. The bones were found embedded in the subcutaneous tissue, and were surrounded by what appeared to be a fibrous capsule which had evidently been formed about them since their dislocation. None of the flexor tendons or the nerves on the front of the wrist joint were exposed.

Figures 2 and 3 are roentgenograms taken after the operation and show the appearance of the wrist minus the scaphoid and semilunar bones. This patient has been receiving baking, massage, manipulation of the wrist and exercises, and the function of the wrist and hand is rapidly improving. The mobility of the fingers has gradually increased, and he is now able to grasp and hold a five-pound dumb-bell. The progress in the improvement since the operation has been continuous, and encourages us in the belief that the function may ultimately be normal. This is especially interesting in view of the serious disturbance of the wrist joint by removal of two of its component bones.

CASE 2.—History.—M. O., man, aged 35, was thrown from an automobile, injuring his right wrist. Immediately following the injury the wrist became moderately swollen, painful and

accident, when the persistent swelling, tenderness, pain and disability led to the taking of a series of roentgenograms. It is interesting to note that a roentgenogram of the wrist was taken a few days after the injury, a diagnosis of Colles' fracture was made, and reduction was attempted.



Fig. 3 (Case 1).—Lateral view of left wrist after removal of dislocated scaphoid and semilunar.



Fig. 4 (Case 2).—Dislocation of semilunar of right wrist.



Fig. 2 (Case 1).—Anteroposterior view of left wrist after removal of dislocated scaphoid and semilunar.

tender. The fingers were held flexed and were greatly restricted in their mobility. This man had suffered so many other and more serious injuries at the time that very little attention was paid to the wrist until several weeks after the

Examination.—Our roentgenograms show very definitely, as is seen in Figure 4, that the semilunar bone had been dislocated forward. The bone appears as a three-quarter moon, distinctly separated from and in front of the os magnum. It is rotated so that its inferior surface points downward and forward, and the superior surface points backward and upward instead of directly upward. The posterior border of the semilunar points downward, and the posterior half of the bone is in front of the os magnum. The upper articular surface of the os magnum almost touches the radius. The dislocation is not so complete as in the preceding case. In fact, it is only a partial dislocation or subluxation.

Originally the wrist was very much swollen and tender, and examination was not satisfactory. Several weeks after the injury when the swelling had subsided, palpation revealed a mass on the front of the wrist, and what was more interesting, a hollow in the middle of the back of the wrist. These findings are pathognomonic of dislocation of the carpal semilunar. There was a great deal of stiffness and pain in the wrist and fingers, and also numbness in the latter. Manipulation of the fingers was very painful. There was some voluntary motion in the wrist and fingers, which increased as the swelling subsided.

Treatment and Results.—Manipulative reduction under an anesthetic was refused. In fact, as the motion was increasing, and the disability became less pronounced, it was felt that conservative treatment would yield a good result. The treatment consisted in baking, massage, gentle manipulation and graduated exercises. The improvement has been slow but continuous, until at the time of this report the patient has almost perfect use of the hand and fingers.

The patient lacks as yet the normal strength of the wrist and hand, but he can write and perform all the finer motions of the fingers. There is at present no disturbance of sensation. There is no pain in the hand, except occasionally, and then it is not severe. However, it is important to remark that the pain did last for many months, and very much longer than in the first case in which the dislocated bones were removed.

1 West Eighty-Fifth Street.

THE TOURNIQUET

A MODIFICATION OF AN INSTRUMENT EMPLOYED
BY THE GERMANS IN THE LATE WAR

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After the Germans had evacuated the Saint Mihiel salient, a metal tourniquet of unusual design was found in one of their advanced post surgical hospitals by Lieut.-Col. J. M. Flint and Lieut. A. Dayton.

The instrument was made on the principle of the clamp: both arms were of rounded steel and covered with rubber tubing. It was given to me for trial in Mobile Hospital No. 39, and I had the opportunity to use it many times. At first the tourniquet was found to be unsatisfactory because the construction of the handles was clumsy, and the blades separated widely when tightened over the limb, thus failing to control bleeding. In order to obviate this, it was necessary only to cross the arms of the instrument during compression.

There were two sizes, one for the arm and one for the thigh. When properly applied I found this tourniquet simple to adjust, safe in its effect on the tissues, definite in its control of bleeding, and very adaptable for the purpose in operations on the upper and lower extremities.

AUTHOR'S MODIFICATION OF
GERMAN TOURNIQUET

The instrument was sent to the office of the chief surgeon, and I did not see it again. However, the principle of the design was readily recalled, and I had one made by Codman and Shurtleff of Boston, as shown in Figure 1. It is the German instrument modified in several details that I found unsatisfactory. The arms of the new instrument are heavier and so shaped as to pass over the thigh more readily and to cross in closing about the limb (Fig. 2). The joint is strongly made, and the handles are given a direction which brings them nearly parallel when the tourniquet is applied. An oblong slot is made in the center of one handle, through which passes the adjustment screw. This part of the instrument is slightly curved so that when the thumb nut is firmly adjusted with the tourniquet in position, the adjustment screw may be shifted forward releasing compression, and back again for renewed control of hemorrhage, should that be necessary (Fig. 3). The fact that this release of compression can be made without releasing the thumb nut gives one an opportunity in a simple manner to examine the stump quickly for vessels that have not been ligated, or momentarily to allow blood to enter the limb during other operations that are more prolonged.

NECESSITY OF CONTROLLING HEMORRHAGE

Surgeons in all periods of history have sought the most efficient means of restraining hemorrhage. From the exigencies of war have come the multiplicity of

measures and apparatus of which we have knowledge. When one realizes that three fourths of those who die on the battle field perish from hemorrhage directly, or from shock as a result of excessive loss of blood, it is evident why the problem has demanded the utmost thought and consideration in all ages.

Tourniquets employed in civil practice are almost without exception the products of war, or ideas which have arisen from the study of military surgery; and now that the greatest war of all times is passing into history, it is logical that surgical thought should become more accurately focused on the causes of surgical failures in the field and on a study of the principles thus learned so far as they apply to surgery in civil life.

It is common knowledge that nature stops hemorrhage from small vessels and not infrequently from arteries of large caliber. This is brought about by the natural process of retraction of the severed ends into the surrounding cellular tissue, and by contraction of the circular fibers so as to diminish the caliber of the vessel. In bleeding from vessels of large size, this process is not sufficient. The blood then becomes coagulated in the cellular sheath. By diminishing the area of the sheath and producing increasing pressure on the open artery, the flow of blood is retarded, allowing coagulation to continue both within and without the artery, thus closing the end of the vessel.

It is well to remember that air favors coagulability of the blood and contraction of the vessels. Thus internal hemorrhage from vessels of moderate size is more often fatal than bleeding from vessels of the same size which are near the surface of the body. Syncope delays hemorrhage from superficial vessels, but it may recur on the return of normal blood pressure, so that such liability should not be overlooked.

It is generally known that in full flight a bullet may divide an artery like a knife, and fatal hemorrhage may ensue, and that when a large vessel is divided by a sharp instrument the loss of blood is massive

continuous and usually fatal unless the bleeding from the artery is promptly blocked by clotting of the blood between the vessel and the skin. Then pressure causes cessation of hemorrhage as just described. On the other hand, the immediate loss of blood may be only slight when complete division of the vessel is produced by a projectile, or by a spent ball tearing its way through the vessel walls. When an artery thus divided contracts, its torn intima is brought together at several points, thus aiding the formation of a blood clot. MacLeod¹ remarks:

A considerable artery may be fairly cut across and give no further trouble beyond the first gush of blood which takes place at the moment of injury. In such cases the vessel contracts and closes itself. If only half divided, as it is apt to be by a shell or the quick passage of a ball, then the hemorrhage will be in all probability fatal.

1. MacLeod, G. H.: *Notes on the Surgery of the War in the Crimea*. London, John Churchill, 1858.



Fig. 1. Modified tourniquet.

DEVELOPMENT OF THE TOURNIQUET

Among the artificial methods of arresting hemorrhage, the tourniquet has been employed almost universally since the French surgeon, Morel, first applied his own invention of it at the siege of Besançon. It consisted of three parts: (1) a yard and a half of strong worsted, an inch broad; (2) a pad of leather, tightly stuffed with horsehair having a loop on one side of the band to slide through, and (3) a piece of strong leather having two apertures an inch apart through which the band or ligature is passed. This tourniquet was made on the principle of creating the maximum pressure over the vessel by the use of a pad, instead of a strong general pressure around the limb produced by a rubber bandage or elastic ligature. The latter was the method commonly used by the American forces in the recent war. All other tourniquets in use are simply modifications of the original instrument of Morel. Petit's tourniquet was the Morel appliance with a screw adjustment, a strap, buckle and a compress. In addition there was a clamp, or horseshoe tourniquet, Dupuytren's compressor, Chariere's tourniquet, Skey's, Moore's, Tyrell's, Lambert's, and the like.

The field tourniquet employed in the Civil War was a sort of "garrot" or Spanish windlass" and did not differ materially from that used in former wars.

D. Gross² thus wrote on this topic:

It is not necessary that the common soldier carry a Petit's tourniquet, but every one may put into his pocket a stick of wood 6 inches long and a handkerchief or a piece of thick compress and be advised how, when and where they are to be used. By casting the handkerchief around the limb and placing the compress over the main artery he can by means of the stick produce such an amount of compression as to put at once an effectual stop to the hemorrhage. This simple contrivance, which has been instrumental in saving the lives of thousands, constitutes what is called the "field tourniquet." A pipe, knife or ramrod may be used if no special piece of wood is at hand.

The tourniquet of Petit was widely employed in civil practice, and is still used today in many French hospitals.

DISADVANTAGES OF MOST TOURNIQUETS

Whenever a wounded soldier was brought to our operating room in France with a tourniquet firmly applied, I was apprehensive always about the vitality of the limb and its capacity to resist infection. I believe that this feeling was shared by most surgeons who were operating in the advanced zone of the army. This attitude prevailed among surgeons of the Civil War, for Prof. Charles A. Lee³ stated that a brigade surgeon who was at the Battle of Bull Run, where more than 10,000 were wounded, informed him that the use of the field tourniquet was so frequently followed by mortification and loss of the limb that he had come to the conclusion that it was far safer to leave the wounded man to nature with no attempts to arrest the flow of blood, than to depend on the common army tourniquet.

The firm application of a tourniquet for more than an hour usually meant trouble of some sort, either an intolerable degree of pain, imperfect retraction of the muscles after amputation, phlebitis, infection or gangrene, so that in some areas on the western front anything more than the temporary use of the tourniquet to control profuse bleeding was prohibited. Many of the tourniquets which I had occasion to observe on wounded soldiers were too tight or too loose or very difficult to release without removing the appliance entirely.

ADVANTAGES OF THE METAL TOURNIQUET

The metal tourniquet obviates the dangers incurred by the use of the elastic band, the elastic ligature or the various forms of a windlass control. Simply by shifting forward the adjustment screw, releasing the compression and allowing blood to enter the limb for a few seconds, at short intervals, this tourniquet may be carried effectively and without danger for many hours.

It is obvious that the ordinary soldier could not be burdened with this instrument, but it could go with the stretcher bearers and be provided in every advanced dressing station.

The same principles govern the use of compression for restraining hemorrhage in war as in civil surgery where some form of the elastic ligature is the appliance now most popular in use. When applied, such a tourniquet is generally too tight or too loose, the degree of compression depending on the strength and will of the individual adjusting it. Its application should be the last thing done before the incision is made, and it should be released as soon as the main vessels are taken up by hemostats. But the tourniquet is frequently put on before the surgeon is ready to operate, and once applied it is easily forgotten during the exigencies of an operation. A nurse can be instructed readily in the management of the metal tourniquet, and in operations other than quick amputations she will release the compression for ten seconds every ten minutes by shifting the adjustment screw forward, and the operation may proceed for from one to two hours with only slight inconvenience to the operator and complete

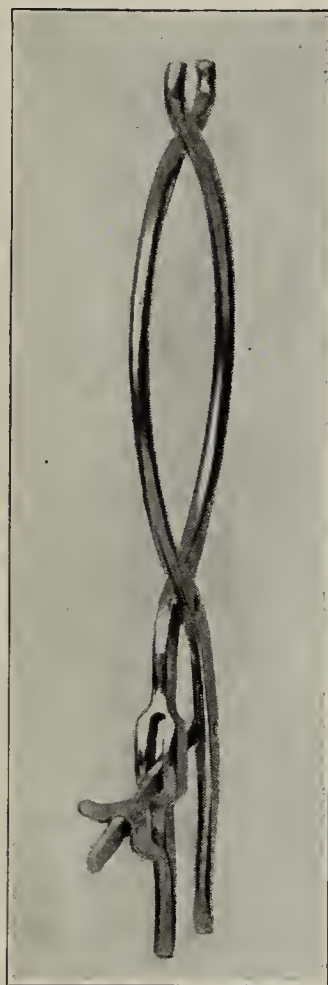


Fig. 2.—Side view.

safety to the vitality of the limb. The duties of the nurse in the management of the tourniquet are definite, and the same degree of reliance can be placed on her intelligence for this purpose as we have learned to accord her in the administration of anesthesia.

The metal tourniquet should be sterilized with the other instruments. With the prepared area extended to Poupart's ligament and the gluteal fold, the instrument is placed in position within the sterile field and over a folded towel which encircles the thigh. Immediately before the operation is begun, the leg is elevated and firm compression made by adjusting the thumb nut. Further management of the clamp has been referred to above. Rubber tubing may be used on the arms of the instrument, if desired.

Secondary hemorrhage, the bane of the surgeon in operations involving infection of the tissues contiguous to the larger vessels of the extremities, is not altogether a historic vision. It is relatively uncommon, but none

2. Gross, S. D.: *Military Surgery*, Philadelphia, J. B. Lippincott Company, 1862.

3. Lee, C. A.: *A Description of the Elastic Tourniquet*, New York, George F. Nesbitt & Co., 1862.

the less dreaded by surgeons of today, as it was by those of former times. Arterial ulcerations still occur as a result of erosion from mechanical irritation, compression for sequestrums in fractures, osteomyelitic foci, and prolonged contact with rigid draining tubes. Hemorrhage from these causes has no tendency to be arrested spontaneously.⁴ When secondary hemorrhage occurs from a large vessel, little can be done in time to save life unless a surgeon is near by. Under such circumstances the average nurse can accomplish little with

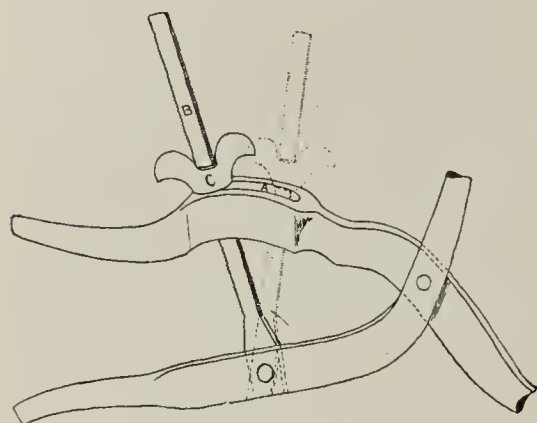


Fig. 3.—Handles of tourniquet: A, slot through which adjustment screw B passes; heavy lines represent adjustment screw holding clamp in position of compression with thumb nut C set; broken lines represent adjustment screw shifted and compression released.

the elastic tourniquet. Before the patient is exsanguinated, the nurse must act swiftly with a simple and trusty instrument of compression. On such occasions the speed with which adequate compression can be applied decides the issue between life and death.

"Simplicity, not complicity, of surgical instruments on service," though not a modern expression, is as truly the object to be aimed at today as it was many years ago when urged by Sir John Hall, inspector general of hospitals in the British army.

IODID AND BROMID PASTES AS USED IN ROENTGENOGRAPHY

PRELIMINARY REPORT

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Since Cameron¹ found that watery solutions of the iodids of sodium and potassium could be successfully used as opaque mediums in roentgenography, it has also been found at the Mayo Clinic that the bromids can be used to the same advantage. At present from 12 to 25 per cent. solutions of these salts are being used for cystograms and pyelograms. Similar solutions can also be used to great advantage for the injection of chronic tracts, sinuses, cavities and fistulas. A thin, watery solution, however, is difficult to retain long enough to obtain good roentgenograms.

With the idea of finding a suitable medium for injection purposes, I undertook a systematic study of various pastes for the incorporation of iodine and bromine containing substances. Organic compounds such as iodoform, eosin and erythrosin, which contain either iodine or bromine, are inferior to the simple inorganic salts.

IODINE OR BROMINE CONTENT OF VARIOUS COMPOUNDS

Table 1 expresses the percentages of iodine or bromine in the various substances used.

Theoretically, iodoform containing three atoms of iodine in each molecule should be opaque even in more

dilute solutions. Practically, this is found to hold good, as a one-third molecular solution of iodoform in ether casts a shadow of the same density as a molecular solution of either potassium or sodium iodide. Owing to the fact, however, that it is insoluble in water and only sparingly soluble in fixed oils, it cannot be used to advantage. Iodoform emulsions can be prepared, but do not prove satisfactory.

Thymol iodide (aristol) was also found to be inadaptable on account of its insolubility and low iodine content (46.1 per cent.).

Water soluble salts of erythrosin (tetra-iodofluorescein), even though each molecule contains four atoms of iodine, are unsuitable for use on account of their relatively low percentage of iodine and because of their high cost. This also serves to show that complex organic compounds of high molecular weight contain a lesser percentage of iodine or bromine than simple inorganic salts, in spite of the fact that the former contain more halogen atoms per molecule.

Eosin is too low in bromine and too expensive to be used in stronger solutions.

The inorganic salts of bromine and iodine are superior to their organic compounds in every way. From the standpoint of opacity, the iodides are better than the bromides because iodine has an absorption value considerably higher than that of bromine. It follows that the iodides can be used in weaker solutions and consequently cause no more irritation than the stronger bromide solutions.

At present the bromides cost considerably less (6 cents a pound) than the iodides (\$4.05 a pound).

STRENGTH OF PASTES USED

When comparing various substances as to their absorption values, molecular solutions are used. For routine use, percentage solutions are preferable.

In the test tube, an alcoholic solution of iodine crystals, less than 5 per cent. in strength, does not cast a well defined shadow. For this reason a solution of an iodide should contain more than 5 per cent. of combined iodine to be sufficiently opaque. Thus, a 10 per cent. aqueous solution of sodium iodide contains 8.46 per cent. of combined iodine and casts a good shadow.

For the injection of chronic sinuses, etc., it is well to keep well above these limits. Iodide pastes can be made

TABLE 1.—PERCENTAGE OF IODINE OR BROMINE IN VARIOUS SUBSTANCES USED

Potassium iodide (KI).....	contains	76.4%	iodine
Sodium iodide (NaI).....	contains	84.6%	iodine
Iodoform (CHI ₃).....	contains	96.8%	iodine
Dithymol-iodide (C ₂₀ H ₂₄ O ₅ I ₂).....	contains	46.1%	iodine
Potassium bromide (KBr).....	contains	67.1%	bromine
Sodium bromide (NaBr).....	contains	77.6%	bromine
Eosin (C ₂₀ H ₆ O ₅ Br ₄ Na).....	contains	47.6%	bromine

to vary from 15 to 30 per cent., and bromide pastes from 25 to 40 per cent. in strength. For routine use, 15 per cent. iodide or a 25 per cent. bromide paste is sufficient.

PREPARATION OF PASTES

A serviceable paste should have these characteristics:

1. It should be nonirritating.
2. It must be thick enough at body temperature, to be retained when injected.
3. It must be free from small lumps as often it is desirable to pass it through a medium sized needle.
4. Its base should be water soluble so that it can be easily washed from an injected area.

4. Keen, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company 5:86, 1909.

1. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodides as Opaque Mediums in Roentgenography: Preliminary Report, J. A. M. A. 70:754 (March 16) 1918.

5. It should be easily prepared and preserved.
I prepared pastes of starch, dextrin, acacia, Irish moss and tragacanth. Of these, the following were found to be serviceable:

The corn starch is suspended in the water and is then placed on the water bath. It is stirred continuously until a thick paste forms. The glycerin is then mixed in thoroughly. Glycerin forms a glycerid of starch and also prevents the surface film from forming when the paste cools. Now 15 gm. of an iodid or 25 gm. of a bromid are added. These go into solution readily without the addition of more water.

TABLE 2.—STARCH PASTE

Corn starch	10 gm.
Glycerin	16 c.c.
Water	100 c.c.

To preserve the paste and to render it unfit for bacterial growth when harbored in a tract, 0.5 c.c. of pure phenol or 1 c.c. of a volatile oil, such as oil of thyme, is incorporated. To help the surgeon in following out the tract at the time of operation, the paste is colored a deep blue with a solution of methylene blue.

The moss is first well washed in cold water. It is then placed in a beaker, the water is added, and the whole is placed on the water bath for fifteen minutes. It must be stirred frequently. The resulting mucilage is strained

TABLE 3.—IRISH MOSS PASTE

Irish moss	3 gm.
Glycerin	6 c.c.
Water	100 c.c.

through muslin and the glycerin is added. This mixture is then heated on the water bath until a thick, jelly-like paste is formed. Then the iodids or bromids and the phenol are incorporated as in the starch paste. This paste seems difficult to color.

The water is added to the tragacanth, and the mixture is stirred thoroughly and allowed to stand for twenty-four hours. Then the glycerin is mixed in. It is heated on the

TABLE 4.—TRAGACANTH PASTE

Tragacanth (powdered No. 1).....	5 gm.
Glycerin	8 c.c.
Water	100 c.c.

water bath for about thirty minutes. This is sufficient to make a thick jelly-like paste. Then one proceeds as in the other pastes.

SUMMARY

1. The simple inorganic salts of iodine and bromine are better and less expensive than the complex organic compounds.
2. The starch paste is the most economical, is quickly prepared, and is very serviceable. If carefully prepared, it is free from lumps.
3. The pastes made from tragacanth or Irish moss are more elegant but are more difficult to prepare. The air bubbles found in these are driven off by heat.
3. All of these pastes are nonirritating, are easily injected, and can be removed from the injected area at once by a stream of warm saline solution, if desirable. In the latter respect they possess a decided advantage over oily preparations.
4. They are retained long enough to permit good centgenograms to be made. If the opening of a tract or sinus is plugged with cotton after the paste is injected, the latter can be retained until operation.
5. The pastes can be sterilized in the autoclave before the phenol is added and can then be put into collapsible tubes for future use.

THE TONSIL IN RELATION TO INFECTIOUS PROCESSES *

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Some years ago when I became engaged in the study of focal infections, interest centered largely round joint and various rheumatic lesions, and the tonsil was receiving first consideration as the probable responsible focus and portal of entry. It early became clear that in order to justify many of the charges made against the tonsil, and to solve even some of the numerous problems arising in connection therewith, we were in great need of intensive studies on certain phases of the bacteriology and pathology of these organs. Even more, perhaps, than studies designed to relate infectious lesions in various localities to the tonsil as a focus, we needed fundamental studies on the bacteriology and pathology of these organs in normal persons. I wish here to present briefly certain studies along these lines.

DISTRIBUTION OF LYMPHOID TISSUE

An interesting point appears in connection with the distribution of lymphoid tissue in the throat and gastrointestinal canal in relation to the bacterial flora. It is well known that lymphatic nodes are so distributed as to protect the body against the absorption of dangerous matter from certain well-recognized sources. Indeed, lymphoid tissue occurs, generally speaking, only in those localities where such absorption is occurring. So we have the clusters of glands at the hilum of the lungs, in the mesentery, in the axillary and inguinal regions, etc.

In the alimentary tract from the lips to the rectum there are two localities where striking accumulations of lymphoid tissue appear, namely, in the region of the throat, and in the lower small intestine, especially about the ileocecal valve and appendix. The intervening localities, like the stomach, duodenum, etc., have lymphoid tissue, but it is irregularly distributed and far less in quantity. *A priori*, this would indicate excessive absorption of dangerous matter in the localities where lymphoid tissue is abundant, and as a matter of fact this appears to be true; for in the throat and in the region just above and below the ileocecal valve we find normally the greatest number and variety of bacteria. This can readily be shown by making smear and culture preparations at intervals along the alimentary canal. If one should represent the amount of lymphoid tissue along the canal by one curve, and the number of bacteria normally present by another, the two curves would in general parallel each other. Beginning at the mouth, the curves would rise rapidly, attaining a maximum in the pharynx; they would then descend in the region of the esophagus and stomach, only to rise again in the small intestine, gradually approaching another maximum about the ileocecal valve, and then descending somewhat toward the rectum, where many of the bacteria die.

PROTECTIVE MECHANISM OF LYMPHOID TISSUE

In the throat, the palatine tonsils represent the greatest single accumulation of lymphoid tissue, while in the intestine, the agminated follicles of Peyer and the appendix represent the same. The significance of these accumulations appears to be that of a protective mech-

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anism against various products of absorption, bacterial and other.

In these two localities, not only is the normal bacterial flora more highly developed, but here occurs the greatest number of infections: in the throat streptococcus, pneumococcus, meningococcus, staphylococcus infections, the viruses of numerous exanthems and other diseases; in the lower intestine, typhoid, paratyphoid, dysenteries, tuberculosis, appendicitis, etc. In the intervening localities, relatively few infections occur. The pathogenic organisms attack primarily the lymphoid structures or, at any rate, the parts rich in lymphoid tissue. It would appear that in many instances these organisms become adapted to grow in lymphoid tissue—in other words, to attack the very mechanism which the body has apparently designed for protection against bacteria. Striking examples of this are the hemolytic streptococcus infections in the tonsil and typhoid infection of Peyer's patches. Lymphoid tissue thus may not be equally protective against all bacteria. In certain infections this mechanism breaks down entirely, and instead of being protective it furnishes a fertile soil for invasion. It is on account of the prevalence of certain infections in this tissue that it may be of advantage to remove this mechanism, or a part of it, as is done in tonsillectomy and in appendectomy.

SURFACE AREA OF THE TONSILS

Another point of importance in connection with tonsil infections is the surface area involved, since this is one factor in determining absorption of bacteria and their products. The epithelial surface of the tonsils is many times increased on account of the branching crypts penetrating deeply into the organ. We have attempted to measure the total surface, and find that roughly in an average tonsil of 2 by 1.8 by 1 cm., the entire epithelial surface would amount to about 25 sq. cm. This is only an approximation. Tonsils vary markedly in size, as also in the number and size of crypts; in hypertrophied tonsils, the surface would be far greater than this. Furthermore, the surface epithelium is loose and spongy, the round cells penetrating the layers even to the surface, giving rise to the well known epithelial structure of the crypts, interpreted and spoken of as a physiologic wound. While the extent and nature of the surface are important factors in any infectious process, it is not usual for all parts of the tonsils to be involved equally. When making smears and cultures from the individual crypts in a given tonsil, one is struck by the variation in the number and the kinds of bacteria from them. Some swabs may be sterile, others may contain many bacteria; in microscopic sections of diseased tonsils certain parts of the organ, or more often certain crypts, may show marked exudation and change, other parts or crypts revealing little or no significant alterations.

PLASMA CELLS

The distribution of plasma cells in the body is suggestive in connection with infections of lymphoid tissue. Generally speaking, these cells in the body are indicative of chronic inflammation or irritation, and most writers regard them as pathologic cells, at least when found in appreciable numbers. They accumulate in masses about centers of chronic inflammation, and in general are characteristic of granulation tissue. They appear in many low-grade inflammations of the skin and mucous membranes.

The tonsils and crypts become infected at birth or within a few hours thereafter. Even pathogenic organisms very early appear, *Streptococcus pyogenes* having been noted as early as ten hours after birth. The flora of the infant mouth is largely streptococcal.

Using the local accumulation of plasma cells as a possible criterion of the absorption of bacteria or their products, I studied the time of appearance and the distribution of plasma cells in tonsils. About 240 pairs were examined for these cells. As a routine, the methyl green-pyronin stain of Pappenheim was employed. One hundred and eighty pairs had been extirpated from children and adults, and about sixty pairs came from necropsies on subjects of various ages ranging from fetuses to the very aged; seventeen were from infants less than 3 months old.¹

The results briefly were as follows: These cells are not found in tonsils of the fetus or of the new-born. They make their appearance regularly about the second or third week, and are always found thereafter. In children several months old they are constantly found, usually in abundance. They are present throughout life and even to very old age (88 years) regardless of the anatomic condition of the tonsil. In pathologic tonsils, and especially in hypertrophy, they are very numerous. They occur under the epithelium of the crypts along the strands of connective tissue, and clustered about small blood vessels.

In view of the rôle that these cells play in general pathologic processes, and since they occur so regularly in tonsils a short time after the entrance of bacteria, one is led to suggest that their presence here indicates a chronic infection focus where absorption of irritating products is constantly occurring. Aschoff has noted the same facts in connection with the appendix. Along the entire gastro-intestinal canal, too, one observes large numbers of plasma cells under the mucosa and especially in the region of lymphoid follicles. These facts are quite in harmony with the observations made by Adami and others on the more or less constant penetration of the mucosa by organisms and termed "subinfection." No doubt many bacteria are constantly passing through the alimentary wall into the lymphatics and blood stream, there to be disposed of in different ways. To these bacteria and their products after penetrating the epithelium, the plasma cells probably offer the first barrier or line of defense. In the sense, therefore, that the term subinfection has been used in connection with the condition of the so-called normal tonsil, or in the sense in which Aschoff uses the term "chronic inflammation in the appendix," we may regard all tonsils as chronically inflamed a short time after birth. One should, however, interpret rationally such findings in tonsils; and when the terms are used as above they should not necessarily convey the idea of a dangerous or serious pathologic state requiring surgical intervention. Nor should they be interpreted as a focus of infection in the sense in which that term is now commonly used.

BACTERIAL FLORA OF TONSILLAR CRYPTS

The statement is often made that the flora of the tonsils and the crypts is abundant and varied. This does not appear to be true. By no means will any or every germ that enters the tonsil live and develop there. Recently, in our laboratory, Miss Sexsmith tested the viability of a number of organisms in the crypts. After

1. Further details are given by the author in the *Journal of Infectious Diseases* 10: 142, 1912.

careful cultures of a crypt for control purposes had been made, a few drops of a live bacterial suspension were injected into it by means of a curved blunt needle. Daily cultures then were taken of the crypt. *Bacillus prodigiosus* after injection gradually became less numerous, and at the end of the fourth day had completely died out. Injection of *B. pyocyaneus*, a pathogenic chromogen, caused a slight reaction in the throat lasting a day or two. The organisms gradually diminished in number, and by the fifth day had disappeared. *E. coli* will likewise disappear in the course of a few days. It is evident from these data that certain bacteria, even those well adapted to grow in certain parts of the body, will not flourish in the tonsillar crypts. In other words, it is not proper, as has been done, to look on the tonsil crypts as a cluster of culture tubes set in the upper part of the alimentary canal, growing numerous varieties of bacteria and discharging them into the lumen. As we shall see, the flora of the tonsils is a highly specialized one, restricted quite definitely to a few varieties.

From the anatomic structure of the tonsils, one might expect organisms requiring varying degrees of oxygen tension to thrive here. A few years ago I reported some work on the so-called actinomyces-like bodies often found in the crypts.² Since then, further work has confirmed the observations made at that time. These bodies are found in 30 per cent. or more of tonsils, and are composed of three kinds of organisms evidently growing together in symbiosis: fusiform bacilli, spirochetes and streptococci. The fusiform bacilli grow under anaerobic conditions, and in the crypts develop into a cluster of filaments, forming a central stalk about which the fusiform rods are arranged perpendicularly, closely resembling the structure of a test tube brush. Scattered throughout this growth are very large numbers of spirochetes, actively motile. The streptococcus forms in these masses have recently been studied in detail by Pilot and myself. There are hemolytic and nonhemolytic varieties. The hemolytic are aerobic and quite like the varieties that occur commonly in the throat. Many of the nonhemolytic streptococci from these granules are distinctly anaerobic when first cultivated. They exhibit a green halo on blood agar plates, and if the initial cultures are not made anaerobically they will not appear. After a few transplants under aerobic conditions, however, they will adapt themselves to grow equally well in the presence of oxygen. This anaerobic property of the green strains is very definite and is readily discernible in the first series of cultures. According to Holman's classification they belong to *Streptococcus mitis* and *Streptococcus salivarius* varieties. They are not highly virulent for rabbits, being comparable in this respect to the ordinary *Streptococcus viridans* of the buccal mucosa.

Fusiform bacilli.—*B. fusiformis* occurs in the crypts either in the granules as above described, singly or in small, loose, irregular clusters. In either form they are probably found in all tonsils at some time or other. They appear quite like the bacilli occurring about the teeth. I am inclined to the view that the crypts are the normal and usual habitat of these bacilli. From here they readily infect the mouth, especially the teeth, when these are not properly cleansed or are decayed and pyorrheic.

The possible relation of these bacilli to the infections included under the term Vincent's angina is interesting.

A preparation from a Vincent lesion is indistinguishable from one made from a tonsil granule. On the tonsil, Vincent's angina often begins about the mouth of the crypts, and may involve the sides. The question arises whether or not the fusiform bacilli of the tonsil crypts are a common source of the organisms in Vincent's angina, the crypts serving as the primary breeding grounds for them. These bacilli, together with streptococci, are a common cause of brain abscess resulting from bronchiectatic cavities in lungs, where these bacilli find favorable conditions for development. Presumably they pass down to the bronchi from the tonsils or teeth. Brain abscesses have followed tonsillectomy.

Streptococci.—Some years ago when studying the bacteriology of extirpated tonsils from certain cases of chronic infection, I noted a striking difference between the surface flora and the crypt flora of tonsils.³ On the surface the predominant organisms were of the *Streptococcus viridans* type, whereas the predominant organisms in the crypts of the same tonsil were as a rule hemolytic streptococci. The exceptions were few. The difference was so striking that at first I attributed great significance to this point, since the hemolytic varieties are so much more virulent as a rule than the green varieties. Later I found that most tonsils, regardless of the associated condition, contained a similar flora. Hypertrophied tonsils especially, but also others that show no noteworthy pathologic condition, reveal the same distribution of the varieties of streptococci on the surface and in the crypts. Pilot in our laboratory recently also examined 100 tonsils, extirpated chiefly for hypertrophy, though many were normal in size. Hemolytic streptococci were found on the surface in 61 per cent.; they comprised usually less than 10 per cent. of the total number of bacteria. In the same throats from which these tonsils were removed, cultures taken just before extirpation yielded 43 per cent. positives. Crypt cultures yielded 97 per cent. positives, and in almost all the hemolytic variety was greatly predominant. Furthermore, in another series of twenty-four normal persons, cultures from the throat and pharynx yielded hemolytic streptococci in 58 per cent.; in nineteen persons without tonsils, cultures similarly made gave positive results in 15 per cent., and in these persons were found either bad teeth or tonsil remnants.

It appears from these results that the crypts are an almost constant source of hemolytic streptococci, and this location may be considered in a way their normal habitat. We have not been able to find that any other part of the body so constantly harbors them. The throat, as we have known for a long time, is their chief source and habitat in the body, and it would now appear that the crypts of the tonsils usually supply the throat with these organisms. From the throat they may be distributed to various parts of the body by contact and otherwise. Or they may be transferred to other persons through the usual channels by which respiratory diseases are transmitted.

In the isolation of streptococci from crypts of tonsils, certain technical points should be kept in mind. In extirpated tonsils the organ should be cut lengthwise with a sterile, sharp knife; and then with a sterile forceps the crypts may be opened, more incisions being made if necessary, and cultures taken with a platinum

2. Davis, D. J.: J. Infect. Dis. 14: 144, 1914.

3. Davis, D. J.: The Pathology and Bacteriology of the Faucial Tonsils, etc., J. Infect. Dis. 10: 148, 1912.

loop from the depths of several crypts. It is necessary to do this for the reason that one crypt may be practically sterile and an adjacent one may contain many streptococci. This is not the rule, however; hemolytic streptococci when present at all are usually found in all or nearly all the crypts. Cultures of both tonsils should be made, since the organisms may be found on one side and not on the other. In tonsils from fresh postmortems the technic is essentially the same, and one finds the organisms commonly in such material.

In making cultures from tonsils in situ, certain difficulties are encountered. A small elongated loop of heavy wire should be inserted deep into several of the crypts, turned from side to side when in position, then carefully removed without touching other structures, and at once plated on blood agar. The green streptococcal colonies are usually present with the hemolyzers under these conditions, often in large numbers, since they are carried away on the wire from about the mouths of the crypts, where they are found abundantly. Excepting in acute infections of the tonsils, the cheesy or purulentlike material that exudes from the tonsillar crypts on pressure is no more, indeed is less, apt to contain hemolytic streptococci than the empty crypts. Much of the fluid material expressed from tonsils, enlarged or otherwise and commonly called pus, is not purulent when examined microscopically.

In conclusion, this point deserves emphasis: Nearly every one is harboring typical hemolytic streptococci in his tonsils which have not been differentiated from strains that cause serious infections, pneumonias, etc. Presumably such infections may or may not cause arthritis, iritis and other so-called focal infections; but finding them in the tonsil may mean nothing in relation to a possible systemic disease. Should one find abscesses or other definite pathologic lesions in the tonsils, a bacteriologic examination may be of value in determining the cause of an associated condition.

SUMMARY

In order to understand clearly the genesis of certain diseases, it is necessary to study intensively a suspected focus of infection, like the tonsil, in both normal and infected persons.

Lymphoid structures attain two maxima of distribution: one in the throat and another in the region of the ileocecal valve and appendix; these maxima correspond in general to the normal distribution of bacteria in the alimentary canal. At these points also the greatest number of pathogenic micro-organisms attack the body.

Plasma cells appear shortly after birth (therefore after infection) under the mucosa, and their presence probably indicates chronic absorption of infectious and other material.

Certain organisms injected into the crypts of the tonsils disappear in a few days. The flora normally found in the tonsils is a restricted one.

Actinomyces-like granules, composed of fusiform bacilli, streptococci and spirochetes growing together, appear as more or less normal inhabitants of the crypts. Here may be an important source of *B. fusiformis* in certain infections about the mouth caused by this organism.

In the tonsil crypts, *Streptococcus hemolyticus* is almost constantly found. This focus is one source of these organisms in the throat and adjacent structures. This fact must be considered in making throat cultures and in a study of the problem of hemolytic streptococcus carriers.

TWO UNUSUAL CASES OF PYELO-NEPHRITIS

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There is considerable divergence of opinion as to the surgical indication in cases of unilateral pyelonephritis. Recently the pendulum of opinion has swung toward conservation of the diseased kidney, decapsulation and nephrotomy being advocated as the procedures of choice. Some have taken a middle ground and are guided by the bacteriology of the urine obtained from the involved organ by means of the ureteral catheter. They choose nephrotomy for bacillary infections (such as *B. coli* and *B. pyocyaneus*), and reserve nephrectomy for coccus infections (such as staphylococci and streptococci). If it is remembered that in any infection the reaction of the human organism to the invading bacteria has an importance at least equal to that of the type of micro-organism, it follows that no hard and fast rule of this kind is to be relied on.

The decision must be made, rather, on the basis of the patient's clinical condition, on the estimation of his natural powers of resistance, and on the margin of safety. It is apparent from an examination of the pyelonephritic kidney with its diffusely infiltrated parenchyma and miliary foci of suppuration that the operation of decapsulation and nephrotomy cannot effectually remove or drain the infected tissues. The most it can accomplish is relief of tension and engorgement. Here the surgeon places his reliance on the patient's natural powers of resistance to bring about a resolution of the inflammation. The operation does not remove the focus, does not protect against extension and metastasis (the other kidney may become secondarily infected through the blood stream), and moreover exposes the patient to secondary hemorrhage, to recurrence of infection, and frequently to the dangers of a difficult secondary nephrectomy. A decision necessitating the weighing of these factors requires the nicest of clinical judgment. Primary nephrectomy is by far the safer procedure in patients showing evidence of severe septic absorption and of renal insufficiency with nitrogen retention, and in patients whose illness has been of long standing with resulting loss of weight and strength. In these patients, whose margin of safety is small, it is life which must be conserved first, and without delay.

With the object of illustrating these principles, two unusual cases of pyelonephritis are reported.¹

REPORT OF CASES, WITH COMMENT

CASE 1.—History.—A man, aged 53, admitted, July 20, 1919, had experienced some difficulty in starting the urinary stream for two months. Urination had been painful and frequent, especially at night. There was no hematuria. Five days before he had suffered complete retention of urine and had been catheterized every eight hours. For the last two days he had complained of nausea and vertigo, and had vomited once.

Examination.—The patient, admitted at night, was a pasty looking, anemic man with a distended bladder, and a moderately enlarged prostate. A soft catheter was readily passed by the intern: 20 ounces of turbid urine were obtained, and the catheter left in situ. The urine showed a trace of albumin, many leukocytes, a few red cells and granular casts. Blood chemistry showed urea nitrogen, 46.2; incoagulable nitrogen, 96.9; uric acid, 5.5, and creatinin, 1.4. There

1. From the Surgical Service of Dr. Howard Lilienthal, Mount Sinai Hospital, presented before the Section on Genito-Urinary Surgery, New York Academy of Medicine, Dec. 17, 1919.

ere evidences, therefore, of nephritis and azotemia. The systolic blood pressure was 140, and the diastolic, 90. Fundus examination was negative.

Clinical Course.—Twenty-four hours after admission and the insertion of the indwelling catheter, the temperature had risen from 99 to 104 F., and the urine had become bloody so that a phenolsulphonephthalein test could not be made. The next morning, fever persisting, permanent drainage was stopped and catheterization at intervals was substituted. The patient continued a febrile course (101 to 103 F.) and continued of dysuria and frequency. At each catheterization a residual of several ounces of very purulent, foul urine was obtained. On the fifth day, the temperature was 104.4, and uremic symptoms appeared. The patient rapidly became disoriented, delirious and unmanageable, with involuntary incontinence and defecation, so that special nurses were required. Hot packs, colonic irrigations and diuretics were instituted. Although the output was increased by forcing fluids, the urine showed a great deal of pus, and was not improved by frequent bladder irrigations. The blood chemistry now showed (July 27) urea nitrogen, 56, and incoagulable nitrogen, 117. The phenolsulphonephthalein test showed only 15 per cent. excretion in two hours. Blood count demonstrated leukocytes, 19,000, and polymorphonuclears, 84 per cent. A blood culture was negative.

The cystoscopic examination revealed intense cystitis, marked trabeculation, enlargement of the middle lobe, and very marked enlargement of the lateral prostatic lobes projecting into the posterior urethra. Because of trigonal edema and the prostatic enlargement, ureteral catheters could be passed only for 1 cm. No indigocarmine was seen coming from either ureter during thirty-five minutes' observation. A roentgenographic examination revealed no renal or ureteral lithiasis, but multiple fine concretions were seen in the prostate.

For a few days there was improvement, the temperature coming down to 99; but it rose again to 103, and the uremic symptoms became more marked. There had been slight tenderness in the left costovertebral angle which now became marked, and the lower pole of the left kidney became palpable. August 5, the left ureter was catheterized, purulent urine obtained, culture of which showed *B. pyocyaneus* and *Staphylococcus albus*. The ureteral catheter was left in situ and drained 30 ounces of purulent urine in twenty-four hours. The systemic symptoms progressed, nevertheless; chills and fever appeared, and the azotemia increased, the blood now showing urea nitrogen, 71; incoagulable nitrogen, 176, and creatinin, 5.3, the danger point having been reached.

August 8, cystoscopy demonstrated a clear urine from the right kidney, and I decided to explore the left kidney, as there seemed no doubt that it was the seat of an acute pyelonephritis which was endangering the life of the patient. Under gas and oxygen anesthesia the left kidney was rapidly exposed through the lumbar route. It was found enlarged to half again the normal size, congested, flea-bitten in appearance, and without gross abscess formation. In view of the very evident septic and toxic condition of the patient, a nephrectomy was performed. On sectioning the ureter, I found it bifid. The wound was closed with drainage.

The specimen showed an acute diffuse infiltration of the cortex and pyramids in a kidney with a bifid ureter and double pelvis.

Although loath to do so, I placed a permanent catheter in the bladder to avoid retention and its effects on the remaining kidney. The immediate results were striking. The temperature came down to 101 in forty-eight hours, and to normal on the sixth day. The uremic phenomena disappeared in twenty-four hours; the urinary output rose from 40 to 80 ounces a day, the fluid intake remaining the same.

Two weeks later (August 22), phenolsulphonephthalein test showed first appearance in forty minutes, and 10 per cent. excretion in two hours. Suprapubic cystostomy was performed with procain. Nine days later (August 31), the phenolsulphonephthalein appeared in twenty minutes, and 19 per cent. was excreted in two hours. Blood chemistry showed urea nitrogen, 25; incoagulable nitrogen, 60; uric acid, 1.6, and creatinin, 1.4. With gas oxygen anesthesia suprapubic

prostatectomy was performed, the adenoma with its numerous sandy concretions being readily enucleated. The suprapubic wound healed in three weeks. A phenolsulphonephthalein test, December 6, showed first appearance in ten minutes, and excretion of 42 per cent. in two hours.

The history of this case presents a number of interesting features: 1. The sudden appearance of virulent infection apparently precipitated by the indwelling catheter. 2. The presence of numerous concretions in the prostatic adenoma. 3. The infection of a kidney showing congenital anomaly. I did not allow my curiosity to tempt me to make a pyelogram of the healthy kidney. It may or may not be anomalous, and anomalous kidneys are more prone to infection than normal ones. 4. The picture of uremia produced by the unilateral pyelonephritis and its immediate disappearance after removal of the offending organ. 5. The excellent functional result, the patient now having a better phenolsulphonephthalein excretion than at any previous observation.

CASE 2.—History.—A man, aged 42, who had been ill for two years, stated that his urination had been frequent for many years, at times every half hour, and that it had been accompanied by burning. About two years before he had begun to have gastric symptoms and had lost weight. There had been fulness and nausea after meals and occasional vomiting of food eaten four or five hours previously. A gastro-enterologist made roentgenographic examinations and diagnosed the condition duodenal ulcer (the appendix had been removed seven years before). About a year before he had noticed that the urine was turbid, and he had had fever and chills for a few days. He had had several attacks since. Only twice had there been severe pain, referred to the epigastrium and back, and lasting about twenty-four hours. Since that time urination had been frequent (every one to one and one-half hours), and there had been pain at the tip of the penis. Occasionally there had been a dull ache in the right lumbar region. He had been recently under the care of a urologist who had treated him ten times with some instrument for disease of the verumontanum. While under this therapy he had been having attacks of fever and chills.

Examination.—On examination at my office the patient appeared pale and thin and had apparently lost considerable weight. The urine showed pus. There was definite tenderness in the right hypochondrium, and here a mass was felt, probably the kidney. There was no tenderness in the back. A preliminary diagnosis of right renal calculus with infection was made, and the patient referred to the hospital. He came to the hospital four days later, having been in bed with fever and chills. Here we found the same physical signs.

Cystoscopy detected no obstruction in either ureter. The left side yielded clear urine, and phenolsulphonephthalein injected intravenously appeared in nine minutes; the right side yielded a urine containing clumps of pus cells, and phenolsulphonephthalein appeared in fourteen minutes. Wassermann reaction and blood culture were negative. Bladder urine showed *B. coli*, but ureteral urine yielded no growth. Total phenolsulphonephthalein was 48 per cent. and blood chemistry was normal (urea nitrogen, 16.8; incoagulable nitrogen, 38.8; uric acid, 4.0, and creatinin, 1.4).

Roentgenoscopy of the stomach and duodenum was negative. A roentgenogram of the genito-urinary tract showed no stones in either kidney, but three shadows were seen in the right lower ureteral region. Stereoscopic plates with opaque catheter in place showed these to be extra-ureteral shadows. A pyelogram made with 15 per cent. sodium bromid as the opaque substance showed an enlarged pelvis and calices, but no irregularity in form.

Treatment and Results.—November 6, as fever persisted and as leukocytosis of 20,000 with 90 per cent. polymorphonuclears was present, it was determined to expose the right kidney. Just before operation a catheter was again passed up the right ureter and a specimen of purulent urine obtained for culture.

Under gas and oxygen anesthesia the usual lumbar incision was made, and an enlarged kidney was found high up under the diaphragm. It was readily freed and delivered, and showed under the capsule several minute areas of infiltration. The organ was congested, and softer than normal in consistency. Decapsulation was performed, the kidney split longitudinally, and a soft phosphatic stone (not seen in roentgenograms) removed from the pelvis. The cut surface of the kidney showed a few areas of infiltration in the pyramids, a specimen of which was excised for pathologic examination. Two mattress sutures of catgut were placed, one near each end of the wound to control bleeding, a dressed tube was introduced into the pelvis, two packings were placed in the perirenal space, and the wound was closed in layers. A small tube drain was placed in the muscle layers.

The culture on the right ureteral urine collected just before operation was reported "anhemolytic streptococcus." This was somewhat of a surprise, as the bladder urine had shown *B. coli*. If I had known this finding at the time of operation, I should have been induced to perform a nephrectomy at once. The section removed from the cut kidney surface showed purulent infiltration.

After operation there was little change in the clinical picture, the temperature reaching 103 F. in the afternoons. On the fourth day, the patient became drowsy and apathetic, was almost constantly nauseated, and the next day began to vomit small amounts of yellowish fluid at frequent intervals. Blood chemistry now showed urea nitrogen, 65; incoagulable nitrogen, 98; uric acid, 5.0, and creatinin, 2.4.

In view of the progressing evidences of sepsis and uremia, it was decided to perform a secondary nephrectomy on the seventh day. November 13, under gas and oxygen, the wound was opened and considerable pus found in the muscle layers. The kidney, which was easily freed and delivered, showed several large areas of purulent infiltration and infarction. It was quickly removed, and the wound loosely packed with gauze. The operation was completed in twenty minutes.

There was another chill after operation, and the patient's condition was poor. The vomiting which was present before nephrectomy increased in frequency and amount and was not relieved by lavage or change in position. The vomitus was thin and yellowish brown. The abdomen was distended, but soft throughout. The picture was that of an acute post-operative gastric dilatation; at least, so we thought.

On the second day, the wound was dressed and found dry and clean. A transfusion of 400 c.c. of blood was made by the Unger method. The symptoms continued, however, the temperature rose to 105, and death occurred on the third day after nephrectomy.

Examination of the wound, which was wide open, revealed a small amount of serosanguineous fluid exuding from it. The wound was free of blood and there was no communication between the perinephric space and the peritoneal cavity. When the peritoneum was opened, greenish yellow pus was found among the intestinal coils and especially in the pelvis. The left kidney was normal except for cloudy swelling. The culture of the pus showed anhemolytic streptococci and colon bacilli.

I was present at the examination and saw a layer of fat and granulation tissue between the perinephric space and the peritoneal cavity. In the peritoneal cavity were no omental or other adhesions. Most of the pus was in the pelvic pouch. As there was no evidence of any peritoneal injury, it would appear that the peritonitis was either metastatic or that it had occurred by extension. Of the two possibilities, the metastatic origin appears more likely. I believe that the vomiting which set in on the fourth day after nephrectomy marked the onset of the peritonitis—in other words, the peritonitis was already present when the nephrectomy was performed. My belief is that a primary nephrectomy would have saved this man as it did the first patient.

103 East Eighty-Fourth Street.

Clinical Notes, Suggestions, and New Instruments

TRANSPOSITION OF VISCERA WITH MULTIPLE MALFORMATIONS

W. B. TOY, M.D., AND A. G. ELLIS, M.S., M.D., BANGKOK, SIAM

Transposition of viscera, partial or complete, is an uncommon but not a rare condition. Malformation of organs, especially of the heart and its great vessels, is still more often found. An unusual combination of the two in an infant from the obstetric department of the Siriraj Hospital, Bangkok, appears worthy of record.

REPORT OF CASE

Clinical History.—Nang Nien, a Siamese woman, aged 27, came to the hospital for her third confinement. The personal histories of the patient and her husband were negative. Her two previous labors had been normal. The first child died at 3 years from chronic diarrhea; the second was still living. Physical examination of the woman gave no evidence of disease. The child was in the left occipito-anterior position, and no abnormal symptoms occurred during pregnancy. Labor came on at full term and was quite easy, lasting three hours. The child was of good size, well formed and well nourished, and was apparently normal. Respiration began spontaneously, but cyanosis developed. This condition increased in intensity until death, which occurred five hours after birth, apparently from heart failure.

Postmortem Findings.—The subject was a boy in whom cyanosis, especially of the head and trunk, was pronounced.

Abdomen: The position of the abdominal organs was largely the reverse of normal. The colon occupied the left side. The rectum and sigmoid were distended by meconium, the sigmoid forming a loop that extended to the right of the midline just above the pelvis, but which was chiefly on the left side. The cecum and caput coli were slightly below and to the right of the splenic flexure of the colon; they lay anterior to the other structures, with the appendix projecting downward. The segment of the colon corresponding to the ascending and transverse portions was coiled posterior to the cecum, between the midline and the splenic flexure.

The liver was large, occupying the entire width of the abdomen, the parts on each side of the median line of the body being approximately the same in size and shape. The fissure for the umbilical vein and the quadrate and spigelian lobes were to the left of the midline of the organ; the gallbladder was to the right. Conditions as a whole would not warrant the assertion that the liver was on the left side of the body, although a further suggestive point was that the suprarenal on the left side resembled the right in shape and was adherent to the under surface of the liver.

The stomach was on the right side, where it occupied the same relative position as it normally does on the left.

No trace of a spleen could be found.

Thorax: The thymus gland was a short, thick organ, approximately 5 cm. long, 6 cm. broad, and 1 cm. thick. The left was slightly the larger of the two lobes. The pericardium and heart were on the right side to the same degree that those structures are normally on the left.

The heart appeared of the usual size. The sides were reversed, the inferior and superior cavae emptying into the auricle on the left, the pulmonary veins into the auricle on the right side. One large vessel emerged from the base of the ventricles and continued as the aorta. It had the usual three branches from the arch and a normal right bronchial artery. Through a small incision made into each ventricle near the apex, a probe passed from each cavity into the aorta. Through an opening in the interventricular septum apparently 1 cm. in diameter, the probe could be passed from one ventricle to the other. A pulmonary artery was not present.

The right pleura contained 100 c.c., the left 40 c.c. of serum. A decision as to transposition of the lungs was impossible

because each had four lobes of the same relative size. The lung on the right side was slightly smaller, but the difference might very well have been due to the greater amount of pleural fluid on that side. Both lungs were expanded throughout.

As it was considered desirable to preserve the entire body as a specimen of transposition, the heart was not further opened, and only the liver was removed in order to expose the stomach. No other abnormalities were noted.

Anatomic Diagnosis.—Transposition of viscera; absence of pulmonary artery; patent interventricular septum; four-lobed lung each side; absence of spleen; bilateral hydrothorax; cyanosis.

COMMENT

Of the conditions present in this child, the rarest is absence of the pulmonary artery. As literature on the subject is not available, we report the case without statistics.

PULMONARY ANTHRAX: REPORT OF A CASE

W. R. BROOKSHER, JR., M.D., AND J. A. BRIGGS, BINGHAMTON, N. Y.
Intern, City Hospital, and Pathologist, Kilmer Memorial Laboratory,
Respectively

It is believed that the rarity of true pulmonary anthrax warrants the report of the following case.

REPORT OF CASE

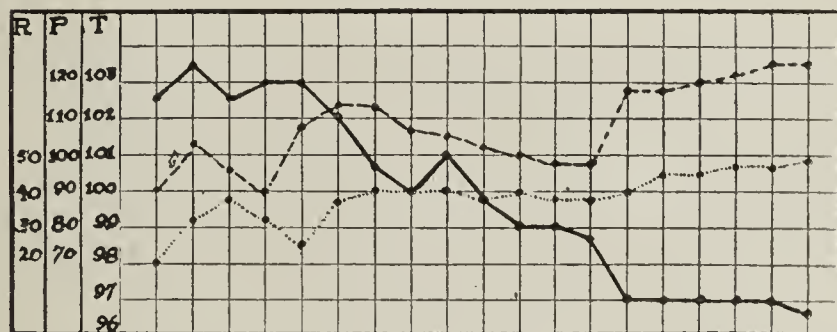
History.—M. P., a Pole, aged 36, a worker in the tannery of a local shoe manufacturing concern, was recommended from the factory dispensary to the service of Dr. D. C. O'Neil, through whose courtesy the case is reported. The tentative diagnosis was bronchopneumonia. A complete history was not obtainable, but the salient feature was that the patient had been suffering for one week previously with a sore throat and a pain across the right chest. It was discovered that the patient had been handling "green" hides in the tannery for some time before the onset of symptoms, but the exact period was not ascertained. There had been no treatment of any sort, and the patient was sent to the hospital from the dispensary immediately after examination.

Physical Examination.—The patient was well developed and well nourished and apparently in good physical condition. The skin was moist and relaxed, with no visible lesions of any kind; a moderate cyanosis was observed in the buccal mucous membrane and at the finger tips; there was no irregularity of the pulse rate, the volume and tension being about normal, the sphygmomanometer reading was: systolic, 118; diastolic, 78; the radial arteries were readily compressible and not thickened; respiration was most difficult, and it was this dyspnea which first attracted attention to the possible seriousness of the attack. Ordinary examination of the throat and pharynx revealed no pathologic condition other than a slight congestion of the mucous membrane. Smears were not taken. A thorough examination of the chest presented no evidences of a pneumonitis—there was no dulness, no increase of fremitus, nor any discoverable abnormalities other than numerous coarse, moist râles over the entire surface of both lungs. There was no apparent cardiac involvement, hypertrophy was not evident, and the valvular sounds were clear and distinct. There was no distention or rigidity of the abdomen, and no points of tenderness were found. The extremities were normal. Bowel evacuations had been regular, and there had been no urinary disturbances. Prolonged coughing spells, productive of considerable pinkish, frothy mucus, seemed by their intensity to annoy the patient more than the more evident dyspnea. The diagnosis depended, therefore, more on the notation of the subjective, rather than by elicitation of any objective, signs.

Clinical Course.—On admission, the temperature was 101.3 F., pulse rate 92, and respiration rate 20. General treatment was instituted, embodying heat to the affected side of the chest, a mild mercurous chlorid series followed by oleum ricini, with the administration every four hours of 2 grains of caffein sodiobenzoate and 10 grains of potassium citrate.

During the night it was noted that the patient perspired freely with a rise of the temperature to 103.2, the pulse and respiration rate being 102 and 32, respectively. On the following day the patient appeared fairly comfortable except for some slight nausea with emesis in the early afternoon. In the evening, the cyanosis and dyspnea were noticeably greater, and on account of the fact that anthrax bacilli had been detected in the sputum, the patient was transferred to an isolation ward and 50 c.c. of antianthrax serum were given intravenously, supplemented by hypodermic injections of $\frac{1}{100}$ grain of atropin sulphate with 10 minims of epinephrin (adrenalin) chlorid (1:1,000 solution) every three hours. The expectoration became more profuse, and gross blood was apparent. The patient slept well during the night, took his nourishment well, and showed no untoward effects of the serum. There was, in fact, an appreciable improvement, respiration became less laborious and the cyanosis was less marked. During the following day, the orthopnea, previously slight, became exaggerated, the respirations were increased to 40 per minute, and the pulse rate rose to 118, while the temperature dropped to a normal level. In the early morning of the fourth day in the hospital, the respirations were even more labored and the pain in the right chest was reported as more severe. Cyanosis increased, the extremities became cold, the temperature reached 97, and the pulse was weak and irregular with a rate of 128. Although vigorous stimulation was resorted to, the patient died; necropsy was refused.

Laboratory Findings.—Routine urinalysis on admission was negative and the blood count revealed 15,000 leukocytes, the increase being principally of polymorphonuclear neutrophils.



Temperature, pulse and respiration ratio (four hour intervals): solid line, temperature; broken line, pulse; dotted line, respiration.

A count made two days later gave 20,200 leukocytes, with the same relative differential. On admission the sputum was typed for pneumonia, and it was then that many large, nonmotile, gram-positive bacilli, morphologically resembling the anthrax bacillus, were discovered. To confirm or deny the suspicion, a blood culture was taken, the culture medium being glucose agar. Colonies were numerous at the end of twenty-four hours and the same bacillus was found in pure culture. A suspension was injected intraperitoneally into a guinea-pig and a rat; the pig succumbing in twenty-four hours and the rat twelve hours later. On necropsy of the animals there was noted the characteristic enlargement of the spleen, with distended capsule and with softened, dark and congested stroma; the liver and kidneys showed the same changes; the lungs were edematous; the peritoneal fluid was slightly blood-tinged; in the pig, hematuria was an additional symptom. From the blood of each animal the organism was recovered in great numbers, and sections of the two spleens showed the organism distributed throughout, surrounded by areas of minute hemorrhages. The forty-eight hour agar culture showed the typical tuft hair appearance of the colonies under the low magnification. In gelatin stab culture, the growth proceeded as in spicules diverging from the uppermost portion of the stab, and after forty-eight hours the gelatin about the top of the stab became liquefied. The growth in broth was evidently rapid, but the bacilli showed a tendency to sink, leaving clear broth at the top. In all smears made from culture mediums, spore formation was readily demonstrated by contrast staining, while the capsule was especially well defined in the smears made from the blood of the infected pig and rat by the Romanowsky blood stain. Hemolysis was noted in the blood

plates. The continuance of sputum typing proved the presence of a pneumococcus of Type IV, although the sputum was contaminated by numerous staphylococci and streptococci. A corroborative second sputum examination and blood culture from specimens taken the morning before death yielded essentially the same results.

CONCLUSIONS

1. Pulmonary anthrax infection can be diagnosed only on positive laboratory findings; sputum examinations and blood cultures are the means employed.

2. Early diagnosis is essential, and it would seem that vigorous treatment by intravenous administration of anti-anthrax serum offers the only hope of recovery.

3. Pulmonary anthrax may appear without the evidences of a violent pneumonia and yet prove fatal as a result of a decided clinical toxemia.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Continued from page 249)

PURGATIVE PILLS

Purgative pills are among the "best sellers" in drug stores. This popularity attests to at least some measure of merit; and it must be admitted that pills are a simple, convenient, inoffensive and economical means for obtaining cathartic action. However, these very advantages also contribute to their great abuse, and cause them to lead all other purgatives as creators of the cathartic habit. Because of this, as well as because exact adjustment of dose by the physician and its gradual reduction by the patient are not as readily accomplished with pills as with other administration forms, prescriptions for purgative pills should not be given to patients unless there are positive indications for them. The triad of the careless routinistic doctor, the ignorantly "counter-prescribing" druggist, and the blatantly advertising proprietary pill promoter is responsible for having made a large number of persons "colonic" cripples — life-long slaves to pills.

INDICATIONS

Purgative pills are convenient for occasionally stimulating bowel evacuation in bed patients. There can hardly be an objection to such employment. But the habitual use of pills is justifiable only when the patient's constipation is hopeless so far as cure is concerned. This condition may exist in the toothless aged, who cannot or will not use artificial dentures, and who, therefore, do not eat enough coarse food to stimulate the bowel to proper function. It also exists in the multiparous woman, who has sacrificed the integrity of her abdominal muscles to her progeny and who, by reason of insufficiency of abdominal pressure, demands an increase in the motor activity of her intestinal musculature, which, unaided, is not equal to the task.

Sedentary habit, on the other hand, is no justification for purgative pill enslavement, unless heart dis-

ease or other physical defect renders a sufficiency of muscular exercise impossible. The attempt to purchase freedom from some of the ills of sluggish habits of life by the habitual use of "liver" pills should be depreciated; other important organs besides the bowel functionate below par in the sedentary person.

When it is a question of the use of the crutch or not walking at all, we choose the crutch as the lesser of the two evils — and so it is with purgative pills. In case chronic use becomes a necessity, pills are superior to all other administration forms of cathartics, chiefly on account of their convenience.

PILL ECONOMY

To minimize as much as possible the use of purgative pills, patients should be directed to use a pill at the end of any day on which they have not had bowel evacuation. The patient will then not take the pills oftener than once every other day; and, not as often, should a spontaneous tendency to bowel movement manifest itself. Thus the patient will have a thorough bowel evacuation at least every other day.

The important thing is to fit the patient as exactly as possible with the agent or agents best suited for him and in the smallest dose required by him. There is no sense in prescribing too mild a pill, and having two or three of these taken for an indefinite time, when one pill of exactly the required strength might as well be prepared. This is one of the chief objections to ready-made pills, even though they be official.

PRINCIPLES OF PILLS CONSTRUCTION

While *curare cito, tuto et jucunde* is our aim, simple prescriptions must be preferred to complex prescriptions, provided they produce as good results. The more complex the remedy, the more unmanageable and liable to unforeseen complications does it become. Nowhere is the principle of simplicity in prescribing more sinned against than in connection with cathartic pills.

The two chief reasons for combination are: mutual reinforcement, and the antagonizing of undesirable side effects. Mutual reinforcement is best obtained by what might be called "*heterotopic synergism*," i. e., the cooperation of agents affecting different functional subdivisions of the organ to be acted on, whereby a result may be obtained with smaller dosage of each of the ingredients than if they were employed uncombined.

FUTILITY OF THE A. S. B. COMBINATION

A good example of an attempt at "rational" combination for both these effects is the "A. S. and B." pills (Pills of Aloin, Strychnin and Belladonna, N. F.).

Nothing may seem more logical than to add to the aloin some strychnin for the purpose of increasing the irritability of the motor neurons on which the aloin is to act; nor might it seem that anything would be more suitable to counteract the reputed tendency of aloes to produce griping than the powerful antispasmodic, belladonna. Unfortunately, by utilizing them in pill form at the same time, they cannot possibly act together, because of the different speed and duration of action of the three agents. Aloin is slow in action, requiring from ten to twelve hours — that is why it is generally given at bedtime. Strychnin and atropin, on the other hand, are rapidly absorbed and rapidly excreted, having but a brief duration of action. No experienced clinician would expect either of these

* This is the sixteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

alkaloids to act for more than four hours. By the time the aloin gets its action in, the alkaloids have long since left the system by excretion into the urine.

To put these theoretical considerations to the experimental test, more than thirty volunteers in a class of medical students were given two pills each to be taken with an interval of about a week. One of these contained aloin; the other, the same dose of aloin and some extract of belladonna in the quantities found in the A. S. and B. pills. Strychnin was omitted, to reduce the experiment to its simplest terms. The pills were called No. 1 and No. 2 pills, and the experimenters did not know which of these contained the belladonna. They were asked to distinguish its presence by difference of action. The majority could not notice any difference whatever; a few thought the belladonna-containing pills were the ones that produced more griping; a few, that the simple aloin pill acted more disagreeably. Clinical use of the official *Pills of Aloes*, containing 0.13 gm. (2 grains) each of aloes and of soap, as compared with similarly extensive use of the A. S. and B. pills, did not demonstrate any greater tendency to griping displayed by the one than the other.

Admitting that the number of observations in the experiment just noted is too small for positive deductions—it ought to be repeated over and over again and would be quite as instructive as some of the animal experiments performed by medical students—the results, as they stand, support the theoretical deductions based on the relative time of action of the ingredients. After all, griping is a matter of size of dose, sensitiveness of individual, and condition of enteric contents rather than of name of drug.

It is gratifying, therefore, that the *Compound Laxative Pills* (U. S. P. VIII) similar in composition to the A. S. and B. pill, with the no doubt uncalled-for addition of ipecac, were deleted from the present pharmacopeia. However, these pills as well as the *Compound Pills of Aloin, Strychnin and Belladonna*, N. F., containing some extract of cascara, in addition, are still extensively used.

Rather popular at the present time also are the unofficial "*Cascara Compound Pills*," commonly called "Hinckle's Pills," each containing:

	Grain
Cascara	$\frac{1}{4}$
Aloin	$\frac{1}{4}$
Resin of podophyllum	$\frac{1}{6}$
Extract of belladonna	$\frac{1}{8}$
Strychnin sulphate	$\frac{1}{60}$ – $\frac{1}{120}$
Oleoresin of ginger	$\frac{1}{8}$

One wonders whether they are popular because their formula is not contained in the U. S. P. and N. F.—it has been said facetiously that the best way to destroy the popularity of a preparation is to make it official. Efficiency is, of course, granted to these as well as to all the other aloes pills, no matter what their composition. The question is as to the desirability of such ridiculous polypharmacy.

OBJECTIONS TO COMPOUND CATHARTIC PILLS

The official compound cathartic pills are no less objectionable. The chief objection is that they contain a considerable amount of calomel, and that people may buy them freely in drug stores and use them indefinitely, not knowing that they are poisonous. Every now and then cases of calomel poisoning can be traced to the compound cathartic pills, taken by some misguided layman for the benefit of his "liver." In drug stores the desirable custom existed quite generally of dispensing the *Vegetable Cathartic Pills* of the National Formulary—also known as "Compound Cathartic Pills, Improved"—when people called for

compound cathartic pills without a prescription.¹ The "improvement" consists in the substitution of podophyllum and leptandra for the calomel and gamboge, and in the addition of extract of hyoscyamus and oil of peppermint, so that the "improved" pills boast of ten different ingredients: aloes, extract of colocynth, cardamom seed, resin of scammony, soap, extract of hyoscyamus, resin of jalap, extract of leptandra, resin of podophyllum and oil of peppermint. Eight ingredients are far too many to meet the demands of scientific combination, namely, that each ingredient improve the action in a demonstrable manner. No one, so far as is known, has even attempted to render this demonstration for either of these pills; and while some of the ingredients might conceivably reinforce each other, that which has not been demonstrated has no existence in science. In this demonstration, aloes and each of the other ingredients would have to be compared when given separately and when combined with each other in all possible different variations. This would require, with eight ingredients, more than fifty different sets of experiments, each of which should probably include from fifty to 100 observations. Until such a demonstration proves otherwise, these combinations must be considered utterly unscientific.

(To be continued)

1. These "improved" pills were deleted from the pharmacopeia at its last revision. It is to be regretted that the others did not meet the same fate, for they are even more objectionable.

Treatment of Malaria.—The subcommittee on medical research of the National Malaria Committee consisting of Drs. Charles C. Bass, New Orleans; William Krauss, Memphis, Tenn.; William H. Deaderick, Hot Springs, Ark.; George Dock, St. Louis, and Charles F. Craig, Col., M. C., U. S. Army, presents the following as a standard method of treatment of malaria for the purpose of curing the patient of his infection and recommends its general use by the medical profession. It is believed that this treatment will, in the great majority of cases, prevent relapses in the patients themselves and also prevent transmission of the infection to others. This opinion is based largely on the results of the treatment by this method, under average conditions, in the homes, of a large number of persons infected with malaria. For the acute attack, 10 grains of quinin sulphate by mouth, three times a day, for a period of at least three or four days, to be followed by 10 grains every night before retiring for a period of eight weeks. For infected persons not having acute symptoms at the time, only the eight weeks' treatment is required. The proportionate doses for children are: under 1 year, $\frac{1}{2}$ grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 4 grains; 8, 9 and 10 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains. It is not claimed that this is perfect or even the best treatment in all cases, but it is our belief that it is a good and satisfactory method for practical use to prevent relapse and transmission of the infection to other people. In a circular letter from Senior Surgeon Henry R. Carter, U. S. P. H. S., secretary of the National Malaria Committee to health officers of states in which malaria prevails the belief is expressed by the committee that a general adoption of this method of treatment by the physicians who treat malaria will result in freeing a large number of malaria patients from infection, so that they will neither themselves suffer from relapses (of infections incompletely cured), nor be sources of infection to mosquitoes and thus to other people. This would result in a very great diminution of malaria throughout the country. If this treatment meets with approval, it is suggested that it be brought to the notice of physicians in the malarious sections of the various states and that such other measures be taken as may be feasible for its general adoption.

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SATURDAY, JANUARY 31, 1920

THE DEBATED THEORIES OF SUPRARENAL FUNCTION

In a series of contributions published in recent years from the Laboratory of Physiology in the Harvard Medical School, Cannon and his co-workers have developed certain hypotheses with respect to the functions of the suprarenal glands. They have submitted experimental evidence that the suprarenal medulla is stimulated to secrete by emotional excitement, pain and asphyxia—conditions known to be accompanied by activity on the part of the sympathetic nervous system. In natural existence, Cannon argues, these conditions would commonly be associated with more or less struggle; and the visceral changes, including suprarenal secretion, which were said to accompany the emotional states, would be useful in great muscular effort. Both the sympathetic system and the suprarenal medulla were thus interpreted to play a part in important bodily adjustments.¹ This was quite different from the view that the suprarenal acts to detoxicate harmful products in the body, or the assumption that secreted epinephrin is destined to lend tonus to certain bodily structures. Cannon has designated his view of the association between suprarenal activity and the function of the sympathetic division of the autonomic nervous system in bodily emergencies as the "emergency theory."

Cannon's views have met with criticism from several sources. In this country, Stewart and Rogoff at the Western Reserve University have insisted that there is no increase of suprarenal secretion in the emotional excitement represented by fear, rage and pain, or in asphyxia. In France, Gley and Quinquaud also have denied that a true epinephrinemia exists. Unless it can be demonstrated that there is actually an augmented suprarenal secretion in the conditions postulated, the emergency theory fails.

More recently, Cannon² has subjected the work of his opponents to a severe criticism, besides adding new evidence for the tenability of his earlier contentions.

Heretofore, epinephrin has as a rule been tested for in blood removed from the body. It has been found, however, that when the heart is completely denervated it becomes an organ highly sensitive to epinephrin, and hence can be employed to demonstrate an increment of suprarenal secretion in the circulating blood. The denervation is accomplished by severance of the vagus nerves and removal of the stellate ganglions in experimental animals. By the use of this procedure, which seems to avoid the defects charged to the older more clumsy methods of blood removal and testing, Cannon has duplicated his earlier findings.

For the present, therefore, it would seem that the burden of proof is again thrown on the shoulders of those who deny the tenability of Cannon's emergency hypothesis. The statement made in *THE JOURNAL*³ that suprarenal secretion is not a necessity, at least under ordinary conditions of existence, still seems to be valid. As Cannon remarks, thus far no reliable evidence has been brought out by any investigator that there is any secretion whatever of the suprarenal glands under quiet, peaceful conditions. He does contend, however, that in times of great emotional stress or under circumstances which cause pain or asphyxia, epinephrin is secreted. This has been the foremost item under debate. Epinephrin is regarded as an aid, not a physiologic essential. Excitement, pain or asphyxia are, in natural existence, commonly associated with violent struggle for self-preservation. Under such circumstances, says Cannon further, the operation of the sympathetic division of the autonomic system, together with the aid which epinephrin affords, will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. He concludes that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

AN INTERPRETATION OF THE CREATINURIA OF INFANCY

Normally, the urine of the adult male never contains creatin, although the closely related substance creatinin is a never-failing component of the urine as well as of the blood. Healthy women excrete creatin at times.⁴ Infants and children, on the other hand, exhibit a creatinuria regularly on normal diets and under normal conditions of health. The reason for this peculiarity of metabolism in the adolescent period has never been discovered, although various hypotheses have been advanced in explanation. Thus it has been suggested that creatinuria is associated with acidosis. These two phenomena doubtless are concurrent at times; yet this fact does not demonstrate a causal rela-

1. Cannon, W. B.: *Bodily Changes in Pain, Hunger, Fear and Rage*, New York, 1915.

2. Cannon, W. B.: *Studies on the Conditions of Activity in Endocrine Glands*, V, *The Isolated Heart as an Indicator of Adrenal Secretion Induced by Pain, Asphyxia and Excitement*, *Am. J. Physiol.* **50**: 399 (Dec. 1) 1919.

3. *Is Epinephrin Indispensable to Life?* editorial, *J. A. M. A.* **73**: 192 (July 19) 1919.

4. *Creatin and Creatinin in Blood*, editorial, *J. A. M. A.* **69**: 648 (Aug. 25) 1917; *The Significance of Creatinuria*, *ibid.* **69**: 1008 (Aug. 25) 1917.

tion between them. It would be difficult to imagine that the acid-base equilibrium, on the upset of which a true acidosis in the body depends, should be so continuously disturbed as the normal continued output of urinary creatin in childhood would demand. There is no justification in assuming for the early period of life a continuous depletion of the fixed alkali of the blood, such as the modern definition of acidosis would demand. The carefully conducted investigations of this subject recently undertaken by Gamble and Goldschmidt⁵ at Johns Hopkins University show, furthermore, that variations in the acid-base intake have no effect on the creatinuria of infants. We conclude with these investigators, therefore, that there is today no satisfactory evidence that acidosis per se is a factor in the production of creatinuria.

When creatin is fed to adult man it may not reappear in the urine unless the amount introduced is a considerable one. Ingested creatinin is excreted again almost quantitatively; at any rate, it can be recovered or accounted for to a far greater extent than can ingested creatin. It may be, therefore, that the adult can utilize or assimilate creatin, although this is not true of creatinin. In the infant or adolescent child, however, the fate of ingested creatin seems to be better established. According to the latest evidence,⁵ small amounts even of ingested creatin lead to an increase of the creatinuria of infants. When a diet rich in protein is given, the elimination of the ingested creatin may be practically complete. This fact has an important bearing on another hypothesis regarding the genesis of creatinuria which relates the phenomenon to the size of the protein intake. It has been observed that wide differences exist in the output of creatin by infants when the excretion on high and low protein diets is compared. Thus, Denis and Kramer⁶ of the Massachusetts General Hospital have asserted that the amount of creatin found in the urine of children is directly dependent on the intake of protein, being high when large quantities of protein (creatin-free) are ingested, and decreasing and in some cases disappearing entirely when the child is fed a diet of an extremely low protein content.

Gamble and Goldschmidt⁷ have called attention to the fact that experiments on high and low protein diets in infancy have usually involved feeding larger or smaller quantities of milk. Until lately the existence of creatin and creatinin in this secretion has generally been overlooked.⁸ The new experiments of Gamble and Goldschmidt indicate that whereas the creatin excretion of infants bears a relation to the quantity of

milk fed, this concerns the nonprotein rather than the protein constituents of the secretion. Pending further investigation of the subject, it seems logical to assume that as milk, the customary staple food of infancy, contains creatin; and as this substance, for some as yet unknown reason, is not destroyed readily in the adolescent organism, the ingestion of creatin is a large factor in the creatinuria of infancy. Whether the dietary intake of creatin is sufficient to account so well for the creatin excreted in the urine in other periods of growth remains to be ascertained by further research.

THE DEATH OF TISSUES AND THE LIFE OF PROTOPLASM

Until a few years ago, it was assumed that the life and development of tissues and their constituent cells are bound up with the body as a whole. Body cells had not been "cultivated" in vitro in the way that has become familiar in the growth of micro-organisms of various sorts. The pioneer experiments of Harrison¹ showed the possibility of cultivating tissues outside of the body by the demonstration that embryonic tissue of the frog, transplanted into coagulable lymph, will develop normally. Subsequently Carrel and Burrows² succeeded in cultivating outside of the body adult tissues of mammals. These possibilities have since been demonstrated repeatedly by various investigators in different parts of the world. Not only normal but also malignant tissues have thus been grown in culture.

At first, before the experimental technic was developed to its present stage of perfection, the life of the tissue cultures outside of the body was brief. It was measured in days or weeks. When Carrel³ announced, in 1912, that fragments of connective tissue had been kept in vitro in a condition of active life for more than two months, the problem of senility and death were put in a new light. Are they preventable occurrences due to the accumulation of waste or the lack of nutrient or some other remediable or avoidable factor? As Carrel remarked in connection with these earlier observations, it is conceivable that the length of life of a tissue outside of the organism could greatly exceed its normal duration in the body, because elemental death might be postponed indefinitely by a proper artificial nutrition.

Colonies of infusoria like bacteria proliferate indefinitely. Woodruff has shown that the protoplasm of paramecia is capable of seemingly endless reproduction, without the sexual device of "renewal of youth" by conjugation. Likewise, the connective tissue cells now appear to have the power of multiplying indefinitely in a culture medium, as do micro-organisms. A strain of

5. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, I, Relation of Creatinuria to Acidosis: The Elimination of Ingested Creatine and Creatinine, *J. Biol. Chem.* **40**: 199 (Nov.) 1919.

6. Denis, W., and Kramer, J. G.: The Influence of Protein Intake on Creatine Excretion in Children, *J. Biol. Chem.* **30**: 189 (June) 1917.

7. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, II, Relation of Protein Intake to Urinary Creatine, *J. Biol. Chem.* **40**: 215 (Nov.) 1919.

8. Denis, W., and Minot, A. S.: The Non-Protein Nitrogenous Constituents of Cow's Milk, *J. Biol. Chem.* **38**: 453 (July) 1919; Non-Protein Nitrogenous Constituents of Human Milk, *ibid.* **39**: 47 (Aug.) 1919.

1. Harrison, R. G.: *Proc. Soc. Exper. Biol. & Med.* **4**: 140, 1907; *Harvey Lectures*, Philadelphia, 1907-1908; *Anat. Record* **2**: 385, 1908; *J. Exper. Zool.* **9**: 787, 1910.

2. Carrel, Alexis, and Burrows, M. T.: Cultivation of Tissues in Vitro and Its Technic, *J. Exper. Med.* **13**: 387, 1911.

3. Carrel, Alexis: On the Permanent Life of Tissues Outside of the Organism, *J. Exper. Med.* **15**: 516, 1912.

connective tissue cells first cultivated by Carrel in 1912 at the Rockefeller Institute of Medical Research, New York, is still very active after more than seven years of life outside the body in vitro.⁴ Its rate of activity has not decreased during this period, despite more than a thousand transplantations that fragments of it have undergone. Such facts place the regenerative capacities of protoplasm in a new light; they likewise lend further interest to the broader problems of tissue culture and conservation, and bring us measurably nearer to the possibilities of controlling or modifying tissue growth by understanding its laws.

Current Comment

"INFLUENZA"

Presumably, the recent recrudescence of influenza in several of our larger cities, including Chicago, Baltimore and New York, has had something to do with the Congressional action appropriating a half million dollars to control influenza.⁵ The devastation caused by the great epidemic of a year ago, while still fresh in the minds of many, was, nevertheless, already beginning to be forgotten especially by those whose homes were untouched by the disease. Fortunately, there is reason to believe that the present prevailing sickness in most instances does not approach either in extent or in virulence the violent infections of last year's epidemic. The percentage of deaths is considerably lower and the number of persons affected probably far below the number affected at that time. Further, the distinction between the serious condition occurring during the last epidemic and milder infections, such as common colds, grip, tonsillitis, sinusitis, rhinitis and coryza, is not absolutely clear. During an epidemic it is too easy and convenient to refer to all such conditions as that which the epidemic concerns. As has been repeatedly stated, local flare-ups of such sequelae were common following previous epidemics. Many physicians have written regarding preventive and therapeutic measures, evidently under the impression that some specific methods may have been worked out. It is doubtful whether such measures exist and also whether they will be discovered in time to demonstrate their virtues in connection with the present conditions. This is especially true when we consider that the bacteriology of these infections varies in different parts of the country and that different persons react in different ways to different bacteria. Health authorities, physicians and the public should not, therefore, "view with alarm" the present morbidity. Perhaps when the excitement of the hour has passed and the statistics are collated, they will reveal that the death rate from pneumonia of this year is not much greater than it was in winters previous to the great epidemic. In the presence of illness the physician and patient will do well to rely on the ordinary preventive measures against acute infections, on good hygienic care and time-tried

symptomatic treatment. Particularly important is early rest in bed; moreover, the patient should remain in bed until well after the symptoms have disappeared and the temperature returned to normal.

COMPETITORS IN UNPOPULARITY

The physician is not the only scientific man who is made the sport of the pseudo-scientist or the disappointed layman. The *Scientific American*, under the heading "Our Unpopular Weather Man," draws a pertinent comparison in an editorial that is so good that we quote it in full:

Who, in all history, ever suffered unpopularity more widespread and more undeserved than the weather man? When his prophecies hit the mark, this is taken as a matter of course, and tomorrow will forget today's success. But his occasional failures—especially if rain comes when he had given his sanction to our plans for an outing—such impardonable failures are recorded in indelible writing, with illuminated capitals to impress the event on the memory.

And, strangely enough, in this atmosphere of unforgiving criticism, the charlatan weather prophet still flourishes, and with blatant self-confidence foretells to a congregation of believers the weather for each and every day next year or the year after, or any other year. Old myths, negated anew by each year's experience, seem to have a charmed life, proof against the bullets of obvious fact. The scientific weather man, in modesty, forbears to predict anything but the immediate future—tomorrow, and perhaps the day after. Beyond this lies uncertainty. He hopes, indeed, for a future development of his science when, aided by more complete equipment, he may be able to give at least an approximate indication of more remote events. As yet, however, this is but a pious hope.

But the charlatan is not encumbered with any such impediments of modesty. It is just as easy to foretell the weather a hundred years ahead as a hundred hours or minutes—it is even easier, for there will be none to call you to account if you miss the mark.

In this the popular attitude is much the same as in the matter of medical attention. The doctor's successes are soon forgotten; his inevitable failures—for the foe is in the end invincible—are burnt into the memory. And those who are most vociferous in their criticism of the bona fide physician faithfully plying his science, are commonly the first to turn to the charlatan for aid in the time of trouble. Truly, they receive their reward.

The harm done is perhaps not so very great. The physician goes on his rounds regardless of undeserved fault-finding; and the weather man continues to publish his bulletin day by day, undisturbed by criticism.

Yet our sense of justice impels us to plead: In mercy, good people, be charitable, and remember that the weather man only *foretells*, he does not make the *weather*.

The weather man, like the physician, deals with factors which, while as old as the universe, are still but little understood and are of bewildering complexity. It is because of this complexity that empirics in medicine and in meteorology flourish. But the quack doctor has a vast advantage over the quack weather forecaster. The charlatan weather prophet has about an even break in the chances of guessing right; the medical charlatan has many more chances of getting credit for curing the patient. For in how large a percentage of all ailments, serious and trivial combined, does the patient get well without treatment or even in spite of treatment? In one other respect the science of meteorology has an advantage over the science of medicine: there are not a thousand-and-one meteorological

4. Ebeling, A. H.: A Strain of Connective Tissue Seven Years Old. *J. Exper. Med.* 30: 531, 1919.
5. General News, this issue, p. 334.

cults each based on its own bizarre conceptions of the climatic universe, each with its following of enthusiastic ignoramuses and each convinced that scientific meteorology is a snare and a delusion and a deep-laid scheme on the part of the meteorologists to deprive a free people of their inalienable rights to have whatever kind of weather they want. No, much as we sympathize with the weather man, we still feel that he has a tremendous advantage over the medical man. The cocksureness of ignorance will, of course, command a hearing in meteorology as it does in the realm of medicine. The conservative prognostications of the scientific man never make the appeal that is carried by the blatant assurance of the quack. But science goes on the even tenor of its way and the public, when it has something serious at stake, will continue to rely on the reports of the weather bureau and the ministrations of scientific medicine.

UNIVERSAL MILITARY TRAINING

The Committee on Military Affairs of the United States Senate has recommended for passage the Wadsworth army bill and retained the clauses providing for compulsory universal military training. The vote in the committee was nine to two in favor of the bill, which probably means that the bill will pass the Senate. As amended, the bill provides for training periods of four months for each young man, to be taken between the ages of 18 and 21. Opportunity will be given twice each year, making six periods from which the young man may select. While such a brief training period as four months is by no means sufficient, the bill is to be commended, for, after the value of the training becomes appreciated, its duration will probably be extended.

THYROIDECTOMY IN PREGNANCY

It is well known that women with myxedema seldom become pregnant. As myxedema represents the highest grade of hypothyroidism, and the milder grades are not incompatible with pregnancy, anything that throws light on the effects on pregnancy of the removal of the thyroid is not without clinical interest. Many years ago, Halsted in his classical experimental work on the thyroid gland showed that in dogs from which the gland had been partly removed pregnancy might result in the birth of puppies whose thyroids were from twelve to twenty times larger than normal. No particular attention was attracted by these somewhat startling observations, although one or two later observers working on pathologic conditions of the thyroid experimentally produced have reported conflicting results. The question has recently been restudied by Ukita,¹ who performed thyroidectomy on pregnant rabbits. His two main conclusions are that the removal of the thyroid in the rabbit greatly prolongs the period of gestation, and that it produces definite developmental changes in the young. The period of gestation was in some instances twice the normal. The young resulting from these pregnancies were undersized, showed by pathologic and roentgen-

ray study delayed ossification of the bones, and also showed hypertrophy of the thyroid gland which was associated with the microscopic appearances of a degree of function more active than is normal in the newly born. These observations recall the fact that a relationship between the activity of the thyroid and sexual functions has long been recognized by clinicians. It is well known that enlargement of the gland frequently takes place during menstrual periods, and commonly takes place during pregnancy. The relationship of the thyroid to physical and mental development as exemplified by sporadic and endemic cretinism is also a thoroughly authenticated clinical fact. The experimental observations of Ukita would seem to be particularly suggestive in their bearing on the possible relationships between the milder grades of hypothyroidism and hyperthyroidism in women, and the development of children born of such mothers. They suggest that the function of the thyroid gland may exert some influence on the duration of pregnancy. Is it possible that some cases of delayed birth are due to hypothyroidism in the mother? May premature delivery be associated with the milder grades of hyperthyroidism? Investigations along these lines should prove interesting.

EFFECT OF WAR ON GROWTH OF CHILDREN IN DIFFERENT SOCIAL GROUPS

It is an old adage that "death is no respecter of persons"; perhaps it may be said in analogous sense that war is no respecter of classes. High and low, rich and poor—all social groups have suffered from its ravages, often in unexpected ways. In many respects, war tends to bring humanity nearer to a common level. An interesting illustration has lately been published by the Munich pediatrician Pfaundler¹ regarding the effect of war conditions on the growth of children. During prewar days, in the measurements of adolescents of school age, differences associated with unlike social status of the parents were clearly discernible from the available statistics. Thus, as a rule the children from homes of the professional classes exhibited a noticeably larger body weight and height than those of the same age born of parents in the so-called working classes. The exigencies of the last five years—particularly the shortage of suitable foods—have affected the growth of children of school age in general in the central countries of Europe. For example, at the age of 6 years Munich girls and boys have grown on the average 3 cm. less in height and 1 kg. or more in weight than was the case in the same city before the war. The average decrease in gains is, however, more conspicuous in the children of the professional group than in those from the less well-to-do classes. Six-year old boys of the latter were only 0.2 kg. behind the prewar average for their category, whereas the other group of boys were 1 kg. lighter in weight than were their equals in age in 1914. As Pfaundler interprets this, since the children of the poor are as a rule smaller and lighter than those of the well-to-do, the war has tended to level the classes from a somatic as well as other standpoints.

1. Ukita: *Acta scholae med. univ. imp. Kioto* 3: 281, 1919; abstr. *J. A. M. A.* 74: 213 (Jan. 17) 1920.

1. Pfaundler, M.: *Ueber Körpermasse von münchener Schulkindern während des Krieges*, München. med. Wchnschr., Aug. 1, 1919, No. 31, p. 859.

Association News

THE NEW ORLEANS SESSION

To New Orleans by Boat

Dr. H. W. E. Walther, New Orleans, chairman of the Subcommittee on Transportation of the Local Committee of Arrangements for the New Orleans session, April 26 to 30, desires to assist in the getting up of boat parties to go to New Orleans. He wishes to get into communication with local medical organizations in cities located in the Mississippi River Valley as well as in seaport cities on the Gulf of Mexico and the Atlantic Coast. He offers his services in order that organizations may be effected at different points of parties of sufficient numbers to justify chartering boats for the trip. Whenever such groups can be assembled, efforts will be made to induce steamship companies to arrange for these excursions. Letters to Dr. Walther should be addressed to the Headquarters of the Local Committee on Arrangements, 1216 Maison Blanche Building, New Orleans, La.

From Baltimore to New Orleans

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., is interested in arranging a party to go by boat from Baltimore to New Orleans. The itinerary under consideration contemplates touching at Old Point Comfort, Va., Charleston, S. C., and a twelve-hour stopover in Havana, the boat being scheduled to arrive in New Orleans early on Monday, April 26, in time for the opening meeting of the House of Delegates.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Personal.—Dr. Charles D. Spivak, Denver, left for New York, December 28, to join the other members of the joint distributing committee of the Jewish war sufferers relief work, and expected to sail for Europe, January 2.

Tuberculosis School Incorporated.—A number of physicians of Colorado Springs filed an affidavit, January 1, for the incorporation of the Colorado School of Tuberculosis, the purposes of which are described as follows: "To furnish without pecuniary profit to its members, opportunity for special advanced study in tuberculosis to physicians and others through the medium of regular courses of instruction and institutions, and laboratories and other agencies devoted to investigation, treatment and cure of the disease."

New Officers.—At the annual meeting of the Medical Society of the City of Denver, Dr. Arnold S. Taussig was elected president; Dr. William A. Sedwick, vice president; Minnie C. T. Love, secretary (reelected), and Dr. Franklin P. Gengenbach, treasurer (reelected), all of Denver.—El Paso County Medical Society at its annual meeting in Colorado Springs, December 10, elected Dr. Clarence R. Arnold, president; Dr. George B. Gilbert, vice president; Dr. Claude E. Richmond, secretary, and Dr. Omer R. Gillette, treasurer, all of Colorado Springs.

GEORGIA

New Laboratory for Fort McPherson.—The War Department announced, December 29, that plans and specifications for a new permanent department laboratory building to be erected at Fort McPherson, Atlanta, had been prepared.

Tributes to Service Men.—December 19, the members of the Georgia Medical Society of Chatham County who had served in the army and navy were given a supper at the Hotel DeSoto by the society.—At the annual banquet of the Fulton County Medical Society, January 8, the members of the organization who were in the military service during the war were the guests of honor. Dr. Elmore C. Thrash,

Atlanta, the retiring president, acted as toastmaster, and the president-elect, Dr. Walter B. Emery, Atlanta, delivered the principal address on the subject of loyalty.

New Officers.—At the annual meeting of the Georgia Medical Society of Chatham County, held in Savannah, December 16, Dr. William H. Myers was elected president; Dr. Lawrence Lee, vice president, and Dr. Everett L. Bishop was reelected secretary-treasurer, all of Savannah.—Walker County Medical Society, at its annual meeting held in Lafayette, elected Dr. Robert M. Coulter, president; Dr. James P. McWilliams, vice president, and Dr. John H. Hammond, secretary, all of Lafayette.—At the annual meeting of the Clarke County Medical Club, held in Athens, December 12, Dr. Ralph M. Goss was elected president; Dr. Allen C. Holliday, vice president, and Dr. James C. Holliday, secretary-treasurer, all of Athens.

ILLINOIS

New Officers.—St. Clair County Medical Association at its annual meeting held in East St. Louis, January 8, elected Dr. Henry A. Cables, East St. Louis, president; Dr. Lee D. Applewhite, East St. Louis, vice president; Dr. Charles W. Lillie, East St. Louis, secretary (reelected), and Dr. Adolph E. Hansing, Belleville, treasurer. The association authorized the formation of a branch in Belleville.

Hospital Staff Election.—At the annual meeting of the staff of Passavant Hospital, Jacksonville, January 5, Dr. Henry C. Woltman, Jacksonville, was elected president; Dr. Tully O. Hardesty, Jacksonville, secretary; Drs. Walter L. Frank, Jacksonville, and David W. Reid, Jacksonville, members of the medical board, and Dr. Charles E. Cole, Jacksonville, dean of the training school for nurses.

Chicago

Antisputting Drive.—The city ordinance against spitting on sidewalks took on new life last week on account of the prevalence of influenza. Nearly 500 people were arrested for violation of the ordinance, January 22, alone.

Laboratory Workers Form Union.—There has been formed recently in Chicago a Scientific Laboratory Workers' Union, No. 16,986, American Federation of Labor. This includes fifteen members, physicians, chemists, and bacteriologists of the Bureau of Laboratories of the Chicago Department of Health.

Personal.—Dr. John A. McGill has been elected president, and Dr. William F. Dickson, second vice president of the Illinois St. Andrews Society.—Dr. Margaret R. Otis was struck by a street car, January 20, and seriously injured.—Dr. H. Gideon Wells spoke before the Geographical Society of Chicago, January 23, on "Roumania in War and Peace."

Arrested for Morphin Selling.—John Brady, said to be known to morphin addicts as the "dope king," was arrested, January 24, charged with violation of the Harrison law. According to the policeman, Brady had at that time fifty packages of morphin which he was peddling at \$5.00 each.—The office of Dr. Edmond D. Converse was raided, January 22, and the doctor is said to have been charged with illegally prescribing morphin for drug addicts.

Internists Elect Officers.—At the fifth annual meeting of the Chicago Society of Internal Medicine, held January 26, Dr. Peter Bassoe was elected president and Dr. Clifford H. Grulee, vice president, and Dr. Charles A. Elliott was reelected secretary-treasurer. Dr. Hugh McGuigan discussed "Some Points of Interest in the Action of Chlorine-Containing Anesthetics and Hypnotics;" Dr. Frank Smithies described "Late Cardio-Respiratory Manifestations of Gassing in Returned Soldiers," and Dr. Anton J. Carlson spoke of "The Effects of Mass Starvation as Observed in Central and Eastern Europe, and the Practical Problem Involved in the Victualling of These People."

Influenza and Pneumonia.—The new cases of influenza are now beginning to decrease. During the twenty-four hours ended at 5 p. m., January 26, there were 166 deaths from influenza and pneumonia, and new cases of influenza numbered 616, and the new cases of pneumonia, 367. For three days of last week, there were more than 2,000 new influenza cases a day.—After a conference with the superintendent of the State Bureau of Registration the health commissioner announces that hospitals will be permitted to accept women with grammar school education for nursing courses, and furthermore that the bureau will cooperate in the establishment of a two years' training course for nurses.—In the seventy hospitals of Chicago there are at present

aid to be 831 cases of pneumonia and influenza.—There are 1,454 empty beds in hospitals, this being due mostly to shortage of nurses which has prevented many institutions from working to capacity.

KANSAS

Public Health Laboratory Reopened.—The secretary of the state board of health announces the reopening of the Public Health Laboratory at the School of Medicine, Rosedale, under the direction of Dr. Donald R. Black, Kansas City. At this laboratory free examinations will be made of smears, and the gonococcus infection, and the Wassermann test given.

New Officers.—At the annual meeting of the Central Kansas Medical Society, held in Russell, December 17, Dr. Frederick S. Hawes, Russell, was reelected president, and Dr. Leo V. Turgeon, Wilson, secretary-treasurer. Wilson was elected as the next place of meeting.—Douglas County Medical Society at its annual meeting in Lawrence, January 2, elected Dr. Carl Phillips, Lawrence, president, and reelected Dr. Charles E. Orelup, Lawrence, vice president; Dr. Joshua R. Bechtel, Lawrence, secretary, and Dr. Elijah M. Owen, Lawrence, treasurer.—At the December meeting of the Bourbon Medical Society held in Fort Scott, Dr. Robert Aikman, Fort Scott, was elected president; Dr. Claud F. Young, Fort Scott, vice president; Dr. John C. Lardner, secretary, and Dr. Millard F. Jarrett, Fort Scott, treasurer.

MARYLAND

Personal.—Dr. H. Warren Buckler, Baltimore, has been placed in charge of the division of medical inspection of schools of Baltimore.—Dr. Edwin W. Schultz, Johns Hopkins Medical School, has gone to Leland Stanford Junior University to give a course of instruction in experimental pathology.

New Officers.—At the annual meeting of the Allegany-Garrett County Medical Society at Cumberland, January 12, Dr. George O. Sharrett was elected president; Dr. J. Kile Cowherd, vice president; Dr. Herbert V. V. Deming, secretary, and Dr. F. Garnett Cowherd, treasurer, all of Cumberland.

Influenza Increasing in Baltimore.—According to reports from the health department, influenza is on the increase in Baltimore, there having been eighty-seven new cases reported in the last twenty-four hours (January 24), while there were but thirty-three reported for the previous twenty-four hours. However, the disease is not epidemic in Baltimore and the health department does not see any reason to fear a recurrence of the havoc of 1918.

Smallpox Invasion Feared.—Owing to reports that smallpox is spreading through the lower part of Delaware, Dr. John S. Fulton, Baltimore, secretary of the state board of health, is taking precautions against allowing the disease to get over the boundaries into adjoining counties on the eastern shore of Maryland. These counties are subject to infectious invasion unless the Delaware authorities take a strong stand in the matter of intertravel in cooperation with the Maryland authorities. Dr. Fulton is considering a plan of revaccinating all persons who visit Delaware and return to the state.

Memorial Ward Opened.—The Hospital for the Women of Maryland, January 25, opened the Davis-Whitridge Memorial, a new section in the medical and surgical department, which will be used for women in moderate circumstances. The ward has been installed by the hospital to memorialize the work of Mrs. Andrew H. Whitridge, who has been connected with the hospital for ten years and was vice president of the board and Mrs. Francis A. Davis, who for fourteen years had been treasurer. The ward will contain eight semiprivate rooms and will be located on the third floor of one wing. Nurses' quarters and a chart room are attached to the ward.

United States Army General Hospital No. 2 to Go.—The rapid evacuation of Fort McHenry, both by the transfer of patients to other army hospitals and by their recovery, points to an early closing of the fort as an army hospital. There are 158 patients awaiting the arrival of a government hospital train to take them to General Hospital No. 31 at Carlisle, Pa. Col. Henry Page, commanding officer at the fort, has received orders for his transfer to the command of General Hospital No. 21 at Denver, the transfer to occur February 15. Colonel Page's successor in the command of the fort has not been named. Since December 1, about 1,040 men have been discharged from the hospital.

MISSOURI

Antivaccination League Organized.—An antivaccination league was organized at St. Joseph, January 16, by 100 persons, mostly women. The meeting voted that, despite the order of the health board that all schoolchildren must be vaccinated or must stay out of school thirty days, they would send their children to school and refuse to allow them to be vaccinated under any circumstances.

Venereal Disease Clinic.—A venereal disease clinic was opened at St. Joseph on January 17, in Community Hall, starting with forty-six patients. Several months ago, an effort was made to have the clinic financed by the city and operated by the city board of health, but the city could not find the necessary money. The local Red Cross chapter then gave \$5,000, which insures an equal amount from the Chamberlain-Kahn fund. The clinic is under the management of a committee of seven—three of the Red Cross, the three members of the city board of health and one member of the Buchanan County Medical Society.

St. Louis

New Head of Hospital Staff.—Dr. Hanau W. Loeb has been appointed chief of staff of the Jewish Hospital staff succeeding Dr. Herman Tuholske, resigned. This new position will not interfere with the work of Dr. Loeb as dean of the University of St. Louis Medical College.

Kentucky Visitors.—At the meeting of the St. Louis Medical Society, January 27, Dr. Louis Frank, Louisville, read a paper on "Blood Studies in Connection with Surgery" and Dr. Granville S. Hanes, Louisville, one on "Local Pain and Other Symptoms Associated with the Infection of the Anal Tissue." Prior to the meeting, Drs. Frank and Hanes were guests of honor at a dinner at the University Club.

NEW MEXICO

Communicable Disease.—The health department reports at least 100 cases of smallpox of mild character in Tularosa.—An outbreak of scarlet fever is reported at Ojo Caliente.

Venereal Clinic Opened.—January 5, a free clinic for venereal disease was opened at Santa Fe under the auspices of the state board of health. Similar clinics are to be opened at Deming and Albuquerque.

State Laboratory Opened.—The state laboratory, which is being provided jointly by the state board of health and the University of New Mexico at Albuquerque, was opened, January 15, in charge of a trained technician.

New Officers.—At the annual meeting of the Bernalillo County Medical Society, held in Albuquerque, December 3, the following officers were elected: president, Dr. Cowan C. Meachem, Bernalillo; vice presidents, Drs. John R. Van Atta, Albuquerque, Arno Klein, Albuquerque; secretary-treasurer, Dr. Frank E. Tull, Albuquerque, and corresponding secretary, Dr. George S. McLandress, Albuquerque.

NEW YORK

New York City

Influenza on Liner.—The Spanish liner *P. de Satrustegui* from Barcelona, which reached Quarantine, January 17, had aboard thirty-one patients with influenza among 414 steerage passengers. The patients were all removed to Swinburne Island, and the vessel was fumigated.

New Tuberculosis Association Organized.—The antituberculosis work in New York City has been taken over by a new organization, the New York Tuberculosis Association, Inc., with Dr. James Alexander Miller, president; Mr. Homer Folks, vice president, and Dr. John S. Billings, Jr., director.

New Regulations in Regard to Quarantine Periods.—At a recent meeting of the department of health, the following regulations governing the isolation of persons affected with an infectious disease and amending Section 89 of the Sanitary Code were adopted:

For the purpose of these regulations, the minimum period of quarantine shall be as follows:

- Diphtheria: Twelve days from onset.
- Scarlet Fever: Thirty days after the onset of the first symptoms.
- Cerebrospinal meningitis: Fourteen days from the onset.
- Acute anterior poliomyelitis: Three weeks from the date of onset.
- Typhoid Fever: Until ten days after the patient's temperature reaches normal.

Wood Alcohol Poisoning Reportable.—At a meeting of the board of health, held, December 31, the following amendment

to the Sanitary Code, making wood alcohol poisoning reportable to the health department, were adopted:

It shall be the duty of the manager or managers, superintendent, or person in charge of every hospital, institution, or dispensary in the city of New York to report immediately to the Department of Health the name, age, and address of every occupant or inmate thereof, or person treated therein, affected with wood alcohol or wood naphtha poisoning; and it shall also be the duty of every physician in said city to make immediately a similar report to the Department of Health relative to any person found by such physician to be affected with wood alcohol or wood naphtha poisoning.

Influenza Becomes Epidemic.—The tabulations of the health department, January 23, show that during the preceding twenty-four hours 1,332 new cases of influenza were recorded, and 406 new cases of pneumonia for the same period. Since January 1, when the outbreak officially is reckoned to have begun, there has been a total of 3,096 cases of influenza and 3,336 cases of pneumonia. Comparison with the figures of Oct. 4, 1918, which is taken by the department of health as the day of that epidemic corresponding to January 23 of the present outbreak, shows that while about the same number of new cases were reported on these dates, the number of deaths reported was about twice as large as on the former date. A conference of the directors of the health department bureaus and the sanitary superintendents of the various boroughs was held and all department administrative details of the attack on the epidemic were arranged. The main headquarters of the department of health will remain open twenty-four hours of the day and seven days a week until the epidemic has passed. The board of estimate, on the request of Health Commissioner Copeland, has appropriated \$80,000 of special revenue bonds to the health department as an emergency fund with which to fight the epidemic. The department of health is not recommending the use of vaccines in combatting the epidemic.

OHIO

Service Physicians Banqueted.—The eleven physicians of Knox County who served during the world war were guests of honor at a banquet given by the Knox County Medical Society, January 13, at Mt. Vernon.

New Interest in Health Matters.—Public health affairs at Canton have taken on new life. Sentiment has been created in favor of adequate health protection so that \$29,630 has been allowed by the city council as a budget for the first six months of the year, or \$17,630 more than the last budget allowed. Applications are being received for chief medical officer, two physicians as full-time health officers, one chief nurse, four public health nurses, four food and meat inspectors, one chief of laboratory, one assistant veterinarian and one assistant clerk in the health office.

Personal.—Dr. James H. Lowe, for twelve years health officer of Piqua, has been reelected for a term of two years.—Dr. Guy T. Goodman, Mansfield, for nine years a member of the board of health and city health officer has resigned.—Dr. Ulysses G. Murrell, Wilmington, has been appointed registrar of the state bureau of vital statistics succeeding Dr. John E. Monger, Greenville, resigned.—Dr. Delbert J. Miller, Alliance, sustained a fracture of the jaw, and a number of cuts and bruises of the face and head when his automobile was struck by a train at a grade crossing.

Supervision of Hospitals.—The State Department of Health of Ohio has organized a bureau of hospitals and the bureau is now working out plans for carrying out the provisions of the new law enacted by the state legislature with reference to the supervision of hospitals. The latter are required to make reports to the state, and forms for the report have been prepared. Annual reports covering work done during 1919 will be filed, March 15. Under a resolution adopted by the legislature, the department is also undertaking a general survey of the hospital and dispensary facilities of the state, and these institutions are being registered as the first step in the study.

Organization Under New Health Law.—Columbiana, Warren, Morrow, Geauga, Pike, Auglaize, and Belmont counties are the first in the state to place their new general district health organization in operation. Columbiana county reports a budget of \$10,000; Morrow, of \$6,750; Warren, of \$4,600; Pike, of \$5,500, and Geauga, of \$5,000. Columbiana, Morrow and Pike counties will receive the maximum state subsidy of \$2,000 while the state aid for Warren County will amount to \$1,600 and of Geauga County to \$1,700. Columbiana and Morrow have appropriated \$3,000 each for a health commissioner's salary and will probably be able to obtain

whole-time officers. The other counties have made appropriations which will provide for parttime commissioners.

Protection Against Water-Borne Diseases.—Ohio is said to share with Massachusetts the place at the top of the list of states with sanitary control of public water supplies, with a score of 97 per cent. This protection has been effected by laws providing for state inspection and approval of all water supply projects and for state examination and supervision of supplies in use, allowing for all sources of possible danger. The state department of health shows that all but fifty of the 300 public water supplies of the state are of unquestionable purity; that only about 10 per cent. of the four million people served by public water supplies use water from doubtful or unsafe sources, and that only ten communities, with a population of 100,000, use water definitely classed as unsafe.

PENNSYLVANIA

Mont Alto to Be Enlarged.—The state has purchased several hundred acres of land contiguous to the department of health sanatorium at Mont Alto, and now controls virtually all the properties abutting the institution.

Board Has No Authority to Revoke Licenses.—Under a ruling made by Deputy Attorney General Swoope, January 9, the board of medical education and licensure has no authority to revoke the license of a medical practitioner who has been convicted of an offense while in practice, sentenced to the penitentiary and released on bail pending an appeal. It has no power to revoke either in the case of one convicted of repeated offenses or of one who has escaped conviction through legal technicalities until the appellate courts have passed on the appeal.

New Officers.—Allegheny County Medical Society at its annual meeting in Pittsburgh, January 13, elected Dr. John J. Buchanan, Pittsburgh, president; Drs. George C. Johnston, Pittsburgh, Thomas A. Miller, Bellevue, Robert W. Allison, Wilkinsburg, Gustav F. Berg, Pittsburgh, and Glenn M. Pierce, McKeesport, vice presidents; Dr. William H. Mayer, Knoxville, secretary, and Dr. Elmer E. Wible, Pittsburgh, treasurer.—Erie County Medical Society at its annual meeting, January 6, elected the following officers: Dr. Katharine H. L. Wright, Erie, president; Dr. John A. Darrow, Erie, Dr. Charles C. Kemble, Erie, vice presidents; Dr. James T. Strimple, Erie, secretary, and Dr. James E. Croop, Erie, treasurer.—Dauphin County Medical Society at its annual meeting in Harrisburg, January 6, elected the following officers: president, Dr. Hewitt C. Myers, Steelton; vice presidents, Drs. Richard F. L. Ridgway and John W. MacMullen, Harrisburg, and secretary, Dr. Charles M. Rickert, Millersburg.

Philadelphia

Personal.—Mayor Elect Moore has announced that Dr. Norman H. Taylor will be appointed as assistant director of health under Dr. C. Lincoln Furbush.

Influenza at Navy Yard.—One hundred cases of influenza developed at the League Island Navy Yard between January 21 and 23. There are no malignant symptoms, but every care is being taken to prevent its spreading. Social centers and meeting places at the navy yard have been closed.

Women's College Drive.—The campaign of the Women's Medical College, Pennsylvania, to raise \$250,000 was opened, January 8. It is intended that part of this fund, if raised, will finance a department of preventive medicine. Sixteen thousand one hundred and eighty-seven dollars were pledged on the first day of the drive.

Third Smallpox Outbreak.—Following the discovery of two cases of smallpox in the northwestern section of the city, 1,500 persons within the boundaries of Thirty-First and Huntingdon and Thirty-Second and York streets were vaccinated, January 22. These cases were also traceable to the Georgetown, Del., area for both the man and his wife had paid a visit to Dagesboro, fourteen miles south of Georgetown. Up to January 23, 4,447 persons had been vaccinated following the three outbreaks.

City Prepared to Fight Influenza.—Should the emergency arise and influenza return to this city in epidemic form, the health department is preparing to meet it. The director asks that all cases be reported to the health bureau and laboratory tests are being made of all cases so far reported, that the exact nature of the malady may be determined. Four hundred beds at the Philadelphia General Hospital have been prepared and provisions made for an extra corps of physicians and nurses. The president of the traction

company has been requested to forbid overcrowding of cars and to insure proper ventilation. A bulletin has been issued by Dr. Walter S. Cornell, chief medical inspector of schools, that will reach every child in the public schools.

TENNESSEE

Negro Hospital for Bristol.—Funds are being raised to erect a \$25,000 hospital for colored people at Bristol. It is proposed that the hospital be in charge of local colored physicians and that it be conducted on a cooperative basis.

Personal.—Dr. Robinson Bosworth, St. Paul, Minn., has given his services to Memphis for a few months, working in cooperation with the city health department in a campaign against tuberculosis.—Dr. Rufus P. Sullivan, Cleveland, has been elected physician of Bradley County.—Dr. James B. Cox, Huntington, has been reelected health officer of Carroll County.—Dr. John R. Thompson, Nashville, has been reelected health officer of Davidson County.

Society Meetings.—At the eighth annual meeting of the Tennessee Academy of Science at Nashville, November 28, the following officers were elected: Dr. William F. Glenn of Vanderbilt University, Nashville, president, and Prof. C. F. Gordon of the University of Tennessee, Knoxville, editor.—At the joint meeting of the Nashville Academy of Medicine and Davidson County Medical Society, January 6, Dr. William C. Dixon was elected president; Dr. Samuel M. Bloomstein, vice president, and Dr. John Witherspoon, secretary (reelected).—Childs County Medical Society at its annual meeting in Pulaski, January 2, elected Dr. George D. Butler, Pulaski, president; Dr. William H. Cole, Minor Hill, vice president; Dr. Charles A. Abernathy, Pulaski, secretary, and Dr. George C. Grimes, Pulaski, treasurer.—At the annual meeting of the Mountain City Academy of Medicine and Surgery (colored), Chattanooga, the following officers were elected: president, Dr. Clarence F. Bass; vice president, Dr. Lewellen L. Patton; secretary, W. B. Davis, and treasurer, R. W. Allen.

TEXAS

Venereal Disease Clinic Discontinued.—The venereal disease clinics at Dallas and Galveston were closed, January 1, on account of lack of funds.

Personal.—Dr. Azariah W. Parsons, formerly chief surgeon of the Mexico national railroad in the city of Mexico, has located at Corpus Christi.—Dr. William E. Huddleston, who has been taking graduate work in England has returned to Galveston.—Dr. Ethel M. Lyon Heard, Austin, has been appointed physician for women at the state university, Austin.

Hospital Items.—The City Hospital at Yoakum is being erected under the supervision of L. Harrington Company, architects. The cost will be \$60,000.—Construction work is in progress on a new hospital at Taylor which is being built by Drs. Edmund Doak, Eric W. Stromberg and Thomas D. Vaughan, Taylor, and Dr. John H. Vaughan, Liberty Hill.

New Officers.—The Fourth District Medical Society at its annual meeting in Coleman, December 2 and 3, elected Dr. Samuel N. Aston, Coleman, president, and Dr. John M. Nichols, Bangs, secretary-treasurer. Ballinger was selected as the place of meeting for 1920.—North Texas District Medical Association met in Fort Worth, December 9 and 10, and elected Dr. Martin L. Wilbanks, Greenville, president; Dr. Marquis E. Gilmore, Fort Worth, vice president; Dr. David L. Bettison, Dallas, secretary (reelected), and Dr. Sidney J. Wilson, Fort Worth, treasurer. Waxahachie was selected as the next place of meeting.—Physicians of Eastland organized a medical society, January 9, to be known as the Medical Society of the City of Eastland, electing Dr. Herbert B. Tanner, president, and Dr. Edward C. Ferguson, secretary-treasurer.—Dallas County Medical Society at its annual meeting held, December 11, elected Dr. William T. Baker, Dallas, president; Dr. Henry B. Decherd, Dallas, vice president, and Dr. William W. Fowler, secretary-treasurer.

CANADA

Fight Venereal Diseases.—Preliminary organization has been completed for carrying out the campaign against the venereal diseases by the federal provincial boards of health of Canada. Dr. Charles A. Hodgetts, Ottawa, has been appointed chairman of the Ontario organization, and Dr. Robert R. McClenahan, Hamilton, secretary. Drs. John G. Fitzgerald, Toronto; Frederick Etherington, Kingston; Douglas G. Storms, Hamilton; Frederick W. Luney, London, are on the committee.

Guards Up Against Influenza.—The federal department of health reports that there is no information available that influenza is anywhere epidemic in Canada. All the provincial boards of health are on the watch for the disease. Especially is Ontario taking strict precautions against an invasion, and has already opened a register for physicians and nurses who will be prepared to join in any campaign toward controlling the malady.

Hospital News.—The General Hospital and the Western Hospital, Montreal, are going to amalgamate. It is hoped to make the combined hospitals the greatest institution in Canada, and a hospital act is being brought into the Quebec legislature to ensure the success of the scheme. It has been found no longer possible to finance the institutions separately and by the new arrangement financial aid is looked for from the province.—Toronto is going to have a new Reception Hospital. The site has been definitely decided on and is to be the old grounds of Trinity University. Efforts were made to have this hospital located near the General Hospital but without success. It has to be built by the city, but the administration is under control of the province.

GENERAL

Medical Officers for Poland Obtained.—Gen. Robert E. Noble has requested us to announce that the fifty medical officers required for duty for the Red Cross in Poland have been obtained, and that no further applications will be considered.

Addition to Hospital Site.—Senator Spencer of Missouri has introduced a joint resolution permitting the expenditure of \$350,000 for the purchase of 26 acres of land contiguous to the Walter Reed General Hospital, Takoma Park, Washington, D. C.

Anesthesia Research Organization.—The National Anesthesia Research Society has been organized with the avowed purpose of collecting data and of prosecuting original research in the science of anesthesia. The research committee is headed by Dr. F. Hoeffler McMechan, Avon Lake, Ohio.

Sickness Insurance Discussed.—At the twentieth annual meeting of the National Civic Federation held in New York City, January 29 and 30, among the topics for discussion were "Compulsory Sickness Insurance and a Substitute for It." Frederick L. Hoffmann, a member of the committee of foreign inquiry, who has just returned from five months' study of the operation of the British National Health Insurance act, reported his findings.

Bill for Construction of Hospitals for Soldiers.—Senator France of Maryland introduced, January 24, a bill endorsed by the Public Health Service for the appropriation of \$78,000,000 for the construction of hospitals for soldiers who are beneficiaries of war risk insurance. In connection with this legislation Senator France said:

It is imperative that we should have legislation providing hospital facilities for diseased and disabled soldiers in the world war. Up until this time provision made for the treatment of these soldiers has been most inadequate, and many men who should be receiving treatment in hospitals are deprived of proper care because of neglect to provide hospital facilities.

It is estimated that at the present time the government is in need of hospital accommodations in the amount of 7,200 beds for general medical and surgical cases, of 12,400 beds for tuberculous cases and 11,000 beds for nervous and mental cases. The actual facilities of the Public Health Service at the present time are not in excess of 7,200 beds. Members of the American Legion have been making earnest protests because of the failure of the government to provide for proper care of our soldiers in hospitals. Throughout the West in many cities, tuberculous soldiers and those suffering from nervous and mental diseases are unable to secure any accommodation in government hospitals. An identical bill will be introduced in the House of Representatives.

Tariff on Scientific Instruments and Apparatus.—The subcommittee of the Senate Committee on Finance has completed its hearings and will meet, February 2, for final action on a bill placing a tariff on surgical and dental instruments and scientific and laboratory apparatus. The House of Representatives passed the bill fixing the tariff on these articles at 45 and 60 per cent., respectively. No opposition was made to this bill and it is likely that the committee will approve the house bill, which is designed to encourage the manufacture of these articles in the United States and avoid the danger of foreign competition. Representing the government

were Dr. W. F. Hildebrand of the bureau of standards; Lieut.-Col. M. A. Reasoner of the field medical supply depot, and Col. F. F. Russell, Army Medical School, and representing chemical and scientific societies were Mr. H. C. Parmalee and Dr. Charles H. Herty.

Bequests and Donations.—The following bequests and donations have recently been announced:

Pennsylvania Hospital, Philadelphia, \$1,000 and the residue of his estate in equal shares to the Jewish Maternity Hospital, Philadelphia; Jewish Seaside Home, Atlantic City, and National Farm School, Doylestown, by the will of Dr. John Moss, Jr.

Methodist Hospital, Philadelphia, \$1,000 by the will of Louise M. Pepper.

St. Vincent's Orphan Asylum, Tacony, Pa., \$1,000 by the will of Herman Buchborn.

Methodist Episcopal Church of northwestern Iowa as a site for a two-hundred bed hospital, a 280 acre tract at Sioux City, valued at \$100,000, donated by Dr. William Jepson.

Campaign Fund of the Woman's Medical College of Pennsylvania, for the endowment of a scholarship in memory of his mother, Elizabeth Agnes Moore Deaver, a donation of \$5,000 by Dr. Harry C. Deaver, Philadelphia.

Wichita Falls, Texas, for the endowment fund of a new hospital, a donation of \$50,000 by J. A. Kemp.

Medical Department of the University of Pennsylvania, Philadelphia, for the establishment of a chair of gynecology, a bequest of \$50,000 by the estate of Dr. William C. Goodell.

Senate Appropriates Half Million Dollars to Combat Influenza.—The Senate has passed a joint resolution appropriating \$500,000 to be used by the Public Health Service in combating influenza. The resolution directs the Public Health Service to investigate influenza and allied diseases in order to discover their causes and prevent their spread. It requires the allotment of money to universities, colleges and other research institutions for scientific investigation. The Public Health Service is accorded the privilege of making selection of such institutions. A forceful debate occurred in the Senate prior to the adoption of the resolution, Senator King of Utah opposing the resolution and objecting to the "constant encroachments of the Public Health Service organization." He said: "We will soon have the United States furnishing doctors, nurses and hospitals for all the people, with the result of hundreds of millions of dollars being taken annually from the people." The resolution originally provided for an expenditure of \$1,000,000. Senator France in charge of the resolution acquiesced in the amendment, reducing the amount to \$500,000. The resolution now goes to the House of Representatives.

League of Red Cross Societies.—The International Red Cross Committee has issued a call for the first convention of the general council of the League of Red Cross Societies, to be held in Geneva, March 2. The league was founded in Paris, May 5, 1919, by the national societies of the United States, Great Britain, France, Italy and Japan, with which the societies of many other countries have since joined. Control is vested in a general council composed of representatives of all member societies, but in the intervals between the regular meetings this control is exercised by a governing board of fifteen members, of which Henry P. Davison, American Red Cross, has been elected chairman. At a preliminary conference in Cannes, April, 1919, the establishment of a bureau of health with a director, advisory council and permanent staff was recommended. The tentative program includes an intensive campaign against typhus fever, the extension and development of child welfare work, and the encouragement of worldwide adoption of definite programs for establishment of public health laboratories, for compulsory registration of vital statistics, and for the control of tuberculosis, venereal diseases and malaria. The permanent headquarters of the league are at 9 Cour de St. Pierre, Geneva, Switzerland.

Cumming, Surgeon-General, U. S. Public Health Service.—As we go to press the newspapers announce that the President has nominated Dr. Hugh S. Cumming as Surgeon-General of the U. S. Public Health Service to succeed Surgeon-General Rupert Blue, whose second term expired January 13. Born at Hampton, Va., August 17, 1869, Dr. Cumming was graduated M.D. from the University of Virginia in 1893, and from the University College of Medicine, Richmond, in 1894. He was commissioned assistant surgeon May 25, 1894, passed assistant surgeon five years later, attained the rank of surgeon March 15, 1911, of senior surgeon Nov. 8, 1918, and was appointed assistant surgeon-general March 6, 1919. Dr. Cumming's professional interest has been mainly in the field of preventive medicine and quarantine. Prior to the war, he was for some years stationed at the Hygienic Laboratory in Washington, before which time he had seen many years of service as chief quar-

antine officer at San Francisco and other ports. He is a frequent contributor to the literature of sanitary science and has made intensive studies of pollution of watersheds with special reference to the shellfish bearing areas, the results of which are embodied in public health bulletins issued by the government. At present he is on duty at Constantinople in connection with a concerted campaign for the control of typhus fever. During the war Dr. Cumming was detailed for special duty with the Navy Department.

Midwinter Conference on Public Health and Legislation.—The annual Midwinter Conference on Public Health and Legislation will be held Thursday, March 4, 1920, in the South Parlor, Auditorium Hotel, Michigan Avenue and Congress Street, Chicago. The program will be as follows:

- Morning.—
1. Call to Order, 9:30 a. m.
 2. Chairman's Address, Dr. Victor C. Vaughan, Ann Arbor, Mich., chairman, Council on Health and Public Instruction, American Medical Association.
 3. Secretary's Report, Dr. Frederick R. Green, secretary, Council on Health and Public Instruction, American Medical Association.
 4. "Standardization of Public Health Activities," Dr. George E. Vincent, president, Rockefeller Foundation.
 5. "Standardization of State Public Health Organizations," Dr. Charles V. Chapin, commissioner of health, Providence, R. I.
 6. "Standardization of Municipal Health Organization," Dr. Allen McLaughlin, Assistant Surgeon-General, U. S. Public Health Service.
 7. General Discussion, opened by Dr. C. St. Clair Drake, commissioner of health, Springfield, Ill., and Dr. Ennion Williams, commissioner of health, Richmond, Va.
- Afternoon, 2 p. m.—Symposium on "Health Education of the Public."
1. "Health Education in the Public Schools—Thirty Years' Experience in Michigan," Dr. Victor C. Vaughan, Ann Arbor, Mich.
 2. "Health Education and Activities in College and Universities," Dr. John Sundwall, director, Students' Health Service, University of Minnesota, Minneapolis.
 3. "Health Education a Function of Municipal Health Department," Dr. Haven Emerson, New York.
 4. "Health Education a Function of State Health Department," Dr. W. S. Rankin, secretary, state board of health, Raleigh, N. C.
 5. "Health Education a Function of the Federal Government," Dr. Charles V. Bolduan, director, Division of Public Health Education, U. S. Public Health Service.
 6. Discussion opened by Dr. John M. Dodson, Chicago; Prof. W. B. Owen, superintendent, Chicago Normal College.

FOREIGN

American Hospital in Poland.—A new hospital has been opened at Vilna, Northwest Poland, by the American Red Cross.

Congress for History of Medicine.—The Société française d'histoire de la médecine has organized an independent congress for the history of medicine and pharmacy, to be held at Antwerp, Aug. 7 to 12, 1920, at the same time as the Kermesse and the festival of the seventh Olympiad. Among the principal subjects appointed for discussion are medical iconography and epigraphy; medical bibliography, and a chapter from the history of public charities (hospitals, etc.) in every country.

Personal.—Dr. Paul Sabatier, Toulouse, and Pierre Paul Emile Roux, Paris, have been elected honorary members of the British Royal Association.—Dr. Hanz Gertz of the Physiological Laboratory of Karolinska Institut, Stockholm, has been awarded the Jubilee Prize by the Swedish Medical Association for his work on the functions of the labyrinth.—Dr. Harold Pringle, lecturer on histology and assistant in physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, succeeding the late Sir Henry Thompson.

Memorial for the Interns of Paris Hospitals.—In memory of the interns and former interns of the hospitals of Paris who gave their lives for their country, a memorial service was held in turn recently in the Roman, the Protestant and the Jewish places of worship. A monument is to be erected to perpetuate their memory. It will stand near the entrance of the Hotel-Dieu, and bear the names of all the interns and ex-interns who died for France. Subscriptions for the monument are to be sent to M. Arnette, 2, rue Casimir-Delavigne. The Société médicale des hôpitaux started the subscription list with 1,000 francs.

Interallied Graduate Course on Tuberculosis at Paris.—This course of lectures on various phases of the organized fight against tuberculosis has been organized by the Ecole interalliée des hautes études sociales, 10, rue de la Sorbonne. The lectures are held Tuesday afternoons at 5:30. Calmette will speak on tuberculosis in the invaded regions; Rist, on the partisans of compulsory declaration; a member of the lower house, on legislation on tuberculosis; Mlle. Chaptal, on private works, and others on the stand of labor in regard

to declaration, on the work of the Red Cross, the climatic resorts of France, etc.

Semicentennial of the "Correspondenz-Blatt."—With 1920 the important Swiss weekly, the *Correspondenz-Blatt für Schweizer Aerzte*, enters on its fiftieth year. Instead of the previous book page, 7 by 9½ inches, it appears in a new form, the pages about 10 by 13 inches. This change is made, it is stated, principally on account of the advertisers. The name of the weekly is also changed to the *Schweizerische medizinische Wochenschrift*, but the editors, publishers, and the principles of the journal remain the same. It always publishes the reports of the various medical societies in both German and French Switzerland, and the original articles are published indiscriminately in German or French. In its new dress it falls into line with the weeklies of Germany and Austria.

Death of Severin Jolin.—The death of the newly appointed president of the Swedish Medical Association is reported. Prof. Severin Jolin, incumbent of the chair of chemistry and pharmacology at Stockholm and since 1917 at Upsala. He has published numerous works on chemistry and pharmacology and on the newer remedies, and was the representative of Sweden at many international scientific gatherings. To him is ascribed in large part the high standard of the Swedish Pharmacopeia as he has taken an active share in the revision of the different editions. Several years of research on the thyroid, especially on its iodine content, led him to the conclusion, in 1906, that iodine is not an indispensable element in the thyroid, but is merely stored there when there happens to be an excess of iodine in the body.

Deaths in the Profession.—In Italy, Dr. Antonio Riga, aged 87, of Riga's disease fame. He described it in 1881 as pseudomembranous sublingual frenulitis. Riga's disease is now defined in the dictionaries as cachectic aphthae.—Dr. H. Gerber, professor of laryngology at the University of Königsberg.—Dr. V. Mucha, formerly director of the Vienna general hospital, aged 76.—Dr. O. Tunmann, professor of pharmacognosy at the University of Vienna.—Dr. B. Baginsky, privat-docent of ear, nose and throat diseases at the University of Berlin.—Sir Thomas Richard Fraser, M.D., Edinburgh, 1862; F.R.C.P., Edinburgh, 1869; formerly president of the Royal College of Physicians, the Medico-Chirurgical Society, the Royal Medical Society, Edinburgh, and the Association of Physicians of Great Britain and Ireland; president of the England Plague Commission from 1898 to 1900; died at his home in Edinburgh, January 5.

The International Health Resort Congress at Monaco.—Great preparations are being made for the Congress for the Expansion of Climatic, Mineral Springs and Baths, and Sea-Bathing Health Resorts which is to be held at Monaco in April. All the Allied and friendly nations have been invited to participate, and preparations have been under way for this congress since early in 1916. It aims to acquaint the world with what these countries have to offer in the way of health resorts, and an exposition in connection will open April 20 and continue into 1921. The exposition will comprise a section for historical objects of interest in this line, a scientific and therapeutic exposition of the various spas, etc., a section of views and data for tourists, a moving picture section, and an industrial and commercial exhibit. There are in fact to be six separate congresses: (1) hydrology and geology; (2) hygiene and climatology; (3) thalassotherapy; (4) spas, seaside and mountain health resorts; (5) mountain climbing (alpinism); (6) touring.

Honors for American Women Physicians in France.—The *Journal officiel* for Dec. 22, 1919, gives a list of seven American medical women honored by the French government with the Gratitude of France medal. Four are said to have served with the utmost devotion at the Hôpital des dames américaines at Luzancy "where the populace had not had any surgical care during the preceding four years of the war": Dr. Charlotte Fairbanks (from St. Johnsbury, Vt.) "performed more than 500 operations and tended the people with extreme devotion;" Dr. Inez A. Bentley (from Kings Park, N. Y.) "by her incessant efforts maintained the equipment of the medical and surgical wards and served as sub-director of the hospital;" Dr. Mary L. Evans (from Middletown, Conn.) "rendered most devoted services to the people" as bacteriologist, director of the laboratory and pharmacy of the hospital, as also Dr. Mary MacLachlan (from Middletown, Conn.) director of the hospital and dispensary. The official list includes further Dr. Mary E. Lapham (from Highlands, N. C.) of the American Red Cross "for her untiring efforts in organizing and conducting a clinic at

la Rochelle;" and Dr. Jay Manwaring (from Norwich, Conn.) "for the medical services rendered by her for two years to the people of thirty villages in the Château-Thierry region." All the above were silver medals. A bronze medal was awarded further to Dr. Edith (Elizabeth?) Mercelis (of Montclair, N. J.) who "helped to organize and conduct a number of *œuvres* for the benefit of France." The list is reproduced in the first issue of the *Presse médicale* for 1920.

LATIN AMERICA

Influenza in Cuba.—It is reported from Havana that there are over 6,000 cases of influenza in that city.

Dr. Leiva Returns to Bogotá.—Dr. Leiva Pereira has returned to Bogotá after several years of absence. During the war he volunteered his services in French hospitals and has been decorated by the French government. He was also decorated by the American Ambulance which went to France at the beginning of the war, where Dr. Leiva demonstrated and applied an apparatus he had devised for treatment of fracture of the humerus.

Deaths in the Profession.—Our exchanges mention the death, October 22, of Dr. Pedro Maria Ibañez, one of the founders of the Academia Nacional de Medicina of Bogotá, a leader in the progress of science in Columbia, and author of numerous works, including a history of medicine in Colombia.—From Vera Cruz is reported the death of Dr. Esteban Rojo, a Cuban physician who had lived in Mexico for more than thirty years, three of whose sons are physicians.

The Recent Earthquakes in Mexico.—According to a letter just received from a Vera Cruz physician, the recent earthquakes caused untold damage and suffering in that region. The trepidation still continues and hills and mountains keep on falling down or breaking apart. San Miguel, a very high peak not far from the Orizaba volcano, broke apart some three kilometers in its center, giving origin to a new volcano which spurts enormous quantities of boiling water that destroys everything in its path. So far fifteen towns have been destroyed by this water. At Jalapa the victims exceed 10,000 and the wounded are also very numerous. Many oil wells are flowing unchecked, and measures will have to be taken to prevent a conflagration. Physicians were among the first to render assistance throughout the territory affected. The representative of the White Cross at Vera Cruz furnished all the medical supplies he had on hand to treat the emergency cases.

Death of Dr. Liceaga.—Dr. Eduardo Liceaga, one of the most prominent physicians and sanitarians of the western continent, died, January 15, at his home in Mexico City. He was for many years president of the national public health service, and had to his credit the stamping out of yellow fever, practically throughout Mexico. He also established the Pasteur Institute of Mexico City, the Maternity Home and Children's Hospital and was responsible for having brought the sanitary service of that country to a high degree of excellence before the recent disturbances began. In recognition of his many services to the cause of medicine in Mexico, he was appointed honorary president of the Mexican Medical Association on its organization, a few months ago. Dr. Liceaga was well known in this country, having attended many medical and sanitary meetings and participated actively in the various international sanitary conferences held in Washington. He was also a member of the International Sanitary Bureau of Washington since its foundation until his resignation as head of the Mexican Public Health Service. Dr. Liceaga was the author of numerous contributions on sanitary subjects, especially yellow fever.

CANAL ZONE

New Society Officers.—At the one hundred and sixtieth meeting of the Medical Association of the Isthmian Canal Zone held at Ancon, December 19, the following officers were elected: president, Dr. Wallace E. Hubbard; vice president, Dr. Cornelius D. Briscoe, and secretary-treasurer, Dr. Nathan B. Kupfer, all of Ancon.

Civil Service Examination.—The United States Civil Service Commission announces open competitive examinations for physicians in the Panama canal zone service to be held, February 18 and March 17. These positions are open to men and women, with a beginning salary of \$200 a month, increasing to \$300 or more. Applicants must be unmarried, must have had at least one year of graduate hospital experience, and must be between 22 and 31 years of age, unless entitled to preference because of military or naval service.

Government Services

Health Conditions of the Army

The weekly summary of health conditions in the army for the week ending January 16 indicates a higher admission rate and noneffective rate than previously, due to the prevalence of epidemics of mild influenza, complicated in some cases also by pneumonia. The disease was especially prevalent in Camps Grant, Custer, Dodge and Fort Sheridan. Among the American Forces in Germany fewer cases of influenza were reported than for the previous week, while pneumonia and measles showed a slight increase.

Report of Surgeon-General of the Public Health Service

Surgeon-General Blue points out that the United States Public Health Service, through new legislation, has had its work extended to include a division of venereal diseases, a reserve for the Public Health Service and certain activities under the War Risk Insurance Act. The service has outlined an "After the War" program to increase sanitation, to prevent epidemic and other diseases, and to raise the standard of physical health. The program calls for the active cooperation of federal, state and local health authorities, as well as volunteer health agencies. The Division of Scientific Research has made investigations of many diseases, sanitation and sewerage and the pollution of navigable streams and lakes. It has also studied rural sanitation, interested itself in the prevention of the spread of trachoma and, through the hygienic laboratory, controlled the sale of viruses, serums and antitoxins. Special studies have also been devoted to pellagra. Industrial physiology was studied with the assistance of Dr. Frederick S. Lee, who is in the reserve corps, and special educational courses were given by consulting hygienists, C. E. A. Winslow and E. R. Hayhurst. Throughout the report appear the names of well known hygienists and sanitarians whose services have now been made available through the passage of the reserve act. Special sections of the report are devoted to the hygienic laboratory, the domestic quarantine division, extra-cantonment zone sanitation, maritime quarantine, sanitary reports and statistics, also to public health education, marine hospitals, venereal diseases, etc.

Under the heading "Needs of the Service," it is pointed out that most important is the provision of an adequate building for the bureau in Washington. During the past two years the service has experienced the greatest expansion in its history and now occupies space in several widely separated buildings.

He also requests much increased appropriation in order to carry into effect the extensive "After the War" program to provide for additional publicity for public health education.

A pleasing feature of the report is the statement of the names of the personnel of the various divisions, giving credit to those whose united efforts have made the growth of the service and its efficiency possible.

Government to Sell Medicines and Hospital Supplies to Hospitals and Institutions

The director of sales of the War Department has announced that the Surplus Property Division, Office of the Quartermaster General of the Army, will offer for sale quantities of drugs, surgical instruments, surgical dressings, and hospital equipment. The fixed prices will be materially below present market quotations. State and municipal hospitals, free clinics and similar institutions will be entitled to purchase for a period of thirty days, beginning Jan. 29, 1920, and ending Feb. 29, 1920. The materials to be sold were bought by the War Department for use during the war and have been declared surplus because the quantities on hand are in excess of the Army's present requirements. A list of materials, showing the quantities available, location, price and other necessary information may be obtained from any Zone Supply Officer or from the Surplus Property Division, Munitions Building, Washington, D. C. The prices quoted are f.o.b. point of storage. A certified check, cash or liberty bonds, amounting to 10 per cent. of the total purchase must accompany all orders together with shipping instructions when purchase is made by other than state,

county, or municipal institutions. A ninety-day credit will be granted to purchasing agents of state, county, or municipalities when requested and no deposit is required by them. All other purchasers will be required to make payment in full before the materials are delivered.

The sale of narcotics will only be made to the classes of persons who have registered and paid a special tax as required by the Harrison narcotic law. Any hospital, institution, or purchasing agency representing charitable organizations in different cities or counties may purchase the entire quantity of any one or a number of items and may resell, issue or divide any portion with other hospitals or charitable institutions. The government, however, will not permit the resale of any of the articles at prices above those paid to the government except that handling charges may be added.

Orders may be made through the nearest of the following Zone Supply Offices: Army Supply Base, Boston, Mass.; 461 Eighth Avenue, New York; 21st Street and Oregon Avenue, Philadelphia; Coca Cola Building, Baltimore, Md.; Transportation Building, Atlanta, Ga.; Army Building, 15th and Dodge Streets, Omaha, Neb.; Fort Mason, San Francisco, Calif.; 17th and F Streets, Washington, D. C.; Newport News, Va.; Jeffersonville, Ind.; 1819 W. Thirty-Ninth Street, Chicago, Ill.; 2d and Arsenal Streets, St. Louis, Mo.; Audubon Building, New Orleans, La.; San Antonio, Texas; New Cumberland, Pa.; Columbus, Ohio; or to the Surplus Property Division, Munitions Building, Washington, D. C.

Foreign Correspondence

LONDON

Jan. 10, 1920.

Sir William Osler

The great gap in the profession made by the death of Osler is manifest in the pages of tribute in the journals by the leaders of the profession. The finest is by the man he affectionately called his "brother Regius of Cambridge"—a kindred spirit as suggested in the previous notice. Writing in *Nature* (a scientific journal) Sir Thomas Clifford Allbutt speaks of Osler bringing to Oxford, "as gifts from the new world, an openness and simplicity of mind and conversation, a frankness and generosity of temper, a freedom from the frost and weight of custom, and a pioneer's command of affairs, which made him as delightful a fellow worker as he was clear-sighted and effectual. Oxford took him to her heart as her own; there as one of her own he rested. And if Osler had not also to capture Great Britain, as he captured Oxford, it was because Great Britain was already his mistress. Indeed, there was not a school of medicine in the Old World where his presence was not almost as well known and his friendship as precious as in the New. It was characteristic of him that a few days later he obtained leave from Oxford to spend some months in Paris, during which he regularly attended the clinics of the great hospitals at 7:30 a. m., like an ordinary student. Of his contributions to knowledge it is as hard to make a list as it would be for Socrates. They were many, no doubt, but consisted even more in his insemination of other minds, in personal teaching and influence on his disciples. His great textbook had many and almost singular merits. It was always helpful in any quest to turn to it, because, if but in a word or the turn of a sentence one perceived that the latest and best researches, if not presented in detail, were known to the author. Thus the work was not a provider only but also to the wise an indicator. Perhaps his most original and valuable researches were in the field of the diseases of the spleen and blood; but he made eminent contributions also to the study of the infections of the heart, of angina pectoris, of malaria, and of many minor maladies. But, the most modest of men, his conversation was always of the good work of others, silent on his own."

In the *British Medical Journal*, Sir Humphrey Rolleston, president of the Royal Society of Medicine, pays a personal tribute: "Perhaps the most remarkable of his many gifts was that of rapidly making and then permanently retaining friendships. To see him speak to, and place at his ease as naturally his equal, a young man somewhat in awe of a famous leader of his profession, seemed an easy matter in his hands, and no doubt was the outcome of a wonderful sympathy that never failed, and at the same time was never

obtrusive or other than natural in a very human man. This made him the same age as his companion, and indeed, much as he loved old men, he delighted in meeting the young. To a mother in terrible distress for the loss of a son in the war he was the gentlest of comforters. In spite of his bravery he was never the same after his only son was killed. There was no trace of the wall between the generations that the years so often build up, and probably few ever realized how strange this was. His encouraging and stimulating attitude to young men made Oxford a Mecca to which there was a constant flow of pilgrims, especially from Canada and the United States, all certain of welcome. Annoyance, irritability or personal feeling of any kind was impossible to imagine in connection with his sunny temperament; that this was part of his philosophy of life is obvious in his charming address "Aequanimitas," and his attitude to his professional brethren finds expression in another address on "Unity, Peace and Concord." Though a shrewd judge of character, neither his opinion nor the reason for it, if unfavorable, was given unless there was some urgent reason, and then the man's surroundings were blamed or a semi-humorous phrase settled the question without further affecting reputation. His literary style was epigrammatic, with apt illustrations, attractive from its classical flavor, and with the distinction conferred by his easily discernable personal touch. This was the feature of his popular textbook, so remarkable for its up-to-date picture of our science. His output was enormous, and it was a puzzle how with innumerable engagements outside and an open house, very rarely without its complement of visitors, he found time to read and work. To see him examine a case was a lesson in thorough clinical observation and not least because the patient's interest was not forgotten in that of the case."

A pathetic incident is the fact that the Collection of Essays in celebration of Osler's seventieth birthday, presented by friends and pupils on both sides of the Atlantic, arrived at Oxford only two days before his death and were never seen by him. His body, which rested overnight in Christchurch Cathedral, Oxford, close by the monument of Richard Burton, one of the great dead to whom he was devoted, was brought by road to London for cremation. The family desired that the ceremony should be strictly private. Lady Osler, her sister, the late Sir William's brother, and the physicians and nurses were present. The ashes were placed in an urn and taken back to Oxford. They will probably be sent to Canada for burial, but a final decision has not yet been taken.

State Rewards for Medical Discoveries

An important report has been issued by a joint committee of the British Medical Association and of the British Science Guild, which has been considering the question of awards for medical discoveries. The committee defines medical discoveries as being: (1) the ascertainment of new facts or theorems bearing on the human body in health and on the nature, prevention, cure or mitigation of injuries and diseases; (2) the invention of new methods or instruments for the improvement of sanitary, medical and surgical practice, or of scientific and pathologic work. The reasons given for rewarding medical discoveries are the encouragement of medical investigation and the discharge of a moral obligation incurred by the public for its use of private effort. The various possible types of rewards are cited as: titles and honors given by the state, by universities and other public bodies; prizes and medals; patents; promotion and appointments; pecuniary rewards by the state. Concerning the general principle of assessment, the committee hold that, in the interests of the public, all medical discoveries should if possible receive some kind of acknowledgment or recompense. But in view of the variable conditions, nature and effects of particular investigations, it will often be difficult to assess the kind of recompense suitable. In the first place, a distinction should be drawn between compensation and reward. By compensation is meant an act of justice done to reimburse losses; by reward an act of grace in appreciation of services. The following different cases should be considered: A. Discoveries involving pecuniary or other loss either by direct monetary sacrifice or by expenditure of time, or by diminution of professional practice, without corresponding pecuniary gains. An example is that of Jenner, who occupied himself so closely with the investigation of vaccination that he lost most of his medical practice and also a considerable sum in expenses. This was fully acknowledged by Parliament, which granted him \$150,000. B. Discoveries that have increased the professional emolu-

ments of the investigator by enhanced practice or other means. Such are frequently improvements in surgical operations or medical treatment, which leads to increased practice. Another case is that of serums, etc., which may have been protected and put on the market. Here compensation cannot be demanded, and pecuniary rewards are generally unnecessary. On the other hand, honors are often and justly bestowed for such work. C. Discoveries that involve neither gain nor loss to the investigator. This class includes most of the good and sometimes great clinical, pathologic and sanitary discoveries. Here also compensation can scarcely be demanded, and honors are already often given, but pecuniary awards should sometimes be bestowed as an act of grace when the value of a discovery greatly exceeds the emoluments of the investigator. This principle should hold even for men who are directly paid for undertaking the research, especially when such payment is (as usual) small and the discovery great. Special attention is drawn to: (1) men who have refused lucrative posts to complete researches; (2) men who have refused to protect their work for fear of limiting its application, and (3) men who have carried out investigations for governments for little or no payment, on patriotic grounds.

In the public interest, the committee insists on these principles: 1. No medical discovery should be allowed to entail financial loss on him who has made it. 2. Compensation or reward should be assessed as equal to the difference between the emoluments actually received and those which a successful clinician might have received in the same time. Additional reasons for this are that few medical discoveries are patentable, and they seldom give good grounds for promotion or for administrative appointments in the public services. Whether a particular discovery shall receive large or small assessment will depend, in addition, on these considerations: 1. Width of application. For example, the work of many of the older anatomists, physiologists, and parasitologists, of Pasteur and of investigators of immunity, have affected most recent discoveries. Discoveries on widespread diseases, such as the work of Lister, Laveran or Koch, are often more important than those on more limited maladies. 2. Difficulty of the work done. The solution of a difficult problem requires more study and also more time and cost, and therefore deserves more recompense than a chance observation. 3. Immediate practical utility. A strong plea can be made for state remuneration in cases of this kind unless they come under Class B. Curiously, they never receive it, and academic recognition is also often not forthcoming. 4. Scientific importance. Discoveries not of practical utility may become so at any moment and should be included in the scheme if sound and of wide application.

During the last few years, the British government has disbursed an annual grant of about \$300,000, under the Medical Research Committee, for subsidizing investigations authorized by the committee and carried on by workers selected by it. This grant does not remunerate discoveries already made, but proceeds on the principle of payment for prospective benefits. The principle of payment for benefits already received should also be followed, as in other countries. Payment for prospective benefits is good business only when some return is almost certain. Hence subsidizing researches most frequently deal with simple and straightforward questions, admitting of immediate experimental reply. But most of the greatest medical discoveries were built on a much more speculative and uncertain basis by men who neither sought nor received subsidies—such men as Jenner, Sims, Simpson, Lister, Koch, Laveran, Bancroft, Manson, Bruce, Mackenzie. Surely the state should encourage this class of investigation also, because it costs the state nothing in the doing and seems to achieve the greatest results. This can be done only in one way—by payment. There are at present in this country hundreds of physicians and others who have the knowledge, the brains and the opportunity for private independent discovery, without subsidies, but who do not attempt it because medical research work does not pay even when brilliantly successful. They should be brought into the fold of research by the offer of a reward when they succeed.

Fatal Anthrax from Japanese Shaving Brushes

The contraction of anthrax from shaving brushes imported from Japan has been reported before in *THE JOURNAL* (Dec. 13, 1919, p. 1849). The Ministry of Health now announces that several other cases have occurred, two of which have been fatal, and that in a substantial proportion of the cases the infection was from new brushes recently imported from

Japan. The government is taking steps with regard to further importation. The ministry recommends the following process to any person who has any doubt as to a shaving brush, but does not suggest that it is a certain safeguard against infection: Thoroughly wash the hair of the brush with soap and warm water to which a little washing soda has been added, rinse in warm water, and then immerse for one hour in a solution of liquor formaldehydi. The disinfecting solution should be at a temperature slightly above the body heat. After removal the brush should be allowed to dry before use. Care should be taken not to allow the hair to come in contact with the hands.

Research Work at the Zoological Gardens

The prosectorium at the Zoological Gardens, used for research in comparative anatomy, has been reconstituted, and Professor Leiper of the London School of Tropical Medicine has been appointed director. As temporary lieutenant-colonel in the army he worked out the life history of *Bilharzia haematobia*. Since the days of Owen and Huxley the bodies of animals which die in the Zoological Gardens have been used for research in comparative anatomy. A succession of distinguished prosectors and many well known surgeons and zoologists have added to knowledge of the higher vertebrates by work at the gardens. Shortly before the war, the work was extended so as to include routine pathologic investigation into the causes of death.

PARIS

Dec. 24, 1919.

The Example Set by the United States in Matters of Hygiene

Though the war caused great sorrow and brought many afflictions, it has brought also some blessings. It facilitated the exchange of ideas between the allied nations and thus led to a better acquaintanceship and a closer union. This is particularly true with respect to the United States and France. During the progress of the war numbers of Frenchmen were put in a position to appreciate American methods and institutions. In matters of public hygiene, especially, the United States exerted a salutary influence. At the sixth annual meeting of the Société de médecine publique et de génie sanitaire, which was held recently in the Institut Pasteur, Prof. S. M. Gunn, assistant director of the Rockefeller Foundation Commission, reported the results of the hygienic crusade that was undertaken by the commission in the schools of the department of Eure-et-Loire, which followed the plan adopted for the schools of the United States. The success of this campaign has been so encouraging that the commission hopes to be able to put this branch of public health work on a permanent footing in all of France.

Similarly, various plans for reforming hygienic instruction in the medical schools owe their inspiration to the work done in the United States. For example, it is coming to be recognized that hygienic instruction must consist of two distinct stages: first, an elementary course which all students must pursue, and second, an advanced elective course for older students. Dr. Paul Courmont, professor of hygiene at the Lyons Faculty of Medicine, has already introduced these two courses. Dr. Léon Bernard, professor of hygiene at the Paris Faculty of Medicine, thinks that, following the example of the United States, a series of courses in hygiene should be established to prepare specialists in hygienic work. He advocates the following three courses: (1) a course preparing candidates for the special duties of public health officers (director of public health, state [departmental] inspector, marine public health officer); (2) a course preparing candidates for the special duties of medical inspector of schools, and (3) a course preparing for the duties of dispensary physician and director of antituberculosis sanatoriums, to be followed by a term as assistant in such establishments.

The Campaign Against Charlatanism

The Société de médecine publique et de génie sanitaire, in view of the fact that a form of charlatanism that is dangerous to public health is practiced by a number of physicians and by certain pharmacists and industrialists, has given formal expression to the opinions that it entertains in the matter: 1. Certain forms of charlatanism practiced by various doctors of medicine are detrimental to the medical profession, and for that reason it would be well to take up the matter with the Union des Syndicats médicaux. 2. The Société de médecine légale, which has appointed a

committee to study into the various forms of charlatanism in vogue, should be asked to determine just what the legal status is of certain establishments that pompously assume the name of "institutes," and certain anonymous personalities who affirm to be able to cure all diseases within an improbable time limit should also be investigated. 3. The Service de la répression des fraudes should be requested to take more energetic action against vendors of pharmaceutical products and hygienic apparatus when it can be shown that the merchandise in question is sold under false pretenses. 4. It would be well to prohibit the publication, in any journal, of advertisements of any pharmaceutical products other than those approved by a competent commission or council composed in part of members of the Syndicat des pharmaciens et des droguistes.

Ceremonies Held at the University of Paris

The council of the University of Paris has decided to hold special exercises each year in celebration of the reopening of the school. This year it was only natural that the event should take the form of memorial exercises in honor of our dead heroes. The services that the University of Paris rendered during the war were also called to mind. The ceremonies were held in the large amphitheater of the Sorbonne, at the conclusion of which the rector of the university conferred the title of doctor honoris causa on Sir Frederic Pollock, English counsellor at law; Dr. Brachet, professor at the University of Brussels; Vito Volterra, Italian senator, dean of the faculty of science in Rome; M. Nyrop, professor at the university of Copenhagen, and H. G. Greenwich, dean of the school of pharmacy in London. Previously, only one title of doctor honoris causa had been granted by the University of Paris, and was conferred last year at this time on President Wilson, by reason of his having been president of the University of Princeton.

The university has decided to hold special religious services in memory of its faculty members and its students who died for their country.

Action in Memory of the Physicians Who Died for France

At the instance of the Paris Faculty of Medicine, all faculties and schools of medicine, all medical and scientific organizations, and all student associations have decided to solicit subscriptions for a fund to be used in exalting the memory of the 1,600 physicians and medical students who died for their country. In every regional center of school or faculty, and in the principal groups of professional societies committees are to be appointed to take charge of the propaganda and to receive subscriptions.

The amount so subscribed will be used: 1. For the publication of an elaborate work containing the names of the heroes and the citations that have been accorded them; this book will be put on sale and the proceeds will revert to the subscription fund, copies of an edition de luxe being given to those who subscribe forty francs or more. 2. For the erection in Paris (near the Faculté de médecine) of a monument that shall be in keeping with the important services rendered during the war by the medical corps as a whole. An appeal is made to all French physicians, to the physicians of allied countries, to the families of these dead heroes, and to all those who, during the war, became indebted to the physicians for their life and health. Subscriptions may be sent to Dr. Bongrand, trésorier général du Comité, 6, rue Villaret-de-Joyeuse, Paris-XVII.

Marriages

CARL ASHTON BROADBUSH, Lieut., M. C., U. S. Navy, to Miss Virginia Courtney Henshaw of Carolina County, Va., at Washington, January 15.

JOSEPH ANTHONY PESSOLANO, Philadelphia, to Miss Florita Marie de Dominicis of Albany, N. Y., at Philadelphia, November 19.

EDWARD H. MORIARTY, Mt. Clemens, Mich., to Miss Estella Doyle of Chatham, Ont., January 13.

SIDNEY KALLAWAY, Philadelphia, to Miss Ella M. Lee of Shamokin, Pa., December 3.

HENRY MELVIN LEE, to Miss Clara Harris, both of Minneapolis, December 27.

Deaths

John Van Rensselaer Hoff ♂ Colonel M. C., U. S. Army (retired), Washington, D. C.; one of the most distinguished officers of the Medical Corps and leader in the movement by which the medical department became a staff corps; died in Walter Reed Hospital, Washington, D. C., January 14, after a surgical operation for septic gall bladder. Colonel Hoff was born at Mount Morris, N. Y., April 11, 1848; the son of Brevet Colonel Alexander H. Hoff, Medical Department, U. S. Army, and Eliza Van Rensselaer. He was graduated from Albany, N. Y., Medical College, in 1871, and also from the College of Physicians and Surgeons in the City of New York in 1874. In the same year he was appointed First Lieutenant and Assistant Surgeon, U. S. Army, in 1879 he was promoted to Captain, and Assistant Surgeon, and to Major and Surgeon in 1891. He organized the first detachment of the hospital corps in the Army at Fort Reno, I. T., in 1887, and the first company of instruction hospital corps, at Fort Riley, Kan., in 1891. He was also recommended for brevet and medal of honor in the Sioux Campaign in 1890 and 1891. He served through the war with Spain as chief surgeon in Porto Rico, and there organized and was president of the superior board of health and board of charities. He was chief surgeon of the China relief expedition in August, 1900. Colonel Hoff was a member of the faculty of the Army Medical School in 1901 and 1902, serving during the same period as president of the Association of Military Surgeons of the United States. In 1901 he was commissioned Lieutenant-Colonel, and Deputy Surgeon General, and in 1905, Colonel, and Assistant Surgeon General. In the latter year he was detailed as observer with the Russian Army in the Russo-Japanese War; in 1906 he was chief surgeon of the Department of Missouri, in 1907 and 1908 chief surgeon of the Philippines Division, in 1909 chief surgeon of the Department of the Lakes, and from 1910 until his retirement for age in 1912, chief surgeon of the Department of the East, and Eastern Division. Since his retirement, Colonel Hoff has lived in Washington, and for a considerable time was editor of the *Military Surgeon*.

Edward Chauncey Register, Jr., Lieut.-Col., M. C., U. S. Army; Medical College of Virginia, Richmond, 1908; aged 35; died at Tarnapol, Poland, January 3, from typhus fever. He graduated from the Army Medical School in 1911; was commissioned First Lieutenant, M. C., in the same year, promoted to Captain in 1914; to Major, May 15, 1917; and to Lieutenant-Colonel, June 12, 1918. His military service included a tour of duty in the Philippine Islands and China, and he also was a member of the punitive expedition into Mexico. In July, 1919, he was assigned to duty with the American Expeditionary Forces in France, his special work being the repatriation of German prisoners; he went to Poland in December with the American-Polish Relief Commission organized for the purpose of stamping out typhus fever, and in his letters reported a shocking and tragic condition of affairs in that area, with scarcity of fuel, clothing and food.

Frederick James Russell, Thiells, N. Y.; Tufts College Medical School, Boston, 1897; aged 46; a member of the Medical Society of the State of New York; for eight years a member of the staff of the Massachusetts School for Feeble-Minded, Waverly, then for three years superintendent of the Vermont School for Feeble-Minded, Brandon, an institution which he organized, and for the last year superintendent of Letchworth Village, Thiells; was operated on for brain tumor at the Neurological Institute, New York City, October 21, and died, December 21.

Clarence Jephtha Edwards, Abbeville, La.; University of Louisville, Ky., 1883; aged 61; a member of the Louisiana State Medical Association; for several years president of the board of health of Vermilion Parish; once a member of the state senate; for several years coroner of Vermilion Parish, and at the time of his death president of the school board of the parish; for several years editor and proprietor of the Abbeville *Meridional*, died, January 14, from heart disease.

John Robert Bosley ♂ Lieut.-Col., M. C., U. S. Army (retired), New York City; Johns Hopkins University, Baltimore, 1901; aged 43; a graduate of the Army Medical School in 1904; who entered the Army soon after his grad-

uation and was promoted to Captain, April 23, 1908; to Major, July 1, 1916, and to Lieutenant-Colonel, May 15, 1917, and was retired, Dec. 31, 1917, on account of disability in line of duty; died, January 8, from diabetes.

Ernst Fred Tiedemann ♂ St. Louis; Washington University, St. Louis, 1880; aged 58; associate professor of bacteriology in his alma mater; professor of pathology and bacteriology in Beaumont Medical College and Marion-Sims Medical College in 1900 and 1901; pathologist to St. Mary's Infirmary and the Jewish Hospital, and consulting pathologist to the St. Louis Mullanphy Hospital; died, January 15, from an overdose of morphin.

Michael Behrman ♂ Visalia, Ky.; Medical College of Ohio, Cincinnati, 1903; aged 38; a member of the American Academy of Ophthalmology and Oto-Laryngology; formerly secretary of the Covington Board of Health; died in his room in the Palace Hotel, Cincinnati, January 12, from the effects of a gunshot wound of the head, believed to have been self-inflicted while he was despondent on account of illness.

Leon Brayton Harris, Saginaw, Mich.; University of Michigan, Ann Arbor, 1909; aged 33; a member of the Michigan State Medical Society; formerly coroner of Saginaw County; who was commissioned Captain, M. R. C., U. S. Army, and honorably discharged, July 14, 1919; died in the Saginaw General Hospital, January 12, after an operation for appendicitis.

James Rhines ♂ Laurium, Mich.; Michigan College of Medicine and Surgery, Detroit, 1902; aged 42; who was commissioned First Lieut., M. R. C., U. S. Army, and was honorably discharged, Jan. 9, 1919; assistant physician to Mohawk Mining Company, and physician to Ojibwa Mining Company; died in Rochester, Minn., about January 10.

Taylor E. Raines ♂ Concordia, Kan.; Hahnemann Medical College, Chicago, 1891; aged 67; formerly secretary and president of the state board of medical registration and examination, and president of the local board of health; one of the first health officers of Cloud County; died, January 12, from spinal disease.

Henry Josef Kreutzmann, San Francisco; University of Erlangen, Germany, 1880; aged 64; a member of the Medical Society of the State of California; formerly professor of gynecology and obstetrics in the San Francisco Polyclinic; while returning from a hunting trip, January 14, died on the train, from heart disease.

Joshua Restord Weeks, Brooklyn; University of the City of New York, 1877; aged 64; surgeon of the Second Infantry N. C. N. G. in 1877 and 1878; local surgeon of the Houston and Texas Central Railroad from 1892 to 1894; died, January 12, from cerebral hemorrhage.

Milton A. Hengst, Birdsboro, Pa.; Jefferson Medical College, 1878; aged 75; a member of the Medical Society of the State of Pennsylvania, and for ten years president of the board of health of the borough of Birdsboro; died, January 10, from cerebral hemorrhage.

Leonard Charles Mead ♂ Yankton, S. D.; Rush Medical College, 1884; aged 63; for nearly thirty years superintendent of the State Hospital for the Insane, Yankton; a member of the American Medico-Psychological Association; died in that institution, January 10.

Frank Lawrence Cochrane ♂ Brooklyn, N. Y.; College of Physicians and Surgeons in the City of New York, 1900; aged 44; died, January 16, from the effects of a gunshot wound of the brain, self-inflicted, it is believed, while despondent.

Charles L. Wilson, Mansfield, Mo.; Missouri Medical College, St. Louis, 1888; aged 63; for twenty-five years head of the St. John's Hospital Dispensary, St. Louis; died at the home of his sister in Santa Cruz, Calif., January 2, from cerebral hemorrhage.

John Joseph Alderson ♂ Chicago; Northwestern University Medical School, Chicago, 1885; aged 68; once president of the West Side branch of the Chicago Medical Society; vice president of Grace Hospital; died, January 21, from rheumatic endocarditis.

Charles Albert Church ♂ Millbury, Mass.; University of Vermont, Burlington, 1884; aged 60; while driving across the tracks of the New Haven Railroad near Northbridge, Mass., January 13, was struck by a train and almost instantly killed.

George W. Rhoads, Shelbyville, Ill.; Jefferson Medical College, 1866; aged 88; for forty-eight years a druggist of Shelbyville; a veteran of the Civil War; died, January 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SKEEN'S STRICTURE CURE A FRAUD

Postal Authorities Deny the Use of the United States Mails to a Mail-Order Quack

For some years a concern in Cincinnati, which has gone under the names "D. A. Skeen" and "The D. A. Skeen Co." has advertised a mail-order treatment that was "guaranteed"

STRICTURE TREATMENT
Guaranteed

If suffering with Stricture, enlarged prostate, difficulty to retain or pass water, you will get immediate, entire and permanent relief by using

- SKEEN'S PAINLESS REMEDY

NO CUTTING, DILATING OR DRUGGING

Use treatment 60 days. If not fully satisfied, I will return your money without complaint. No chance for you to lose a penny. My booklet, "AN HONEST TALK," with GUARANTEE, sent free—will open your eyes and convince you. Write D. A. SKEEN, Dept. 2, P. O. Box 356, Cincinnati, Ohio

Typical advertisement of the Skeen Stricture Cure.

to cure stricture or enlarged prostate. The overworked fraud-order department of the Post Office finally got around to this piece of quackery and has put it out of business by denying to the concern and its manager the use of the United States mails.

In July, 1919, George B. Poole—who was really the D. A. Skeen Co.—was called on by the federal authorities to show cause why a fraud order should not be issued against his business. When the case first came up for hearing, Poole and his attorney, Alfred G. Allen of Cincinnati, offered evidence in an attempt to defend the concern against the Government's charges. Later, Poole and his counsel, in correspondence with the federal officials, intimated that, rather than have a fraud order issued, the business would be discontinued. As a result, the Government offered to withhold further action, providing Poole would execute and file an affidavit to the effect that the business had been discontinued and would not be resumed any time in the future and that the postmaster at Cincinnati would be directed to treat all mail sent to the D. A. Skeen Co. as "refused." After leading the federal authorities to believe that this disposition of the case was desired, Poole refused to submit such an affidavit. As a result, the Government issued a fraud order against Poole and the D. A. Skeen Co.

The extracts that follow are taken from the memorandum of Judge W. H. Lamar, Solicitor for the Post Office to the Postmaster-General recommending the issuance of a fraud order.

"The scheme in substance is to falsely represent to persons that a certain treatment known as 'Skeen's Painless Remedy,' sold by respondents through the mails for use according to directions, will cure any case of Stricture or Prostate Gland trouble, and all Genito-Urinary diseases and conditions, and other serious troubles which affect persons, regardless of the cause from which the disease or diseased condition arises, their seriousness or the length of their standing; and by means of such representations and promises obtain remittances of money in payment for said

treatment. It appears from the evidence that the business done in pursuance of this scheme was started as early as 1885 by one David A. Skeen, who, according to Mr. Poole's testimony, had the treatment made up under a prescription of one of the 'oldest and best known physicians in the South,' although he could not give the name of this physician, nor was there anything in the records of respondent's business to show that they have had such a prescription. Skeen himself was not a physician and knew nothing of the cure or treatment of diseases, or the effect of drugs on the human system, but depended solely on the remedy prepared from this alleged prescription to cure some of the most serious diseases with which persons can be afflicted. Skeen died in 1914. George Poole, the present manager and principal owner of the business, settled his estate, continued the business and incorporated the same under the name The D. A. Skeen Company. George B. Poole, who is the president of this concern, is 65 years of age. He is not a physician and does not employ or consult a physician in connection with the treatment of persons who deal with him through the mails. He did not consult any competent authority to ascertain whether it was safe and legitimate to treat these various diseases and conditions before continuing the business, but in order to induce the public to take this treatment placed advertisements in a large number of papers which have a general circulation through the mails and employed literature of the most misleading character for the purpose of having persons buy the remedy."

The memorandum then quotes a number of typical advertisements used by Poole in obtaining purchasers for the Skeen "treatment." The stuff was analyzed in the Bureau of Chemistry of the Department of Agriculture and the analysis was submitted to the postal authorities in a report of Dr. Lyman F. Kebler, who has done much valuable work in aiding the Post Office in protecting the public against mail-order medical swindles. Dr. Kebler's report showed that the product was essentially a solution of ferric chlorid dissolved in alcohol and water:

Alcohol	45 per cent.
Solution of ferric chlorid	1.7 per cent.
Iron sulphate .....	.07 per cent.
Flavored with sassafras, etc.	

The memorandum continues:

"The evidence shows that this treatment consisting of one combination of drugs cannot reach and remove the serious diseased conditions which respondent urges can be

To the Medical Profession.

We can assure physicians that "Skeen's Painless Stricture Remedy" is absolutely harmless and can not possibly injure the system in any manner, shape or form. It acts on the unhealthy tissue only, and it does not matter in the least if it enters into the bladder.

When used according to the simple directions, it is soothing to the urethra and leaves an invigorating effect. Some of the most prominent physicians and surgeons of Cincinnati and other cities use our remedy both for themselves and their patients.

TO PHYSICIANS

An Eminent Physician's Endorsement

— of —

SKEEN'S PAINLESS STRICTURE REMEDY

From Dr. W. B. Clark, Indianapolis,
Editor New York Medical Debates, (Extract).

TO properly understand what constitutes

Gonorrhoea.

There are but few who realize the terrible consequences of Gonorrhoea if not thoroughly eradicated from the system. If neglected or treated with "so-called" cures that dry up the disease, it will run into Gleet, Stricture, Rheumatism in the legs and muscles, severe Kidney Diseases, and cause untold misery and death. Our remedy will positively cure you, no matter how severe or long standing your trouble.

Of course, the Skeen concern issued an advertising booklet. Here are miniature reproductions of portions of some of the pages in this booklet. The "Endorsement" of the Skeen "cure" by the "Eminent Physician" of Indianapolis occupied two pages of the booklet. We only have space for the heading.

permanently cured by the use of this remedy. The representations and promises above quoted and others appearing in respondent's advertising literature have been repeatedly shown to be false and fraudulent by the testimony of medical experts skilled in the science of the treatment of diseases and diseased conditions who have frequently been called upon to testify in similar medical mail order cases before the Post Office Department, and such testimony was adduced in this case and is a matter of record herein. This testimony was given by highly experienced and well qualified physicians and is based not only upon their actual experience in the treatment of these diseases, but also upon certain well established physiological, anatomical and therapeutical facts with which they are familiar. The testimony shows that each of the numerous diseases and diseased conditions treated by these respondents with this one remedy may arise from many and varied causes, and in order to successfully treat such diseases and diseased conditions it is necessary first to ascertain the cause or causes thereof, and then

intelligently apply a suitable treatment which will reach and remove such cause or causes, and in order to effect a cure the superinducing cause must be found and treated, that different causes often require different treatment and that no one treatment can or will cure all cases, and might not cure any."

Judge Lamar then quotes the evidence of the witnesses called by the Government in the case and concludes:

"This and other testimony in the case very clearly indicates the falsity of the representations made by these respondents in order to market their treatment. It leaves no doubt as to the inability of the remedy to relieve and cure the various diseases and diseased conditions for which it is recommended. It shows that these conditions in question may arise from various causes each of which may require for its removal different treatment; that none of the drugs which compose the treatment used, either separately or in combination can, unless by chance, reach and remove the principal cause which produces the condition, and hence cannot effect the promised cure. The return of the postmaster at Cincinnati, Ohio, shows that about the time of the issuance of the citation in this case from 15 to 20 pieces of mail were received daily at that office addressed to The D. A. Skeen Company and delivered.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued against The D. A. Skeen Company, and G. B. Poole, Manager, at Box 356, and 22 Opera Place, Cincinnati, Ohio."

The fraud order was issued December 3, 1919.

Correspondence

"HIGH PROTEIN DIETS AND NEPHRITIS"

To the Editor:—In THE JOURNAL, January 10, p. 107, the following editorial statements appear under the above title:

"We may accept these observations . . . without admitting their wider significance in the etiology of human nephritis. . . . It must be remembered that the diets used by Newburgh were potentially acid in character, and certain to produce an acid urine in a species adjusted and accustomed to secrete an alkaline fluid under a free choice of food. Until such experiments are successfully duplicated under conditions in which the normal reaction of the renal secretion is not tremendously altered and the accessory factors in the diet are known to be adequate, the incrimination of the high protein diets in connection with nephritis must be considered with judicial reserve."

The writer of the editorial refuses to admit that the experiments in question bear on the problem of the cause of human nephritis because the renal injury might, in his opinion, have been produced by the acid character of the diets or by the absence of some essential food factor.

Neither of these objections is justified by the facts. Even though the writer of the editorial states that the diets were certain to produce an acid urine, the data show that such was not the case. A careful review of my notes discloses the fact that, without exception, the urines of the rabbits eating both the casein mixture and the soy bean diet were alkaline to litmus.

The second objection offered implies that the nephritis might be an expression of a deficiency disease. Here, again, a "judicial consideration" of the data will show that such a view is untenable. In the case of the casein experiments it will be noted that two groups of animals were used. Each group was fed a diet made up of a mixture of milk, water and carrot, to which casein was added. The first group of rabbits received 15 gm. of casein daily in this way; the second group, 30 gm. The first group failed to develop nephritis. How, then, can the nephritis which was found in the second group be attributed to a lack of something in the diet, when the latter group received everything which the first group did, and in addition, fifteen more grams of casein daily?

When we come to the soy bean experiments we also find sufficient evidence to prove that the nephritis was not caused by the absence of something in the food. The investigators who have made a special study of the vitamin content of foods have compared the growth curve of animals eating foods whose vitamin content was to be tested, with the normal growth curve. On the basis of such studies, a food which permits normal growth is accepted as one whose vitamin content is adequate. In the soy bean experiments, two groups of young animals were used. One group was used as a control; the other group was fed the beans. All other conditions were identical for the two groups. The controls, after living on the stock laboratory diet for seven months, had an average individual weight of 2,415 gm. Their kidneys were normal. The group of young animals eating soy beans averaged 2,179 gm. at the beginning of the experiment. Three months later, their average individual weight was 2,497 gm. Still another group of rabbits eating soy beans weighed 2,382 gm. at the beginning of the experiment and 2,780 gm. three months later. The animals living on soy beans gained weight at more than the normal rate in both instances. Evidently, then, the nephritis produced by the soy beans cannot be attributed to a lack of something in the diet.

L. H. NEWBURGH, M.D., Ann Arbor, Mich.

"THE ACUTE ABDOMEN"

To the Editor:—Anent the controversy of your correspondents (Dr. M. W. Lyon, Jr., THE JOURNAL, Dec. 20, 1919, p. 1897, and Dr. Ramsay Spillman's rejoinder, Jan. 3, 1920, p. 47) will you please allot me some of the valuable space of THE JOURNAL to shed additional light on the moot point, "acute abdomen."

I want to call attention to the fact that William Henry Battle, senior surgeon to St. Thomas Hospital, London, whose name is identified with the incision so extensively employed in operations for appendicitis, delivered an oration before the Medical Society of London, ten years ago, entitled "The Acute Abdomen." Under this very caption, "The Acute Abdomen," the first edition of his monograph, 250 pages, appeared, dedicated to students and surgical dressers, which, having been exhausted in 1914, went into a second edition.

Perusal of this book, "The Acute Abdomen," which bids fair to become a classic, might answer the hypercritical Dr. Lyon, and perhaps explain to Dr. Spillman the *fons et origo* of the purity of the terminology, "The Acute Abdomen," which he credits to Dr. Gibson.

Comment of the editor has it that "scientific medicine demands scientific phraseology." Be that as it may, there is also an art of medicine to be considered; and to give expression thereto, it is meet to draw such metaphor as "the acute abdomen," which visualizes a clinical picture, the syndrome of which is common to a host of acute ailments peculiar to the abdomen. As for terminology—the essence alike of science and art—both are daily enriched by new coined words. Thereafter, common usage is authority for their sanction and thereby establishes its precedence over pedantry. Why muse with Homer or risk being judged hypercritical, when browsing amid the bookshelves of a modern library would have led "to pastures new"—"The Acute Abdomen" of ten years' growth.

MARTIN W. WARE, M.D., New York.

"STANDARDIZATION OF LABORATORY TESTS"

To the Editor:—Reference to the standardization of the Wassermann test was made in two recent numbers of THE JOURNAL (Dec. 6, 1919, p. 1773, and Dec. 20, 1919, p. 1897). In neither of these was mention made of research work which is now being conducted at the University of Pennsylvania and the Polyclinic in Philadelphia under the direction of John A. Kolmer, and which represents, no doubt, the best attempt which has as yet been made to standardize this important test. The results of this work will, I am informed, appear in a series of about twenty papers in the

American Journal of Syphilis. The first two articles of this series were published in the January, 1919, number of that journal. To date, six papers have appeared. It is expected that the balance will appear during the course of this year. All laboratory workers who make the Wassermann test will be greatly interested in the results obtained by the Philadelphia investigators.

HENRY ALBERT, M.D., Iowa City.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"PNEUMO-STREP-SERUM"

To the Editor:—Mulford & Co. are advertising a serum called pneumo-strep-serum, one of their advertisements appearing in the *Journal of the American Public Health Association* for January, 1920. Is there really anything in the claims which they put forth in this advertisement which should lead men to use a combined serum of this kind? A hasty reading of this advertisement by medical men would induce them to believe that this serum was the very mithridate of pneumonia.

Your opinion of the subject will be thankfully received.

GEORGE W. GOLER, M.D.,
Health Officer, Rochester, N. Y.

ANSWER.—This advertisement is in the form of an announcement, with large head lines "Announcing the Production of Pneumo-Strep-Serum." It informs the physician that reports from army camps indicate that various streptococci are frequently associated with pneumococci as causative factors in pneumonia. The advertisement features a picture showing the method of injecting cultures into a serum-producing horse. It suggests to the physician that "when it is determined that the pneumonia is complicated by the streptococcus, the conjoint use of Antipneumococcic Serum Polyvalent and Antistreptococcic Serum Polyvalent is indicated." The advertisement then goes on to say that "the difficulties and inconvenience of separate injections" may be avoided by the use of this new preparation, which is prepared "by injecting horses simultaneously with the fixed types I, II and III of pneumococcus, also some strains from group IV pneumococcus, and 15 key strains of streptococcus." This serum, the manufacturer says, "therefore possesses the combined advantages of antipneumococcic and antistreptococcic serums." It is also claimed that "it contains antibodies against all the various strains of pneumococcus and streptococcus employed." Finally, it is stated that "by standardization against type I pneumococcus, it is equally as potent against type I pneumonia as the type I and polyvalent antipneumococcic serums."

The advertisement by going beyond our present knowledge carries misleading inferences, a few of which may be mentioned. It takes for granted that the therapeutic value of antipneumococcus and antistreptococcus serums is settled. The fact is that the different varieties of such serums are still in the experimental stage. The serum against pneumococcus type I has received perhaps the most favorable comments, but available evidence based on the experience in the army camps during the war does not leave a very large margin on which to predicate any claims for effective specific action even by this serum. Of the other serums of the class mentioned in the advertisement not one warrants the inferential claim of specific value. Again, the advertisement conveys the impression that pneumonia generally is a mixed infection, but that is not the case, especially when it concerns the classical lobar pneumonia caused by some variety of the pneumococcus, and, after all, that is the kind that the physician is called on most frequently to treat. The advertisement assumes a power of antibody-production by the horse that has not been demonstrated. Fundamental facts in immunology indicate that a horse injected with so great a variety of antigens is not able freely to produce all the corresponding antibodies. Even if the serum of horses injected with a single variety of pneumococcus or streptococcus can acquire specific therapeutic value in human infections with that organism—which has not been demon-

strated conclusively—there nevertheless would be little chance that a horse injected simultaneously with the fixed types one, two and three of pneumococcus, also some strains from group four pneumococcus and "15 key strains" (whatever that may mean) of streptococci could yield a serum of such manifold specific virtues as inferred by the advertisement.

The basic question involved in the inquiry is whether or not the medical profession should take its therapeutics from the manufacturers of therapeutic products. The medical profession has, for its own protection and information, created a body that is competent to determine the probable scientific value of therapeutic agents. That body is the Council on Pharmacy and Chemistry. Had the "Pneumo-Strep-Serum" of Mulford's the virtues with which the advertisement inferentially endows it, this product would have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. It has not been so accepted although many other biologic products of the same manufacturer have been. It is to be regretted that such journals as the *American Journal of Public Health*, *Military Surgeon*, *Southern Medical Journal*, *Journal of Laboratory and Clinical Medicine*—among many others—should permit the use of their pages for such purposes when they could easily protect themselves and their readers by securing accurate information concerning such products from the Council on Pharmacy and Chemistry. If there is one field in which reliable information and unprejudiced scientific opinion should prevail it is in the therapeutics of biologic products. At the present time, too many manufacturers are advertising these products without any regard for scientific fact or rationality, and too many physicians accept therapeutic instruction concerning these products from those commercially interested.

Miscellany

THE PHYSICIAN AND THE PROHIBITION LAW

Internal Revenue Regulations 60, regulating the manufacture, sale, transportation, importation, exportation, delivery, purchase, possession and use of intoxicating liquor under the national prohibition act providing for the enforcement of the eighteenth amendment of the constitution, have just been issued by the commissioner of internal revenue.

Previous regulations provided for the enforcement of the war time prohibition law.¹

LIQUOR DEFINED

Liquor is defined to include alcohol, whisky, brandy, rum, gin, beer, ale, porter and wine, and, in addition, any spirituous vinous, malt or fermented liquors, whether medicated, proprietary, patented or by whatever name called, containing one-half of one per cent. or more of alcohol by volume, which are fit for use for beverage purposes. This definition includes homeopathic potencies, attenuations and dilutions. It does not include denatured alcohol or denatured rum or medicinal and other alcoholic preparations unfit for use as beverages.

PHYSICIAN DEFINED

The word "physician" is defined as meaning any person duly licensed to practice medicine and actively engaged in the practice of medicine in the state in which licensed. It does not include osteopaths and chiropractors. Pharmacist are any persons licensed under the laws of any state to compound and dispense medicines prescribed by a duly licensed physician and who are actively engaged in the practice of such profession.

CONDITIONS UNDER WHICH LIQUORS MAY BE USED

Under the conditions provided, intoxicating liquors may be made, transported, sold and used in the manufacture of medicinal preparations in accordance with the formula prescribed by the U. S. Pharmacopeia, National Formulary

1. THE JOURNAL A. M. A., Jan. 19, 1918, p. 186; Feb. 9, 1918, p. 410; March 2, 1918, p. 645; July 5, 1919, p. 121; Oct. 4, 1919, p. 1080; Oct. 25, 1919, p. 1304; Nov. 15, 1919, p. 1544.

or the American Institute of Homeopathy, which are unfit for use for beverage purposes:

1. In the manufacture of patented, proprietary and other medicines which are unfit for use for beverage purposes.
2. By retail druggists and pharmacists in the compounding of medicinal preparations unfit for use for beverage purposes, and for dispensing on physicians' prescriptions.
3. By physicians in the practice of their profession.
4. By hospitals and sanatoriums for medicinal and scientific purposes.
5. In manufacturing industrial establishments for first aid treatment.

Alcohol may be used for medication by druggists or pharmacists for laboratory purposes, by dentists and veterinarians in the course of their practice, and by any college, university or institution of learning in any laboratory for scientific research, and in any hospital or sanatorium.

Alcoholic medicinal preparations fit for use as beverages may be used by retail druggists in compounding prescriptions of physicians, by hospitals and sanatoriums for medicinal purposes, and by physicians in the practice of their profession.

WHO MAY SECURE PERMITS

All persons desiring to manufacture, sell, furnish, prescribe, purchase, possess or use intoxicating liquor must procure permits. Persons procuring liquor for medicinal purposes on prescription of physicians holding permits to prescribe are not required to have a permit themselves. Permits to prescribe intoxicating liquor do not confer authority other than to prescribe, that is, a physician holding a permit to prescribe liquor for his patients in his practice is not authorized thereby to manufacture or sell intoxicating liquors.

APPLICATIONS FOR PERMITS

Applications for permits must be made on Form 1404, in triplicate. All three copies must be signed by the applicant, the original being sworn to before a notary public. All three copies must then be forwarded to the federal prohibition director in charge of the administration of the law in the state. The director may issue a permit, such permit being in triplicate, and having the same serial number as the application. One copy of the permit and the application are returned to the applicant.

Full names must be signed to each application. The permit when granted must be conveniently and permanently filed so that it is readily accessible at any time. Any person holding a permit, who moves his place of business (as a physician changing his location) may surrender his copy of application and permit to the director and have a new one issued with the change of location.

Permits issued prior to Jan. 17, 1920, must be renewed as the commissioner may direct, but holders of such permits may continue to operate under them until their new applications are acted on.

Permits issued prior to August 31 of any year will expire on December 31 of that year.

BONDS

Bonds in duplicate must be filed with the application, except that unless otherwise required by the commissioner, no bonds need be filed by physicians, dentists or veterinarians asking for permits to use intoxicating liquor in the course of their practice, or hospitals and sanatoriums.

DELIVERY OF LIQUOR

Whisky and brandy, bottled in bond, for medicinal purposes may be delivered on receipt of permits on form 1410 to hospitals or sanatoriums or to physicians holding permits to purchase liquors for medicinal purposes, or to wholesale or retail druggists or pharmacists.

PERMITS TO PURCHASE

Any person entitled to procure intoxicating liquor must submit an application to purchase on Form 1410. This application, when approved by the director, becomes a permit. The applicant must describe the intoxicating liquor in detail, and must give the quantity in gallons of each kind of intoxicating liquor on hand at the time of the application and the quantity in gallons previously received by him during the current calendar year. The application must also show

the name and address of the vender, the purpose for which the liquor is to be used, the serial number of the permit held by the applicant, and the address covered thereby. All applications must be sworn to and must be made in triplicate. If transportation is required, one or two additional copies must be made. All copies are forwarded to the director for approval. All permits to purchase expire in ninety days after the date of approval.

HOMEOPATHIC AND ECLECTIC PHYSICIANS

Physicians of the homeopathic and eclectic schools, after obtaining a permit to use alcohol or homeopathic potencies, attenuations and dilutions in the course of their practice, may procure such preparations from homeopathic pharmacists. One month prior to the current quarter of the calendar year, each homeopathic or eclectic physician may file an application on Form 1410 in triplicate, for the total quantity of alcohol or homeopathic potencies, attenuations and dilutions which he desires to purchase during the following quarter. This application, when approved, becomes a blanket permit to purchase goods for ninety days. It must state the name of the homeopathic pharmacist from whom the physician desires to purchase these preparations. No physician may receive in excess of 15 gallons of alcohol or alcoholic preparations during any one year.

U. S. P. AND N. F. PREPARATIONS

Distilled spirits and wines may be used in the manufacture of medicinal preparations in accordance with U. S. Pharmacopeia and National Formulary or the American Institute of Homeopathy, provided they are unfit for beverage purposes. They must contain no more alcohol than is necessary, and must contain in each fluidounce a dose of recognized therapeutic value.

Preparations included in the U. S. Pharmacopeia and National Formulary which are fit for beverage purposes will be regarded as intoxicating liquor and subject to the same restrictions.

DENATURED ALCOHOL

Alcohol may be denatured by any one of the following seven formulas:

1. Mercuric chlorid, 1:2 000; mercuric chlorid, 0.8 gm.
2. Hydrochloric acid, 60 c.c.; alcohol, 64 c.c.; water, 300 c.c.
3. Mercuric chlorid, 1½ grains; hydrochloric acid, 2 drams; alcohol, 4 ounces.
4. Formaldehyd, 2 parts; glycerin, 2 parts; alcohol, 96 parts.
5. Phenol (carbolic acid), 1 dram; tannic acid, 1 dram; alcohol, 1 pint; water, 1 pint.
6. Alum, ½ ounce; formaldehyd, 2 drams; camphor, 1 ounce; alcohol and water, 1 pint.
7. Liquor cresolis compositus (U. S. P.) 10 c.c.; alcohol, 1,000 c.c.

SALE OF DENATURED ALCOHOL

Retail druggists may sell alcohol medicated as above in quantities not to exceed one pint for other than internal use, without physicians' prescriptions, to persons not holding permits, provided that in each case the container bears a poison label. Alcoholic medicinal preparations, not for use for beverage purposes, may be sold by retail druggists on physician's prescription, provided the name of the druggist appears on the prescription in the physician's handwriting. Prescriptions may not be issued for more than one pint of such liquors at any one time. Refilling of such prescriptions is forbidden. Pharmacists may refuse to fill such prescriptions if they have reason to believe that physicians are prescribing for other than medicinal purposes or that a patient is securing, through one or more physicians, quantities of intoxicating liquor in excess of the amount necessary for medicinal purposes, which shall not be more than one pint to the same person in ten days. Physicians may not prescribe liquor for their own personal use.

PRESCRIPTIONS FOR LIQUOR

Pharmacists filling prescriptions for intoxicating liquor must, at the time of filling, endorse on each prescription, over their signature, the word "cancelled," together with the date on which the liquor is delivered. Such prescriptions must be kept in a separate file. Once a month each druggist must send to the director a list of prescriptions filled by

them, showing the names of the physicians, the names of the patients, and the total of liquor dispensed to each patient during the month. Retail druggists selling intoxicating liquors, whether on a physician's prescription or otherwise, must pay special tax as liquor dealers and must keep such tax stamp conspicuously posted.

ADMINISTRATION OF LIQUOR BY PHYSICIANS

Distilled spirits, wines and alcoholic medicinal preparations fit for use for beverage purposes may be administered by physicians to their patients for medicinal purposes, when such liquor is necessary to afford relief for some known ailment, and when delay in procuring the liquor through a retail pharmacist on prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may obtain no more than six quarts of liquor during any calendar year to be administered to their patients only in quantities necessary to afford relief at the time of administration. They may not sell or furnish such liquors to any persons. The total amount of liquor administered to any one patient by one or more physicians may not exceed one pint in ten days.

HOSPITALS AND SANATORIUMS

Persons conducting bona fide hospitals or sanatoriums, engaging in the treatment of persons suffering from recognized disease or ailments (except treatment of alcoholism), may administer liquors to patients in necessary quantities on prescription of the hospital or sanatorium physician. Such physician shall issue a separate prescription for each patient, but a separate prescription for each dose is not necessary unless prescribed at irregular intervals. All such prescriptions must be in duplicate, both copies signed by the physician, and must show the name of the hospital or sanatorium, the date of issue, the name of the patient, the kind of liquor prescribed, the directions for use, and the amount to be administered during any given period.

ALCOHOL FOR EXTERNAL USE

Tax paid alcohol procured by hospitals or sanatoriums may be issued to attendants for rubbing purposes on prescriptions issued by the hospital physician. Denatured alcohol may be issued to attendants in quantities not exceeding one pint, without a prescription.

HOSPITAL REPORTS

Hospitals or sanatoriums must report at the end of each month to the director, sending one copy of each prescription, and must keep the other copy filed chronologically at the hospital. Hospitals or sanatoriums are forbidden to sell or furnish liquors or alcohol to other persons.

INSTITUTIONS FOR ALCOHOLICS

Bona fide hospitals or sanatoriums engaged in the treatment of alcoholism may obtain liquors and alcoholic medicinal preparations for use in the treatment of chronic alcoholism, but only when the tapering off method is used, or when the dosage is steadily reduced until the patient, within a reasonable time, such as four weeks, has lost the craving for alcoholic stimulants. Such liquor may be administered to patients only in necessary quantities and only under the direction of a duly qualified physician employed by the hospital. Such institutions must keep three records, the first containing the name and residence of the patient, age, date of entry and departure from the institution, and the condition for which he is treated. A serial number will be given to each patient when admitted. The second record will show the serial number of the patient, condition for which treated and the amount of liquor furnished him during the period treated. A copy of this record will be forwarded to the director each month, the serial number being used in place of the name of the patient. The third will show the quantity and kind of liquor on hand the first of each month, the quantity received during the month, the quantity dispensed to patients, the quantity used in compounding legitimate medicinal preparations, and the quantity on hand at the end of the month. A transcript of this record will be sent to the director each month.

USE OF LIQUORS IN EMERGENCIES

Intoxicating liquors may be administered in case of accident, shock or other emergency, only by a physician, nurse or other person in charge of first aid stations in manufacturing, industrial and other establishments. Such establishments must keep a record in duplicate, and must transmit a copy each month, showing the amount on hand, the amount received and the amount dispensed, with the date and the name of each person to whom dispensed and the amount on hand at the end of the month.

DENTISTS

Dentists may use alcohol for professional purposes in quantities not to exceed six quarts a year. Applications for permits to use alcohol for such purposes must state the purposes for which it is intended.

LABORATORIES

Alcohol may be used for legitimate laboratory purposes, such as chemical, biologic, bacteriologic and clinical, provided its use is nonbeverage, and that it is of such a nature as effectually to preclude diversion of the alcohol for unauthorized purposes. Applications for permits from laboratories will be treated separately on their merits on account of the varied nature and multiplicity of such laboratories.

PRESCRIBING OF LIQUOR BY PHYSICIANS

Physicians who have filed applications on Form 1404 and who obtain permits to prescribe intoxicating liquor may prescribe such liquors for persons on whom they are in attendance, if, after careful physical examination, or in cases in which such examination is impracticable on the best information obtainable, the physician believes that the internal or external use of such liquor as a medicine is necessary, and will afford relief from some known ailment.

No prescription may be for more than is necessary for the person for whom it is prescribed, and in no case shall it exceed one pint in ten days for the same person by one or more physicians.

Physicians are not permitted to write prescriptions for liquor for their own use, or to use any liquor procured on prescriptions written by them. Prescriptions may be filled only by a pharmacist and may not be refilled.

PRESCRIPTION BLANKS

All prescriptions must be made on Form 1403, and must contain all the data called for. If the physician does not possess any such forms, and delay may result in loss of life or intense suffering, he may prescribe without the use of Form 1403, but his prescription must contain all the information called for. Blank prescriptions on Form 1403, issued by the commissioner in book form, serially numbered, may be procured without cost by any physician holding a permit. Not more than one book shall be issued to a physician at a time.

Prescription blanks are printed with stubs attached, the stub being a duplicate. All prescriptions must be in duplicate, both copies signed by the physician. After the last blank has been used, the book containing the duplicates must be returned to the director. Any unused, mutilated or defaced blanks must be returned with the book.

In case of prescriptions written on other forms in an emergency, duplicate copies must be returned to the director at the end of the month. Prescription blanks must be used in the order of the serial numbers printed thereon.

PHYSICIANS' RECORDS

Physicians prescribing intoxicating liquors must keep on Form 1402 an alphabetical record showing every such prescription issued by him, giving the date, the amount and kind of liquor prescribed, the name of the patient, the ailment for which prescribed, the directions, and the amount and frequency of the doses.

LIABILITY

No special liability is incurred by physicians, hospitals or sanatoriums for special tax for administering intoxicating liquors in cases of emergency.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
 CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
 CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
 ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
 INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
 KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
 MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
 MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
 NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
 NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
 VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.
 WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

THE HOUSE OF CALVARY HOSPITAL

ROBERT J. REILEY
 Architect
 NEW YORK

The House of Calvary Hospital is devoted to the care and treatment of men and women suffering from cancer and is in charge of Catholic sisters of the Dominican order. The hospital was located for many years in Perry Street, New York; but when this property was taken by the city in connection with the opening of a new street, it was decided to move to a less congested portion of the city and to erect a building to accommodate about eighty patients. The new site was selected with regard to the importance of having light and air on every side and at the same time of being readily accessible from the center of the city by the existing lines of transportation.

The management desired to maintain as far as possible the atmosphere of the home about the hospital, and this

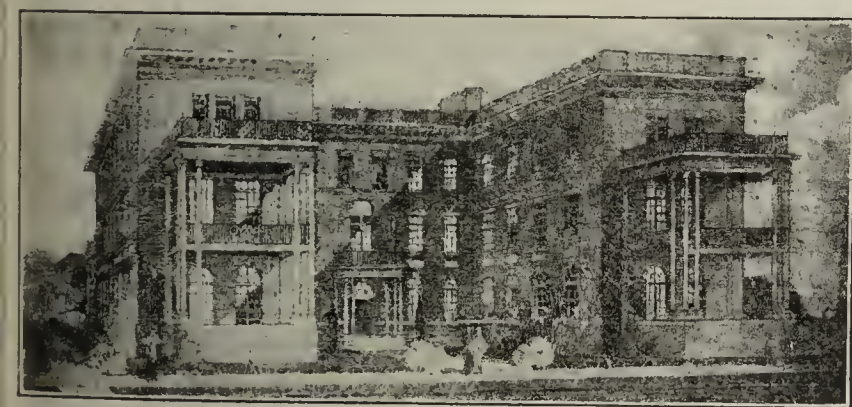


Fig. 1.—House of Calvary Hospital.

influenced the architect to select the colonial style of architecture, as it is probably more typical of our American home life than any other. The building is laid out on what is known as the pavilion plan, that is to say, the main wards are located in wings connected with a central building. In this case the pavilions are placed at right angles to the central building so that they may run approximately north and south, in order to obtain both morning and afternoon sun in all of the main wards. At the south end of each pavilion is a solarium for the patients occupying that ward, and at the north end an open balcony for use according to weather conditions.

Figure 2 shows the arrangement of rooms and wards on the main floor. The second floor is similar in general arrangement and is devoted to women patients. The third floor contains in the easterly end of the building the roentgen-ray room and the surgical department, comprising a seven bed ward, and sterilizing, wash up, etherizing, operating and recovery rooms. The westerly wing is devoted to the sisters' apartments, and in the central part of the building are a few private rooms for women patients. Owing to the

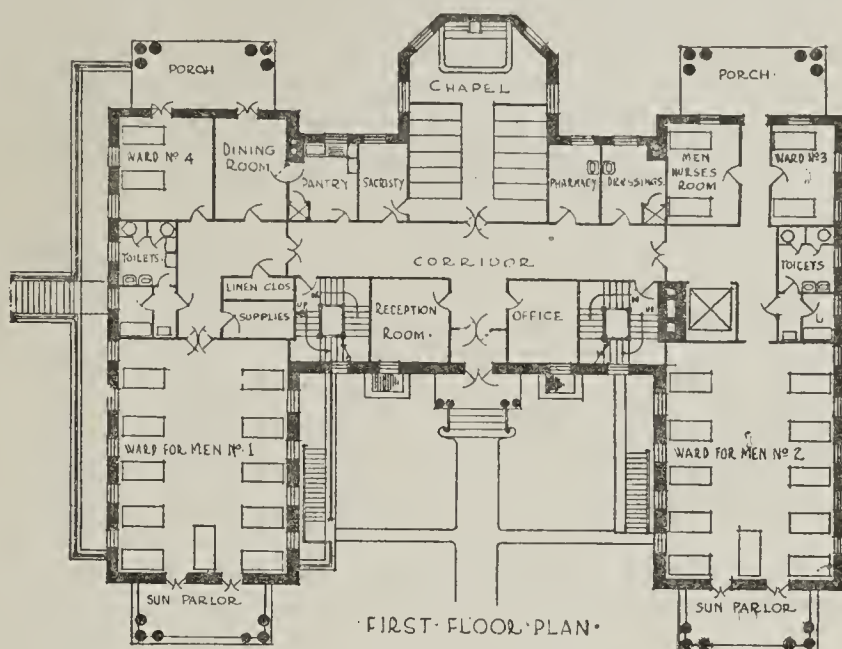


Fig. 2.—First floor plan.

special character of the work of this hospital, a room for changing dressings is placed on each floor and a small gas incinerator is part of its equipment.

The building is constructed of fireproof materials throughout; the columns, floor beams and girders are of steel, the floor construction of concrete, and the partitions of terra cotta blocks. Not only is the building itself fireproof, but an effort has been made to eliminate the danger from a fire in the contents of the building. This danger is that of smoke, and more particularly the panic caused by the smell of smoke. With this in mind, each floor of the building has been subdivided, and the passage of smoke from one floor to another has been prevented by enclosing the stairs and elevator shafts. On once entering the stair enclosure on any floor one may proceed downstairs and out of the building without reentering any of the corridors, thus insuring a smoke free exit.

One of the problems encountered in hospital construction has been the difficulty of obtaining a satisfactory material for use on the floor. In this case, in the wards and corridors it was decided to use linoleum cemented to the concrete underflooring with an interlining of felt. This material has many points to commend it, as it is sanitary, noiseless, and comfortable; but it is necessary to have the concrete thoroughly dried out before it is laid and to equip the beds and other heavy furniture with large feet or casters. Tile floors are used in the operating, sterilizing and etherizing rooms and in the toilet rooms; wood floors in the reception room, office and nurses' rooms, and cement floors, treated to prevent powdering or dusting, in the service portions of the hospital.

The building is heated by hot water; but an auxiliary steam heating system was installed so as to provide a means of rapidly heating the operating room, especially in the spring and fall when the general heating plant might not be in operation. This system also supplies steam for the laundry and sterilizing rooms. While natural ventilation is made use of as far as possible, artificial ventilation has also been installed. The building is cleaned by means of a stationary

vacuum cleaning plant placed in the basement but controlled from every floor. An electric push button is located beside each bed to light the nurses' signal, the elevator and dumb waiters are electrically controlled, and in general all practical labor saving devices have been adopted.

477 Fifth Avenue.

Texas June Examination

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 24-26, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 82 candidates examined, 80 passed and 2 failed. One hundred and thirty-one candidates, including 1 nongraduate and 32 osteopaths, received physicians' and surgeons' licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Georgetown University	(1909)	1
Hahnemann Medical College and Hospital, Chicago	(1919)	1
Tulane University	(1916, 1), (1919, 4)	5
Johns Hopkins University	(1914)	1
St. Louis University	(1919)	1
Washington University	(1918)	1
Columbia University	(1918)	1
Jefferson Medical College	(1919)	1
Meharry Medical College	(1919)	1
Baylor University	(1919)	18
University of Texas	(1918, 1), (1919, 48)	49

College	PASSED	Year Grad.	No. Licensed
Kansas City College of Medicine and Surgery	(1919)	1
Baylor University	(1919)	1
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama	(1914)	Alabama
Arkansas Industrial University	(1897)	Arkansas
College of Phys. and Surgs., Little Rock	(1911)	Oklahoma
College of Physicians and Surgeons, Los Angeles	(1915)	California
Denver and Gross College of Medicine	(1905)	Colorado
Denver College of Medicine	(1899)	California
George Washington University	(1906)	Utah
Howard University	(1916)	Missouri
Atlanta College of Physicians and Surgeons	(1913)	Georgia
Atlanta Medical College	(1915)	Georgia
University of Georgia	(1910), (1912)	Georgia
Bennett Medical College	(1911), (1915)	Illinois
College of Phys. and Surgs., Chicago	(1909), (1910), (1912)	Illinois
Northwestern University	(1904) Illinois, (1917)	Mass.
Rush Medical College	(1914), (1918)	Illinois
University of Illinois	(1912), (1916)	Illinois
Medical College of Indiana	(1897)	W. Virginia
Drake University	(1913)	Iowa
College of Phys. and Surgs., Kansas City, Kan.	(1900)	Kansas
Hospital Coll. of Med., Louisville	(1901), (1902), (1905)	Kentucky
Kentucky School of Medicine	(1906)	W. Virginia
Kentucky University	(1904)	Nebraska
Louisville Medical College	(1891)	Oklahoma
University of Louisville	(1911)	Tennessee
Tulane University	(1893), (1905), (1918)	Mississippi, (1916), (1918)
Louisiana	(1902)	Nevada
Baltimore University	(1911)	Maryland
Maryland Medical College	(1918), (1919, 2)	Mass.
Harvard University	(1904)	Michigan
Detroit College of Medicine	(1903)	Michigan
Saginaw Valley Medical College	(1907)	Missouri
American Medical College	(1899)	Kansas
Columbian Medical College	(1917), (1918), (1919, 2)	Arkansas
Kansas City Coll. of Med. and Surg.	(1913)	Missouri
National University of Arts and Sciences	(1893)	Kansas
Northwestern Medical College	(1913)	Illinois
St. Louis University	(1904) Missouri, (1917)	Oklahoma
St. Louis Coll. of Phys. & Surgs.	(1909)	Kansas
University Medical College of Kansas City	(1917)	Missouri
Washington University	(1901) Nebraska	
Lincoln Medical College	(1901)	New Hamp.
Dartmouth Medical School	(1883)	Dist. Colum.
Coll. of Phys. & Surgs. of the City of New York	(1899)	New Mexico
University and Bellevue Hosp. Med. Coll.	(1886)	Wisconsin
University of the City of New York	(1898)	Missouri
Eclectic Medical Institute	(1913), (1915)	Oklahoma
University of Oklahoma	(1900) Indiana, (1903)	Arkansas
Jefferson Medical College	(1904) Georgia, (1906)	Oklahoma
Chattanooga Medical College	(1906) Arkansas, (1915)	Tennessee
Meharry Medical College	(1906), (1908), Oklahoma, (1903), (1909), (1913)	Arkansas
University of Nashville	(1905)	Arkansas
University of Tennessee	(1905) New Mexico, (1918)	Tennessee
Vanderbilt University	(1914, 2), (1916, 2), (1917, 2)	Tennessee, (1916)
Oklahoma	(1905)	Oklahoma
College of Physicians and Surgeons, Dallas	(1915)	Oklahoma
Southern Methodist University	(1916)	Mississippi
University of Texas	(1899)	Vermont
University of Vermont	(1899)	Virginia
University College of Medicine, Richmond	(1915)	Arkansas
University of Virginia	(1907)	Maine
McGill University		

* Graduation not verified.

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, June 16-20, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 226 candidates examined, 201 passed and 25 failed. Twenty-six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
University of Colorado	(1913)	1
Chicago College of Medicine and Surgery	(1916), (1917, 3)	4
Chicago Hospital College of Medicine	(1918)	11
Chicago Medical College	(1886)	1
Hahnemann Med. Coll. and Hosp. Chicago	(1916), (1919, 9)	10
Loyola University	(1916, 3), (1918, 3), (1919, 40)	46
Northwestern University	(1914), (1918), (1919, 80)	82*
Rush Medical College	(1919)	26†
University of Illinois	(1918), (1919, 8)	9
Harvard University	(1919)	1
St. Louis University	(1918, 2), (1919, 4)	6
University of Nebraska	(1919)	1
Dartmouth Medical School	(1900)	1
Meharry Medical College	(1918)	1
University of Utrecht	(1913)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College	(1910, 2), (1914)	3
Chicago College of Medicine and Surgery	(1916), (1917)	2
Chicago Hospital College of Medicine	(1915, 2), (1918, 3)	5
Illinois Medical College	(1910)	1
Jenner Medical College	(1916, 2), (1917)	3
Loyola University	(1918)	1
Northwestern University	(1919)	1
Leonard Medical School	(1907)	1
Meharry Medical College	(1902), (1913), (1915, 2), (1916, 2), (1917), (1918)	8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Med. Coll. and Hosp., Chicago	(1901)	Iowa
University of Illinois	(1913), (1915)	Wisconsin
University of Louisville	(1910), (1916, 2)	Kentucky
Johns Hopkins University	(1904) Wisconsin, (1911)	Maryland
University of Maryland	(1904) Missouri, (1912)	New York
Harvard University	(1911)	Maryland
Detroit College of Medicine and Surgery	(1917)	Vermont
National University of Arts and Sciences	(1918)	Michigan
St. Louis University	(1916), (1918)	Missouri
Washington University	(1906), (1917)	Missouri
University of Nebraska	(1908)	Nebraska
New York Homeopathic Med. Coll. and Flower Hosp.	(1910)	N. Dakota
Western Reserve University	(1914)	Ohio
Meharry Medical College	(1916)	Missouri
Marquette University	(1914), (1916)	Wisconsin
University of Heidelberg	(1915)	Maryland
National University, Athens	(1904)	Indiana

* Sixty-five of these candidates received limited licenses, pending completion of their hospital internship.

† Twenty-five of these candidates received limited licenses, pending completion of their hospital internship.

Iowa September Examination

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 16-18, 1919. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University	(1919)	88.7
Rush Medical College	(1919)	93.1
University of Illinois	(1918)	90.7, 91.5
Tufts College Medical School	(1910)	80.1
Barnes Medical College	(1901)	76.8
St. Louis University	(1919)	90.5
University of Nebraska*	(1919)	89.5
Eclectic Medical College of the City of New York	(1906)	90
University of Pennsylvania	(1919)	88.1, 93.2

College	LICENSED BY RECIPROCITY	Year Grad.	Per Cent.
Loyola University	(1918)	69.7

* Finished work of medical curriculum, November, 1919; will receive M.D. degree in February, 1920.

Iowa Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 31 candidates were licensed by reciprocity at the meeting held Nov. 18, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College	(1909)	Alabama
Chicago Coll. of Med. and Surg.	(1909), (1917, 3)	Illinois
Hahnemann Med. College and Hospital of Chicago	(1905)	Illinois

Northwestern University	(1915), (1917, 2)	Illinois
Cash Medical College	(1917)	Illinois
Medical School of Maine	(1907)	Maine
College of Phys. and Surgs., Boston	(1916)	Maine
University of Michigan Medical School	(1918)	Michigan
University of Minnesota Medical School	(1918)	Minnesota
Kansas City Hahnemann Medical College	(1914)	Kansas
Louis College of Physicians and Surgeons	(1907)	Illinois
Louis University	(1909), (1915), (1919)	Missouri
University of Missouri	(1904)	Wisconsin
John A. Creighton Medical College	(1905)	Nebraska
.....(1907) Oklahoma, (1917, 2)		Nebraska
University of Nebraska	(1911), (1917)	Nebraska
New York Homeopathic Medical College and Hosp. (1889)		New Hamp.
Ohio State University College of Med.	(1917)	Ohio
Western Reserve University	(1913)	Ohio
Milwaukee Medical College	(1907)	Wisconsin
University of Edinburgh	(1912)	Kansas

Book Notices

ON GUNSHOT INJURIES TO THE BLOOD-VESSELS, FOUNDED ON EXPERIENCE GAINED IN FRANCE DURING THE GREAT WAR, 1914-1918. By George Henry Makins, G.C.M.G., C.B., President of the Royal College of Surgeons of England. Cloth. Price, \$5.50. Pp. 251, with 64 illustrations. New York: William Wood & Co., 1919.

This book presents, first, reports on the primary treatment of wounds by various surgeons working at the casualty clearing stations in the British Army, and, secondly, a series of case reports collected from hospitals on the lines of communication and during a service of five months at a base hospital in London. The author discusses several of the important conditions affecting the frequency of injuries to blood vessels. He states that the existence of a contusion of the arterial wall is not readily determined in the absence of a direct demonstration, as obliteration of the peripheral vessels may equally denote a contused lateral wound, complete transection or, as shown by explorations, no appreciable lesion at all. He recommends Bayliss' 6 per cent. gum arabic solution except in very acute hemorrhage, in which case he advises whole blood to replace the blood lost. Observations are presented which oppose the view that actual dilatation of the heart may be present in subjects of arterial wounds. Rather a want of tone in the heart muscle accounts for the outward displacement of the cardiac apex. This condition, Makins states, is similar to that observed in the unwounded and the front and diagnosed "disordered action of the heart." Pronounced cardiac systolic murmurs were observed frequently in thirty-seven out of 180 cases of arterial lesions. Eighteen were arteriovenous, and nineteen pure arterial wounds. The development of arterial hematoma and the various kinds of aneurysms and aneurysmal varix are described in detail. The author says that patients who have suffered a recent hemorrhage should not be operated on; while they may seem to be in good condition, they may fail to recover from the anesthetic and die within a few hours. Local anesthesia and careful hemostasis are indicated. Operation was of value when vasomotor and secretory disturbances were present. Mobilization of the nerve trunks accompanies operation, as it prevents secondary vascular changes in many cases. Observations tend to show that trophic changes are due not to vascular injury alone but to associated nerve injury. One new practical point which has been proved in this series is that the vein also should be ligated, following ligation of a main artery. To leave the vein viable diminishes the residual blood pressure maintained by the collateral circulation, and predisposes to gangrene. When suture is impossible in a main artery, the circulation may be maintained by means of a Tuffier tube, which may be gradually obliterated by a blood clot, giving the collateral circulation a chance to become enlarged. Much better results were obtained from the treatment of blood vessel injuries after ligation of both artery and vein and improved initial treatment of the wound. The result of injuries of the blood vessels illustrates the sinister influence of interference with the blood supply to a part on the development of anaerobic gangrene. The reader will be disappointed at the lack of emphasis on operative technic, and the absence of a detailed description. The review of the cases illustrates the difficulty of following up cases in the army, and shows the necessity for a better system of postoperative observations.

Medicolegal

Liability for Erysipelas—Touching Reputation

(*Hanson v. Thelan* (N. D.), 173 N. W. R. 457)

The Supreme Court of North Dakota, in affirming a judgment for \$300 damages in favor of the plaintiff, says that he, a boy 16 years old, sustained a fracture of his right leg between the knee and the ankle. Both bones were fractured. The boy was placed in a hospital under the care and in charge of the defendant. There was some testimony in the record that for about three days the defendant applied ice packs to reduce the swelling. Then he set the bones and enclosed the leg and foot in a plaster cast. The boy complained of suffering pain, and in about a week the cast was cut open and the leg was tightly bandaged with cloths. Three weeks later these bandages were taken off, and a board was placed under the leg and foot; they were wrapped in bandages, and a weight and pulley were attached. About two weeks after that these appliances were removed, and a shoe was laced on tightly, next to the bare foot, with some cotton batting inserted, and a weight and pulley were attached. Prior to the attaching of the last mentioned appliances, there were sores or bruises on the foot. Some two weeks later, the shoe was removed, after the boy had complained of suffering, and the foot was then black and blue. Three days after that the defendant put some salve on these sores. A physician from Bismarck came and examined the boy, and stated that erysipelas might be expected. The boy became quite ill, and was removed to a hospital at Bismarck, where erysipelas developed, and where he became very ill for many days, and remained for seven weeks. The main question in the record was whether the erysipelas developed from the method of treatment accorded by the defendant, and whether the defendant was derelict in his duty in that regard. The defendant contended that the evidence was insufficient to warrant the verdict for the reason that there was no direct evidence in the record that the condition of erysipelas was brought on the plaintiff by any act or omission of the defendant; also that the plaintiff by his own conduct in going out when the fracture was mending contrary to the instructions of the defendant, and otherwise disobeying instructions given by the defendant, precluded any recovery.

The law is now well settled that the physician owes to his patient the duty to exercise reasonable and ordinary care, diligence and skill such as are ordinarily possessed by physicians practicing in similar localities in the same general line of practice. It is equally well settled that the patient must not have contributed to his injury in any degree; that he must conform to all reasonable directions of his physician—otherwise he cannot recover. In other words, in an action against a physician for breach of his professional duty to his patient, the patient cannot recover if he has not conformed to all reasonable directions of his physician, or if his conduct has contributed to the injury on which the action is based. Under the evidence in this case, the court is of the opinion that the question of the defendant's negligence and of the plaintiff's contributory negligence were fairly questions for the jury. With reference to the contention that there was no direct or positive evidence to show that the resulting erysipelas was proximately caused by the acts of the defendant, the court is satisfied from a consideration of the testimony of the laymen, in connection with the expert testimony of two physicians for the plaintiff, that there was no error in submitting the question of the defendant's negligence to the jury. There was some evidence that the manner in which the shoe was bound to the foot was not proper, and that it was not examined sufficiently regularly or often, although the expert evidence in this regard was not strong.

The defendant asserted that his good reputation as a physician was at stake, and that this court should not condemn him as an incompetent or careless practitioner, on the record herein. It does not follow that this judgment so rendered, or its affirmance, does so condemn the defendant. Surely

physicians and surgeons are liable to make mistakes and to err in the performance of their duty to the patient occasionally, just the same as any other profession or any other trade. For a physician or a surgeon to assert that he is infallible and never makes a mistake is to place his ability and learning above the usual and ordinary run of human experience.

Recovery Allowed for Professional Services

(*Brooks v. Aldrich et al. (R. I.), 107 Atl. R. 100*)

The Supreme Court of Rhode Island, in overruling the defendants' exceptions and remitting this case with instructions to enter judgment on a verdict for \$4,000 in favor of the plaintiff, says that the action was brought by the plaintiff against the executors under the will of one Benedict to recover for personal services alleged to have been rendered to Mr. Benedict at his home and at the plaintiff's office daily, including week days and Sundays, day and night, for medicines, medical advice, and for treatment by the plaintiff's assistant and under his direction, by electric massage, etc., during the period from Sept. 1, 1909, to April 20, 1915, exclusive of the months of July and August in each year; also for services rendered during July and August, 1912, in going to Europe at the request of Mr. Benedict and there performing services of the same nature, and \$1,500 for expenses actually incurred by the plaintiff on that trip; the total amount due the plaintiff being alleged to be \$13,150 and interest. Mr. Benedict was a bachelor, who died in April, 1915, at about the age of 78. The plaintiff was a physician who specialized in treatment by electricity, Swedish movement and massage. For many years he had been an intimate friend of Mr. Benedict, and had treated him for various troubles during that time, or up to 1899, when the plaintiff moved to New York State, but testified that he returned in 1909 at the request of Mr. Benedict, for the purpose of taking care professionally of the latter during the remainder of his life, Mr. Benedict having promised, if he would do so, to provide generously for the plaintiff in his will. As no legacy was left to the plaintiff by Mr. Benedict, this suit was brought to recover from Mr. Benedict's estate for the value of the services rendered to him. The trial of the case required eight days, and the defendants in presenting their defense were properly allowed considerable latitude in the presentation of testimony. The defense was a denial of the amount and value of the services claimed to have been rendered, and payment. Prior to 1899, when the plaintiff moved away, Mr. Benedict paid him usually each month for services rendered. From 1909 until the death of Mr. Benedict there was much evidence to support the plaintiff's claim of a different arrangement. During this period the plaintiff rendered professional services to Mr. Benedict. No charge was made on his books therefor, and the defendants, although it appeared that Mr. Benedict was a man of very careful business habits, were able to produce but two receipts for small amounts showing payments to the plaintiff. Without referring in detail to the testimony, there was sufficient evidence, if believed by the jury, to warrant the verdict. The substance of one group of the defendants' exceptions was objection to the testimony of the plaintiff as to the reasonable value of his services; but the defendants took nothing by these exceptions. The plaintiff was qualified to give his expert opinion, and the fact that he was an interested party had a bearing on the weight to be given to his testimony, but not on its admissibility.

Suicide as Evidence of Insanity

(*Wallace v. United Order of Golden Cross (Me.), 106 Atl. R. 713*)

The Supreme Judicial Court of Maine says that the presumption of sanity must be entertained in the absence of proof, and when the record is silent. This presumption is not overthrown by the act of committing suicide. Suicide may be used as evidence of insanity, but, standing alone, it is insufficient to establish it. Insanity cannot be predicated simply on the act of self-destruction; for human experience has shown that sane men have taken their own lives.

Killing of Insured Physician on National Guard Duty

(*Interstate Business Men's Accident Association of Des Moines, Iowa, v. Lester (U. S.), 257 Fed. R. 225*)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment in favor of Mrs. Lester for the full amount of an accident insurance policy issued by the defendant association on the life of her husband, says that the policy insured him "while he is engaged in the occupation of a physician and surgeon . . . in case of death effected directly and independently of any other contributing, concurring or intervening cause, by external violent and accidental means." When the insurance was taken out, in January, 1913, and at the time of his death, Dr. Lester was engaged in the practice of his profession at Walsenburg, Colo. He was also a member of the national guard of that state, holding the rank of major, and assigned to the medical corps. When the governor called the national guard into service during the strike of the employees of the Colorado Fuel & Iron Company, Dr. Lester joined his company as a part of its medical corps. On the morning of April 29, 1914, he visited a number of his patients in Walsenburg, professionally. He then went with a small detachment to a point a few hundred yards from the city; the force having been sent out to reconnoiter and resist, if necessary, the activities of strikers who were in the foothills or mountains near the town. The lieutenant of this force was wounded. Dr. Lester had just finished dressing his wound, and was down on his hands and knees in a railroad cut observing some men through his field glass, to decide whether they were strikers or soldiers. He was shot, and died almost instantly. Was he at the time of his death "engaged in the occupation of a physician and surgeon"? Was his death effected wholly by "accidental means"? This action on the insurance policy turned wholly on these two questions, which are answered in the affirmative. The defendant insisted that the language of the policy, when fairly interpreted confined Dr. Lester to the practice of his profession in the ordinary walks of civil life; that, when he joined his company in the military service to which it was called, he changed his vocation and become, instead of a physician and surgeon, a soldier; but the court does not think this position could be sustained without disregarding the facts. His service with his company was temporary. He was called out to meet an emergency. While the service lasted for some months, it was a side issue. It was known that it would be temporary, and was to be considered as answering a call to suppress a riot, or any other temporary engagement. This measured the term of the service; but the court must look at the character of the service also. Dr. Lester was in no way engaged in the military activities of his company. His services were those of a physician and surgeon. He continued to practice his profession at Walsenburg, as well as attend to the needs of his company. The authorities are in uniform that such temporary changes do not constitute change of occupation within the meaning of insurance policies. To constitute such a change there must be an abandonment of the vocation specified in the policy and the adoption of some other calling. If such temporary activities are to destroy the protection of insurance, it must be by an express provision in the policy. So far as vocation is a factor in determining the hazard, it is based on the average of the whole class. A physician practicing his profession in the congested districts of a large city will be exposed to many hazards to which a physician in a small country town will not be subject. All of these matters, however, are embraced in the general average of hazards of the class of physicians and surgeons. If one individual at one time is exposed to a largely increased hazard, as Dr. Lester was on the occasion of his death, others will be exposed to hazard falling greatly below the average. These are factors which the insurance is based on. Nor is it true that simply going into an environment of greatly increased hazard, with conscious knowledge of such hazard, will cause injury or death which results therefrom not to be accidental within the meaning of such policies as this one.

Social Medicine and Medical Economics

ADVERTISING IN RURAL PUBLIC HEALTH WORK

An Account of Some Methods Used Successfully in Lee County, Mississippi

CHAILLOS CROSS, M.D.

State Director of Rural Sanitation, Mississippi State Board
of Health

GEORGE G. HAMPTON, M.D. (Senior Field Director of Rural Sanitation,
Mississippi State Board of Health); FRED C. CALDWELL, S.B.,
M.D. (Senior Field Director, International Health
Board), and CLARKE H. YEAGER, M.D. (Senior Field
Director, International Health Board)
TUPELO, MISS.

Preventive medicine has been given a tremendous impetus by the experiences of the late war; but if work of this nature is not pushed energetically while the interest still lives, the old apathy will return. Public health work is a business and will yield the greatest results if business

25,000 people. Most of the county seats are cities of from 3,000 to 10,000, and the other communities vary in size from a mere cluster of houses to towns of 800 inhabitants. The population is about evenly divided between white and black.

Individualism is strong among the white population, for there have been no foreign accretions, at least since the Civil War. The native American cannot be coerced. Any change from the old customs and habits of life demanded by outside authority constitutes for him a violation of personal rights and liberty. When the national government first enforced the laws to protect the cattle against the Texas fever, several of the dipping vats in this county were dynamited. But once convinced, the native American becomes a willing co-worker. He can be more easily led if the natural leader of his community is first persuaded. These strategic men usually live in the towns, where most of the progressive people are to be found. Between these towns there is often jealous rivalry, but a community or county spirit has never been well developed.

Public health work in this state had its inception ten years ago and is still in its infancy, although developing rapidly.



Exhibit at fair.

methods are used. This applies equally well to the internal organization and to the means used to secure public cooperation, without which the work is impossible. Various forms of public health work have been carried on long enough to develop good internal organization and to construct excellent programs, but these often fail in securing their maximum success because public sentiment is not behind them.

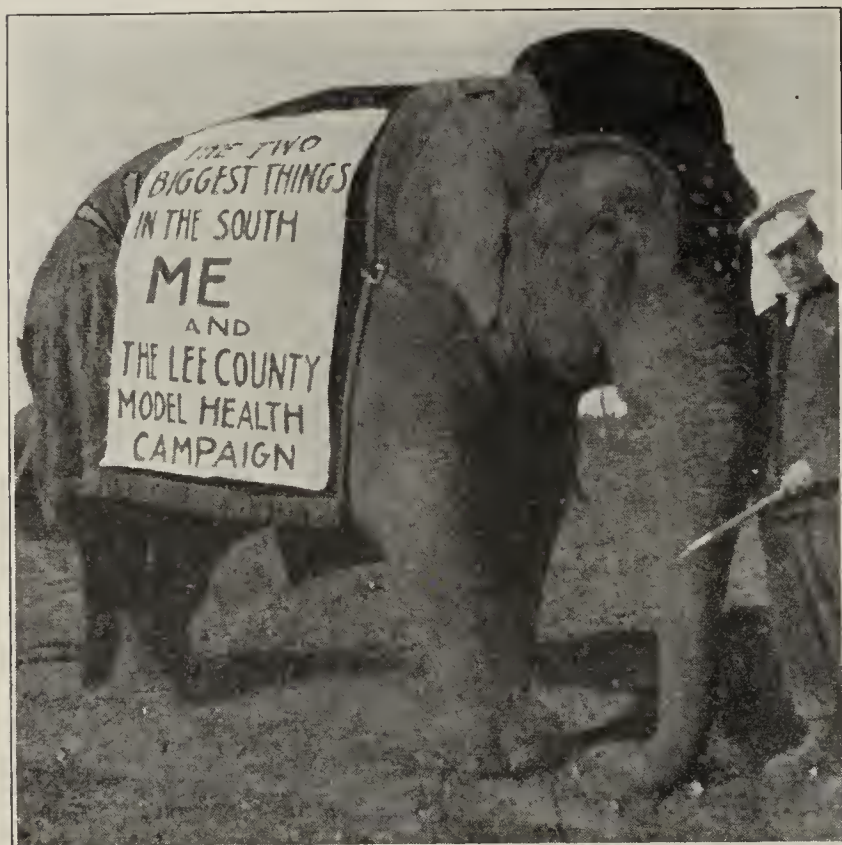
In the ordinary lines of business it is well known that many firms which manufacture a superior line of goods never grow, while others whose products are no better, or even of inferior quality, have an enormous development, owing to the wise and extensive use of advertising. In this way the public is informed of the particular merits of the firm's goods, and a demand for them is created even in the most remote communities. With this idea in mind, the Department of Rural Sanitation of the Mississippi Board of Health decided to use advertising methods in its health campaign in Lee County.

To be successful, the methods employed in advertising must be adapted to the people whom it is desired to reach. Mississippi is essentially a rural state with a population of approximately 2,000,000 and with no city of more than

It remained for us to plan in Lee County a campaign that would educate the people along health lines, and at the same time develop a community and county spirit, which are telling, or even indispensable, factors in developing permanent health work. A county with a boosting spirit will not permit disease to run unchecked after the first enthusiasm of a health campaign has died down. The program which we outlined to the progressive business and professional men of the county at once won their backing.

As in every other community, the finances were not unlimited, and every dollar had to be stretched to the utmost. The methods employed in the campaign were adaptations of means used in other lines of business to interest prospective customers and make them buy. From the first, we let no opportunity slip to bring our work to the attention of the people. Articles were written for the local newspapers, attractive signs were placed in prominent places, and stereomotorgraphs showing pictures of our work were placed in conspicuous positions in the windows of business houses in Tupelo, the county seat and headquarters of our organization. The arrival of a circus in the city afforded an excellent opportunity for publicity, for, without any expense, we

were able to place a sign on one of the elephants, advertising our work. Though utilizing every opportunity that thus presented itself, in carrying forward our campaign we relied mainly on our original advertising devices, a description of which may prove interesting.



Advertising the health campaign at the circus.

THE PUBLIC MEETINGS

As would naturally be expected in a community of intense individualism, we encountered serious opposition when we

GOOD ROADS, GOOD HEALTH, GOOD CITIZENSHIP
HEALTH THE COUNTY'S BEST ADVERTISEMENT
HEALTH OUR GREATEST ASSET
TAKE THE RIGHT ROAD TO HEALTH
CLEAN UP AND KEEP CLEAN
A LITTLE PRECAUTION MAY ADD YEARS
COLLECT YOUR THREE SCORE YEARS AND TEN
SLEEP WITH YOUR WINDOWS OPEN
A SANITARY PRIVY A LIFE SAVER
EVERY HOME PROPERLY SCREENED AND CLEAN
YOU ARE NOT GERMPROOF, WAKE UP
BREATHE THROUGH YOUR NOSE
FLIES, HOW LONG SHALL WE EAT TOGETHER?
WHEN ONE IS SICK, KEEP OTHERS AWAY
MEDICAL INSPECTION FOR SCHOOLCHILDREN
DON'T DEPEND ON SOME ONE ELSE
COVER YOUR MOUTH WHEN YOU COUGH
WASH YOUR HANDS BEFORE HANDLING FOOD
DISEASE PREVENTION COSTS LESS THAN CURE
CARELESS SPITTING SPREADS TUBERCULOSIS
SHARE THE ROAD; YOU CANNOT BE HEALTHY ALONE
BUY NOTHING IF NOT SANITARY
PROTECT OTHERS FROM DISEASE AND DEMAND PROTECTION
DECLARE WAR ON FLIES AND MOSQUITOES
WHY TRAVEL WITH DISEASE?
BETTER MILK, BETTER BABIES, BETTER CITIZENS
THE COUNTY DE SOTO WAS SEEKING
COUNT THE COST OF SUPPORTING THE MOSQUITO
HEALTH DEMANDS COMMUNITY COOPERATION

A few of the sentences used on mile post signs.

began our work in the county. Petitions were circulated against us in every district. We wanted the people to feel that we were really their friends and not the representatives of some unknown arbitrary force that had come to change their methods of living. We knew that nothing could be more potent in overcoming their distrust and suspicion than

well planned public meetings, in which the people might become acquainted with the workers and the work that was being done.

The ordinary public health meeting is not exceedingly popular. We therefore decided to use moving pictures to secure larger crowds to whom we could explain the advantages of the sanitary measures we were advocating. The films were used simply as a means of entertainment and not necessarily to teach health subjects, although we realize that a moving picture that will educate, and at the same time furnish enjoyment, would be the ideal. Such films are rare, but in the near future we shall be able to describe one that we are now producing.

A Delco representative readily consented to furnish the lighting system, the moving picture projector, and films if we would pay only the return charges on the films. Inasmuch as the lighting system was mounted on a Ford truck, we were able to hold such meetings in the most remote communities. A phonograph, which a local dealer lent to us, was also a part of our equipment. In the course of time we found it to our advantage to arrange for a supply of films from a film exchange in a neighboring city, and to use a truck belonging to the state board of health and equipped with a Delco system.

The results were remarkable, for instead of scant crowds, our audiences varied from 100 to 500 in size. Several times the crowd was so large that we were compelled to hold the meeting outdoors. But the most pleasing result to us was the changed attitude of the people toward us throughout the county. It was necessary only to announce in a church or school that one of our meetings was to be held, and the place of meeting was filled at the appointed hour.

BULLETINS AND HEALTH SEALS

Intensive health work is necessarily a slow process, and in a county of 28,000 people several months must elapse before every home is surveyed. In order to stimulate interest and promote health education in every home in the county



Mile post sign.

throughout the progress of our work, a weekly bulletin was published and widely distributed in the county.

Another type of bulletin was published monthly for distribution throughout the state. This was a challenge to citizens of other counties to awake to the necessity for health campaigns in their communities, such as is now in progress in Lee County.

One of the health posters of the American Medical Association has been adapted to local conditions, and a seal

printed to be used on all mail of the department of rural sanitation. The state board of health, several of the Mississippi schools, and some of the local business men have agreed to use them on all of their correspondence.

Both of these means of advertising have a double purpose, for in addition to keeping interest alive in Lee County, they have been useful in arousing the interest of other counties in public health work.



Warning at approach to curve.

EXHIBITS AT LEE COUNTY FAIR AND STATE
HEALTH OFFICERS' MEETING

At the Lee County fair, although our booth was located on the second floor among the educational displays, it was visited by more people than any other one exhibit. The bare walls of the booth were covered with white cloth, and ferns, green trimmings and a phonograph added to the attractiveness of the display.

The visitor was shown first the living hookworm under the microscope and then the two sources of human infection, polluted soil and vegetables. Two bottles of milk, one infected with typhoid bacilli and the other pure, were shown to demonstrate that there is no apparent difference caused by this dangerous contamination. The fact that both typhoid fever and hookworm disease are spread by the careless disposal of human excreta was forcibly explained, and then the sanitary privy that we were advocating was demonstrated. Infant welfare and malarial charts formed part of the exhibit. On leaving, the visitor was given literature and asked to register so that we might send him further information concerning the progress of the work. More than 8,000 visitors came into the booth. The register showed that these people came from seven different counties. Demands have since come to us for the same type of campaign in several of the neighboring counties.

During the state health officers' meeting at Jackson, a similar exhibit was demonstrated. Several new features were added, among them a miniature section of Lee County, showing the road signs, next to be described, and an educational feature illustrating the equipment which we take to our community meetings in the county. This exhibit received favorable comment from men prominent in health work throughout the United States, and has endeared us to the people of Lee County.

THE MILE POST SIGNS

A design for a mile post sign was prepared, such as the one in the illustration, with a top board for advertising the

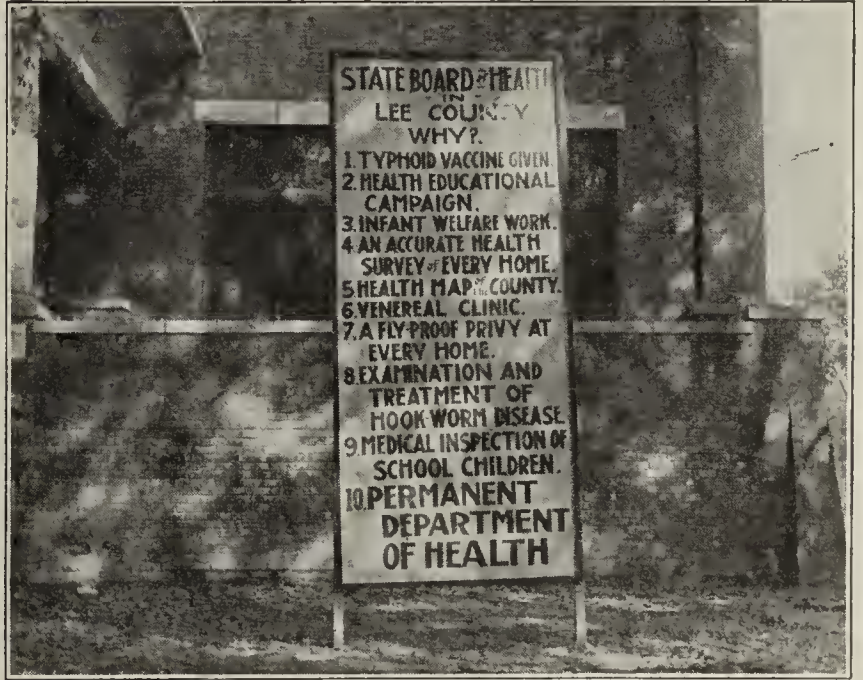
county as a model health county and giving the number of miles to the cities on that road, and featuring a health sentence. On the lower part of the sign there is space for two business advertisements. The design with specifications was submitted to various sign painters for bids, and the lowest bidder secured the contract. The plan was then placed before the business men with a price for advertisements such that the cost of the two would just cover the cost of the sign. They grasped the idea so eagerly that we soon had demands enough to place a sign on every mile of road in the county and to place a warning sign on both approaches to every dangerous turn. We were compelled to turn some advertisers away.

THE COUNTRY NEEDS YOU	KILL EVERY FLY
PRECAUTION PAYS	BUILD SANITARY PRIVIES
DON'T FLIRT WITH DEATH	POLLUTE NOT THE SOIL
ESTABLISH GOOD HABITS	FILTH, FLIES, FEVER
DON'T MORTGAGE YOUR LIFE	DEMAND CLEAN MILK
PREVENTION BEATS CURING	SAFETY IN SANITATION
PROLONG YOUR LIFE	WHY BE SICK?
AVOID CONTAGIOUS DISEASES	KEEP CLEAN
KEEP A LEVEL HEAD	DEMAND SANITARY SCHOOLS
COLDS ARE CONTAGIOUS	

A few of the sentences used on danger signs.

Once the idea and its significance were appreciated by the people of the county, we had no trouble at all in persuading the chamber of commerce to place an arch over each entrance to the county. On one side of the arch were the words "Welcome to Lee County, the model health county" and on the other "Come again to Lee County, the model health county." The chamber of commerce also agreed to place sixty signs at important cross roads to explain why the health campaign was in progress in the county.

To increase the public interest in these signs a contest was held to secure the best possible health sentences for



A sign at an important cross road.

the mile posts. The business men were approached and readily agreed to furnish the three necessary prizes. Sentences were received from men, women and children from one end of the county to the other. Incidentally, it may be of interest to note that the first prize was won by the daughter of the first man in the county to complete the needed sanitary improvements on his premises.

By means of these signs we have not only boosted county pride and spirit, aided visitors, and advertised our merchants,

but through the old familiar didactic method of repetition we have driven home to the people of the county the need for, and the methods of, preventing disease. The whole county looks on the signs as a county effort, and the health campaign as its own.

RESULTS OF PUBLICITY

In a county which was originally hostile to our work, with the exception of a few progressive citizens in the city of Tupelo, we have in three months been able to accomplish the following:

1. To make a health survey of 2,712 homes, learn the diseases with which they have been afflicted during the last five years, and locate each accurately on a health map of the county so that future work will be more easy.
2. To examine 8,907 people for hookworm and furnish treatment to each person found infected.
3. To construct 827 sanitary privies, which will minimize the spread of filth diseases.
4. To distribute more than 30,000 pieces of literature.
5. To vaccinate 200 people against typhoid.
6. To make 600 inspections of business houses.
7. To make complete physical examinations of 1,100 school-children.
8. To control an epidemic of scarlet fever.
9. To contribute to the county a vision of what may be accomplished by community effort.
10. To secure cooperation of the public such that a permanent department of health can and will be established next year.

CONCLUSIONS

1. Advertising is an American method and wins Americans.
2. Advertising is invaluable in rural public health work.
3. Carefully planned advertising can be carried on at practically no expense to the health officials.
4. Such methods produce the maximum results in securing the backing of business men.
5. Wise advertising educates the community along health lines.
6. Such advertising as we have described unifies a community and gives it an aggressive spirit.
7. It can be done.

AN EARLY VENTURE IN INTESTINAL SURGERY

The modern surgeon who is inclined to note with pride the achievements in his field perhaps does not realize that even some of its most technical developments were duplicated long ago. Frederick Smith, in his work 'The Early History of Veterinary Literature and Its British Development,' quotes a statement by Harward, made in 1673, concerning the repair of intestinal wounds:

"Then if there be any torn along the guts, or else jagged, that may not be stitched together for it will not grow, neither will that which is black, cold, and dead, in which case thou must do this. First, lay the two broken ends that should grow together the one a little over the other in your hand; then cut them both off at once with a pair of scissors, so that the new cut ends may be joined close together, but first cut the two broken ends off close to the mid-rise (mesentery) and cast them away, then with a fine needle and thread, or silk, stitch the two cut ends together so that they may gently meet and not be strained. Begin first to stitch at the mid-rise (mesentery) and round about the gut till you come to the same place again and then make fast your thread. But in this stitching remember this that as you must not draw your seam too hard for fear of crushing that tender skin, neither must you leave it too slack for fear the dung issue out, for if you miss either way you are sure to fail in your cure. When you have stitched the gut ends together with a fine and thick (close) seam and wiped away the blood and dirt clean, then anoint it with hog's grease and the juice of Comfrey mixed. This done put the guts into the belly and stitch up the breach, first the inner side (peritoneum) then the middle (muscles) and then dress with moulten butter

and stitch up the outermost skin as is taught before, and use the beast as in the former cure, only do this more, that is, give him the juice of Comfrey in strong ale or beer to drink, and if he dung and stink in two or three days, there is no doubt of the cure. But in both these cures be sure of good help and be quick at thy work and be careful withal."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December, 1919, 80, No. 6

- *Incidence of Malignancy in Diseases of Gallbladder. J. F. Erdmann, New York.—p. 618.
- *Control of Venereal Disease in Detention Home for Women in Times of War and Peace. P. Findley, Omaha.—p. 623.
- *Value of Detention as a Reconstruction Measure. C. C. Pierce, Washington, D. C.—p. 624.
- *Pioneering in Venereal Disease Control. A. J. McLaughlin. Sioux City, Ia.—p. 636.
- *Detention and Treatment of Infected Women as a Measure of Control of Venereal Disease in Extracantonment Zones. W. F. Draper, Richmond, Va.—p. 542.
- *Safety Factors in Team Work of Operator and Anesthetist. J. J. Buettner, Syracuse.—p. 646.
- *Some Adjuncts which Promote Efficiency in the Use of Local Anesthesia. R. E. Farr, Minneapolis.—p. 653.
- *Surgical Barrage. C. W. Moots and E. I. McKesson, Toledo, Ohio.—p. 661.
- *Advantages of Nitrous Oxid-Oxygen in Labor. C. E. Turner, Columbus, Ohio.—p. 670.
- Postoperative Analgesia. B. Van Hoosen, Chicago.—p. 677.
- *Prophylaxis of Gestation. A. B. Davis, New York.—p. 682.
- *Prenatal Care. S. J. Goodman, Columbus, Ohio.—p. 689.
- *Care of Bowels During Puerperal Period; Further Report. R. McPherson, New York.—p. 698.
- *Method of Placing Sutures in Immediate Repair of the Perineum. W. D. Porter, Cincinnati.—p. 701.
- *Median Episiotomy in Primiparous Labors. J. A. Harrar, New York.—p. 705.
- Problem of Hemorrhage in Obstetric Cases. A. H. Bill, Cleveland.—p. 708.
- *Inversion of Uterus. H. W. Yates, Detroit.—p. 712.
- *Cystic Ovary. F. Reder, St. Louis.—p. 719.

Malignancy in Diseases of the Gallbladder.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Control of Venereal Diseases.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Detention as a Reconstruction Measure.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Pioneering in Venereal Disease Control.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Venereal Diseases in Extracantonment Zones.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Team Work of Operator and Anesthetist.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Efficiency in Use of Local Anesthesia.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Surgical Barrage.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Advantages of Nitrous Oxid-Oxygen in Labor.—Having used this analgesic for some years, Turner offers five good reasons for its value: 1. The entire second stage is practically painless. 2. There is no exhaustion. 3. The postpartum psychoses are greatly lessened. 4. There are fewer lacerations of the mother's soft parts, especially of the perineum. 5. Healthy babies are delivered. Convalescence is rapid; this, of course, depends to some extent on the nature of the delivery. Involution takes place promptly, and the patient's recovery is uneventful. The function of the breasts is not disturbed by the use of gas-oxygen. Ordinarily the patient takes gas-oxygen very readily. The uterine contractions push the head farther and farther down into and through the pelvis, and it is finally born without much pain. In fact,

labor is in all respects normal. As a rule, the multipara, who has experienced the older methods of delivery, is better satisfied when delivered with the aid of gas-oxygen.

Prophylaxis of Gestation.—This paper was abstracted in *THE JOURNAL*, Oct. 25, 1919, p. 1307.

Prenatal Care.—This paper was abstracted in *THE JOURNAL*, Oct. 25, 1919, p. 1307.

Care of Bowels During Puerperal Period.—This paper was abstracted in *THE JOURNAL*, Oct. 18, 1919, p. 1239.

Method of Placing Sutures.—This paper was abstracted in *THE JOURNAL*, Oct. 18, 1919, p. 1239.

Median Episiotomy in Primiparous Labors.—This paper was abstracted in *THE JOURNAL*, Oct. 25, 1919, p. 1307.

Inversion of Uterus.—This paper was abstracted in *THE JOURNAL*, Oct. 25, 1919, p. 1307.

Cystic Ovary.—This paper was abstracted in *THE JOURNAL*, Oct. 25, 1919, p. 1307.

American Journal of Physiology, Baltimore

Dec. 1, 1919, 50, No. 3

*Respiratory Volumes of Men During Short Exposures to Constant Low Oxygen Tensions Attained by Rebreathing. M. M. Ellis, New York.—p. 267.

*Alveolar Air and Respiratory Volume at Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, New York.—p. 280.

Compensatory Reactions to Low Oxygen. H. W. Gregg, B. R. Lutz and E. C. Schneider, New York.—p. 302.

*Reactions of Cardiac and Respiratory Centers to Changes in Oxygen Tension. B. R. Lutz and E. C. Schneider, New York.—p. 327.

*Experimental Studies of Ureter; Cause of Ureteral Contractions. Y. Satani, Baltimore.—p. 242.

*Effects of Increasing Intracranial Pressure in Rabbits. L. M. Moore, Berkeley, Calif.—p. 352.

Distribution of Nonprotein Nitrogen in Cases of Anaphylaxis and Peptone Poisoning. K. Hisanobu, Tokyo, Japan.—p. 357.

Effect of Quinin on Nitrogen Content of Egg Albumen of Ring Doves. E. H. Hebre and O. Riddle, Cold Spring Harbor, L. I.—p. 364.

Nose Licking Reflex and its Inhibition. S. J. Meltzer and T. S. Githens, New York.—p. 377.

*Infra-Red Radiant Energy and the Eye. M. Luckiesh, Cleveland.—p. 383.

*Activity in Endocrine Glands; V. Isolated Heart as Indicator of Suprarenal Secretion. W. B. Cannon, Boston.—p. 399.

Effect of Work and Heat on Hydrogen Ion Concentration of Sweat. G. A. Talbert, Baltimore.—p. 433.

Effect of Physical Training and Practice on Pulse Rate and Blood Pressures During Activity and During Rest. P. M. Dawson, Madison, Wis.—p. 443.

Effect of Low Oxygen on Respiratory Volume.—The respiratory volumes of twenty-nine men during the reduction of oxygen tension by rebreathing and during short exposures to constant low oxygen tension following the period of rebreathing were studied by Ellis in connection with the sea level respiratory volumes. An increase in the respiratory volume was noted at the end of the fifth minute of rebreathing, at an average of 18.1 per cent. oxygen (approximately equivalent to 4,000 feet altitude) in twenty-three of the twenty-nine subjects. The respiratory volume during the first ten minutes of the exposure to constant low oxygen tension, varying from 5,000 to 21,000 feet equivalent altitude, was greater than the sea level volume in thirty-two of the thirty-six subjects. The respiratory volume of seventeen of the thirty-six subjects fell during the first ten minutes of the exposure to constant low oxygen tension to a volume lower than that moved during the reduction of oxygen by rebreathing although still greater than the sea level respiratory volume. This fall in respiratory volume during the first ten minutes of exposure to constant low oxygen tensions was correlated apparently with compensations to low oxygen advantageous to the subject. The return to sea level oxygen tension was followed by a prompt return to the sea level respiratory volume.

Alveolar Air and Respiratory Volume at Low Oxygen.—Twenty-four men were taken to 352 mm. pressure in a low pressure chamber at a rate equivalent to an ascent of 1,000 feet per minute. In these cases the average alveolar oxygen tension fell 66 per cent. and the alveolar carbon dioxid fell 24 per cent. The average carbon dioxid tension was definitely lowered at 656 mm. (4,000 feet) which indicates that the onset of increased breathing had occurred. The lowest

carbon dioxid tension occurred about five minutes after 380 mm. was reached, when the reduction was equivalent to an ascent of 1,000 feet per minute. Both oxygen and carbon dioxid alveolar tensions responded quickly to rapid successive reductions of barometric pressure to 428 mm.

Reaction of Medullary Centers to Low Oxygen.—According to Lutz and Schneider the cardiac and respiratory medullary centers in man respond quickly to changes in the partial pressure of oxygen. A decrease in oxygen stimulates while an increase in oxygen inhibits the action of these centers.

Experimental Studies on Ureter Contractions.—The experiments reported on by Satani showed that distention of the ureter lumen causes the development of contractions, which increase to a certain limit with an increase in pressure. The chemical composition of the kidney secretion may also effect the development of ureteral contractions by means of a reflex action. The viscosity of the fluids which pass through the ureter lumen affects the contractions only to the slightest degree. Solid bodies, such as a calculus, however, produce vigorous tonic contractions. Satani concludes that the peristalsis of the ureter should be referred not to one, but to several factors, which act mainly in cooperation, but which vary in value under various conditions.

Increase in Intracranial Pressure in Rabbits.—Increasing the intracranial pressure in rabbits 20 mm. of mercury (272 mm. of water) or more, Moore says, results in accelerated respiratory movements followed by their cessation, slow heart beat, vasoconstriction, dilatation of the pupils, spasms of asphyxiation, and finally death within from one to three minutes unless artificial respiration is used or the pressure is released. Moderate degrees of pressure, 15 mm. of mercury (200 mm. of water) or less, cause increase in the rate of heart beat, vasoconstriction and a rise in body temperature. The pressure symptoms and death following "heat puncture" operations were found only when an opening was left in the cranium; and, by comparison with the symptoms attending artificially increased intracranial pressure and clinical cases of brain lesions, seem to be due to the same cause. The cause of death, and the preceding symptoms, when the intracranial pressure is raised, appears to be stimulation followed by paralysis of the principal bulbar centers.

Infra-Red Radiant Energy and Eye.—The work reported on by Luckiesh was prompted by the recently developed opinion that eye glasses, especially in the industries, should not transmit infra-red radiation. The data presented in this paper do not directly reach the root of the problem but they are of considerable importance. Energy quantities and densities in the eye mediums are established and should aid the physiologist who is interested in the question. This paper is confined purely to the physical aspects of spectral energy distribution in illuminants, of the absorption by the eye mediums, of optical laws, of luminous efficiency of illuminants, etc.

Action of Suprarenal Secretion.—Results reported by Cannon present the first indication that under quiet, peaceful conditions there is no suprarenal secretion or a secretion so slight as not to affect the denervated heart, an extremely sensitive indicator. These observations prove that suprarenal secretion is not a necessity, at least in times of serene existence. Adrenin is secreted, however, in times of great emotional stress and under circumstances which cause pain or asphyxia. The function of the suprarenal medulla is to be looked for under conditions which rouse it to action. Excitement, pain or asphyxia are self-preservation. Under such circumstances, as has been emphasized in the presentation of the emergency theory, the operation of the sympathetic division of the autonomic system together with the aid which adrenin affords will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. It appears, therefore, that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

American Journal of Roentgenology, New York

November, 1919, 6, No. 11

- Roentgen-Ray Study of Abdominal Organs Following Oxygen Inflation of Peritoneal Cavity. W. H. Stewart and A. Stein, New York.—p. 533.
- Nontraumatic Epiphyseal Separations. W. A. Evans, Detroit.—p. 543.
- Coccidoidal Granuloma. W. B. Bowman, Los Angeles.—p. 547.
- Two Cases of Xeroderma Pigmentosum with Malignancy of Eyeball Successfully Treated by Roentgen Ray. G. W. Grier, Pittsburgh.—p. 552.
- Open Method of Surgery in Deep-Seated Recurrent Cancer Preparatory to Roentgen and Radium Therapy. E. G. Beck, Chicago.—p. 559.
- Relative Absorption of Rays by Skin, Fat and Muscle, as Compared with Various Thicknesses of Aluminum. G. Warner, Chicago.—p. 559.
- Technic of Radiotherapy. P. Eisen, Chicago.—p. 559.
- Late Results of War Injuries to Chest. H. J. Walton, Baltimore.—p. 568.
- Analysis of 1,300 Cases Referred for Gastro-Intestinal Study, with Special Reference to the Importance of Chest Examination of Such Cases. T. A. Groover and A. C. Christie, Washington, D. C.—p. 571.
- Roentgenographic Findings in a Series of Chests Examined at a Base Hospital in France. F. F. Borzell, Philadelphia.—p. 573.
- Malignant Disease of Lungs, Its Early Recognition and Progressive Development, as Studied by Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 575.

Boston Medical and Surgical Journal

Jan. 15, 1920, 182, No. 3

- Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus. J. R. Goffe, New York.—p. 53.
- *Result of Treatment of Neurosyphilis (General Paresis and Cerebrospinal Syphilis).—H. C. Solomon, Boston.—p. 60.
- Potency of some French Digitalis Preparations. S. A. Levine, Boston.—p. 64.
- Hysteria. D. Nathan, Norristown, Pa.—p. 66.
- Acute Nephritis by Absorption of Household Disinfectants (Credin). H. A. Jones, Howard, R. I.—p. 68.

Result of Treatment of Neurosyphilis.—A review four years or more after the dismissal from the hospital of ten cases of neurosyphilis who were reported as aided by anti-syphilitic treatment is made by Solomon. Nine of these patients were committed as insane, the remaining case was diagnosed general paralysis but not necessarily committable. Eight cases were diagnosed general paralysis, two as cerebrospinal syphilis. The diagnosis of cerebrospinal syphilis was changed from general paralysis in one of these two cases only because the case cleared up under antispecific treatment. The mental symptoms were those of paresis. Of the eight cases diagnosed general paralysis, five patients are now living at home. Three are apparently entirely well; two, while not well, are able to care for themselves and live a normal life in the community. Two are dead and one is in a hospital. One of the two who died had a fair remission with economic efficiency for eighteen months and had all laboratory reactions negative at one time. The one who was in a hospital had a remission of three years' duration. Two cases were diagnosed cerebrospinal syphilis (nonparetic), but with marked mental symptoms. One patient left the hospital apparently entirely normal and with negative laboratory signs. He has been lost from view. The other is now serologically negative and mentally normal after four years. Of eight cases diagnosed general paralysis, three patients are apparently entirely well after four years; two are well enough to live outside and care for themselves; one had a remission of more than three years' duration, and is now in a hospital; two are dead, having had a remission of eighteen months each. Of two cases diagnosed cerebrospinal syphilis with mental symptoms, one patient is lost from observation, the other is mentally normal and serologically negative. This report leads the author to feel that it is possible to render help in a portion of cases of general paralysis or cerebrospinal syphilis with mental symptoms, and that intensive, systematic treatment will change the prognosis of general paralysis.

Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1919, 6, No. 6

- The Qualified Nurse. J. E. Boyd, Jacksonville.—p. 113.
- Treatment of Ectopic Gestation. T. Truelsen, Tampa.—p. 116.
- Some Differences in Therapeutic Response Between Caucasian and Atro-American. G. M. Niles, Atlanta.—p. 118.

Journal of Orthopedic Surgery, Lincoln, Neb.

January, 1920, 2, No. 1

- *Anatomy of Snapping Hip. F. W. Jones, London.—p. 1.
- Roentgenograms of Case of Tuberculosis of One Hip Associated with Congenital Dislocation of Other Hip. A. R. Jones, London.—p. 4.
- *Stripping of Os Calcis. A. Steindler, Iowa City, Iowa.—p. 8.
- Treatment of Fractures of Femur from an Orthopedic Point of View. J. P. Jones, Camden, Ala.—p. 13.
- Time Element in Reconstructive Surgery. R. W. Johnson, Jr., Baltimore.—p. 33.

Anatomy of Snapping Hip.—A clinical study of two cases convinced Jones that the structure which infringes on the trochanter and causes the snap is the tendon developed on the deep surface of the gluteus maximus muscle. This tendon constitutes the insertion of the gluteus maximus to the gluteal ridge of the femur and it was apparent that in the two cases studied the tendon was in an abnormal state of development. That the tendon was the offending structure in these two cases was confirmed by the fact that stitching it down to the whole length of the great trochanter put a stop to the production of the snap.

Stripping of Os Calcis.—The operation which Steindler first described in 1917 consists mainly in the subperiosteal stripping of the muscular attachments to the anterior surface of the os calcis. The operation does not intend to do more than to free a muscle bound claw foot or hollow foot from the strain of contracted musculature of the sole of the foot. Any deformity arising from abnormalities of the skeleton must be taken care of by additional bone operation. In some cases this operation had to be accompanied by osteotomy of the tarsus in order to overcome the cavus deformity of the skeleton. In a series of other cases dropping of the first metatarsal and retraction of the big toe was overcome by Sherman's procedure, that is, by severing the extensor of the big toe beyond the metacarpal phalangeal joint and fastening the tendon to a point proximal to the head of the first metatarsal.

Medical Record, New York

Dec. 6, 1919, 96, No. 23

- Teaching Function of Hospital, with Especial Reference to Gynecology. G. G. Ward, Jr., New York.—p. 909.
- Internal Secretions. E. D. Friedman, New York.—p. 916.
- *Physical Examination of Applicants for Industrial Positions; with Results of Three Hundred Examinations. C. Scheffel, Brookline, Mass.—p. 925.
- Sugar Treatment of Tuberculosis. Report of Cases. A. Sterling, Philadelphia.—p. 927.
- Forces of Nature. B. Lemchen, Chicago.—p. 928.

Physical Examination of Applicants for Industrial Positions.—Of 300 applicants examined by Scheffel fifty-one presented gross defects. Among these were: enlarged inguinal glands, 13 cases; heart murmurs, 4 cases; ankylosed finger joints, 5 cases; partially amputated fingers, 8 cases; destroyed tendon function, 3 cases; defective vision, 11 cases. In addition to these defects there were thirty-three applicants who had been in this country from four to eleven years who could not read the English alphabet to have their eyes tested by the ordinary Snellen's test type. The scope of these examinations extended from head to foot in a general way, but record was kept only of those defects related to the performance of the duty required of the applicant in case he was accepted for employment. The mentality of all applicants was carefully surveyed with the view of eliminating feeble-minded, imbecile and degenerate types. None was found in this series of examinations.

Dec. 13, 1919, 96, No. 24

- Special Factors in Management Favoring Normal Development of Child. H. L. K. Shaw, Albany.—p. 951.
- Respiratory Tract as a Portal of Entry in Infectious Diseases. I. W. Voorhees, New York.—p. 956.
- Malingering in Relation to War Neuropsychiatric Conditions, Especially Hysteria. J. F. W. Meagher, Brooklyn.—p. 963.
- *Serum Treatment of Epidemic Poliomyelitis Occurring in Dubuque, Iowa, During Summer of 1918. J. J. Rowan, Jr., Dubuque, Ia.—p. 972.
- Results of Focal Infections as Seen in Ophthalmology and Otolaryngology. B. D. Ravdin, Evansville, Ind.—p. 975.

Dec. 20, 1919, **96**, No. 25

- Theory and Practice of Proteal Therapy. H. S. Williams, New York.—p. 997.
 "Group" Medicine—The Medicine of the Future. J. R. Pennington, Chicago.—p. 1010.
 Eye and Ear Symptoms in Basal Cranial Injuries. L. D. Brose, Evansville.—p. 1012.
 Modern Treatment of Tuberculosis. R. C. Kirkwood, Albuquerque.—p. 1015.
 Modern Urologic Advances and Their Effects on Renal Surgery. A. G. Rytina, Baltimore.—p. 1018.

Serum Treatment of Epidemic Poliomyelitis.—Among the eighty-five cases of epidemic poliomyelitis which occurred in Dubuque, ten patients died, a mortality of 12 per cent. Seventeen were not treated with Rosenow's serum; of these eight died, a mortality of 47 per cent. Sixty-eight patients were treated with the serum, and of these two died, a mortality of 3 per cent. In the two fatal cases conditions were such that curative effects of the serum could not be expected. The ages of the patients ranged from 2 weeks to 18 years. The average age of the untreated group was 4.8 years, and the average age of those treated was 4.7 years. The great majority of patients in each group were less than 6 years of age. The disease was about evenly distributed between boys and girls. There was no lull in the epidemic between the treated and untreated groups. The crest of the wave of the epidemic occurred seven days after the serum treatment was begun. There was no difference in the severity of the early symptoms in the two groups of cases. The differences in mortality and incapacity would seem, therefore, in Rowan's opinion to be attributable to the good effects of the serum.

Military Surgeon, Washington, D. C.

December, 1919, **45**, No. 6

- Early Experience in the War. J. A. Blake, U. S. Army.—p. 626.
 Some Early Problems of Medical Department, A. E. F. S. H. Wadhams and A. D. Tuttle, U. S. Army.—p. 636.
 Importance of Physical Therapy in Military and Civil Practice. W. S. Bainbridge, U. S. N. R. F.—p. 663.
 Army Medical Museum. C. F. Craig, U. S. Army.—p. 679.
 Varicocele as Applied to Men in Navy. P. J. Reel, U. S. N. R. F.—p. 690.
 Pathologic Service of the A. E. F. L. B. Wilson, Rochester, Minn.—p. 694.
 Malingering. J. Catton, San Francisco.—p. 706.

Modern Hospital, Chicago

December, 1919, **13**, No. 6

- How Cambridge City Hospital Overcame Financial Handicap. J. J. Weber, Chicago.—p. 452.
 Some Small Communities and What Their Hospitals Mean to Them. M. K. Chapin, Chicago.—p. 455.
 Public Hospital Planned to Minimize Depreciation. A. S. Kendall, Boston.—p. 461.
 Management of Contagious Disease Hospitals. D. L. Richardson, Providence.—p. 469.
 Bringing the Christmas Spirit into the Hospital. H. A. Leonard, New York.—p. 473.
 Beautiful Music Brightens Christmas in the Hospital. D. D. Lash.—p. 480.
 Soldiers in French Hospital Celebrate Peace Christmas. M. J. Robinson, Dallas, Texas.—p. 491.

Northwest Medicine, Seattle, Wash.

December, 1919, **18**, No. 12

- Standard British Method of Treating Fractures of Femur at Close of War. F. J. Fassett, Seattle.—p. 255.
 Orthopedic Surgery in American and British Hospitals. D. K. Allen, Salt Lake City.—p. 258.
 Surgical Injuries of Scalp, Skull and Brain. J. L. Stewart, Boise, Ida.—p. 260.
 Injuries of Knee Joint. M. T. Smith, Wallace, Ida.—p. 263.
 Pott's Fractures. J. W. Mowell, Olympia, Wash.—p. 265.
 Industrial Injuries; Prevention of Loss and Restoration of Function. A. Gottlieb, San Francisco.—p. 267.
 Osteomyelitis and Its Classification Roentgenographically. H. B. Thompson, Seattle.—p. 270.

Philippine Journal of Science, Manila

May, 1919, **14**, No. 5

- *Bacteriologic Phases of Cholera Carrier Problem. J. A. Johnston, Manila.—p. 459.
 Philippine Raw Materials for Glass Making. T. Dar Juan and V. Elicano, Manila.—p. 465.

- *Cystolithiasis Among Filipinos in Association with Dietetic Deficiency. R. G. Padua Manila.—p. 481.
 Growth of Hevea Brasiliensis in Philippine Islands. H. S. Yates, Manila.—p. 501.
 Biologic and Systematic Study of Philippine Plant Galls. L. B. Uichanco, Los Banos.—p. 527.

Cholera Carrier Problem.—The researches of Schöbl and of Panganiban on cholera carriers in guinea-pigs have shown that food plays an important rôle in the appearance and the disappearance of the vibrios in the feces. The normal period for recovery of the cholera vibrios from artificially infected guinea-pigs has been definitely established to be approximately fourteen days, after which time they can no longer be found. In Bilibid prison, the cholera carriers were given hexamethylenamin and, following Schöbl's experiments with ox bile in guinea-pigs, 0.65 c.c. of ox bile, three times a day, for two days; after an interval of five days the treatment was repeated. Those persons negative after the treatment were released from quarantine. Inspissated beef bile was used. It was not supposed that the bile would cure the carrier condition, but that it would cause more vibrios to enter the intestinal tract from the gallbladder.

Cystolithiasis with Dietetic Deficiency.—The results of Padua's investigation show that a relation apparently exists between the general dietetic inadequacy and deficiency among Filipinos and the incidence of phosphatic calculi, in contrast with the reported predominance of uric acid and urate calculi in Europe and in the United States. Of ten cases of cystolithiasis which he particularly studied since this investigation was undertaken, nine patients not only gave a history of having had beriberi, but exhibited actual signs referable to the disease. Although the clinical data of all but two of the other forty-eight cases are, as a whole, obscure with respect to the history of nutritional disease, still they indicate that the majority of the patients were undernourished and underdeveloped.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1919, **24**, No. 233

- Special Tube Stand for Rapid Roentgen-Ray Stereoscopic Work. C. E. Holland.—p. 218.
 *An Inherited Abnormality. C. F. Oddie.—p. 227.
 *Unusual Fracture of Os Calcis. C. J. Glasson.—p. 228.
 Detection of a Difficult Foreign Body. A. Marsh.—p. 229.
 Simultaneous Fluoroscopy in Two Planes. H. C. Gage.—p. 230.

An Inherited Abnormality.—Oddie's patient, a boy aged 14 years, had one-jointed fingers on both hands. His mother had similar hands, and four of her nine children were similarly affected, the other five being normal.

Unusual Fracture of Os Calcis.—Glasson's patient had a fracture of the upper and posterior surface of the os calcis with displacement of the fragment, the forward end to the inner side. There was a transverse oblique fracture from the anterior portion to just in front of the posterior third of the upper surface, with dislocation forward of the lower segment. The tendo Achilles was not broken through, though some strands attached to the upper and posterior point of the os calcis were broken, lifting the fractured piece upward.

British Medical Journal, London

Dec. 6, 1919, **2**, No. 3075

- Surgical Tradition. Historical Review. J. Tweedy.—p. 731.
 Fracture Dislocations of Ankle. Pott's and Dupuytren's Fractures. R. P. Rowlands.—p. 735.
 *Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 737.
 *Mumps in Adults. G. MacLeod.—p. 742.

Normal and Morbid Conditions of Testes.—Mott examined postmortem an emulsion of the brains of a successive series of 100 cases of general paralysis of the insane by dark-ground illumination, and found the spirochete present in 66 per cent. His assistant, Mr. Gcary, examined by dark-

ground illumination the seminal fluid obtained postmortem from the vesiculæ seminales of fifty cases of general paralysis, also an emulsion of the testicles; spirochetes were not once seen. This result, Mott says, indicated that the seminal fluid of a paralytic is, in all probability, noninfective at the time he is suffering with this disease. The family history of fifty-four male tabetic or taboparalytic patients showed that they had 151 children alive, seventy-five who were born alive but died in early infancy, and fifty-two born dead or miscarriages. This offered a striking contrast to the family history of twenty-five female tabetic or taboparalytic patients, ten of whom were sterile; the remaining fifteen had ten children alive, ten who were born alive but died in infancy, and fifty-one miscarriages or stillbirths. In the latter case both father and mother were syphilitic, and in the former the father in most instances married when the spirochete was no longer circulating in the lymph stream of the body, but was confined to the specially closed lymphatic system of the brain and spinal cord, the periadventitial sheath of the vessels and perioneuronal spaces which contain the cerebrospinal fluid. Mott also makes a detailed report of the results of the examination of the development of the testis from birth to puberty; normal spermatogenesis in cases of death from shock caused by severe injuries; the testes of a large number of general paralytics, of twenty-two cases of dementia praecox and of six cases of imbecility and idiocy.

Mumps in Adults.—Among the 694 cases of mumps in adults, analyzed by Macleod, orchitis has been the most frequent complication occurring in 140, or 20 per cent., of the cases. Relapses were met with in seventeen cases. All the above cases were in adult males from 18 to 40 years of age; seventeen were second attacks and one man claimed to have celebrated his third attack.

Dec. 20, 1919, 2, No. 3077

Evolution of the Surgeon and His Training. W. T. Thomas.—p. 803.

*Chronic Intestinal Stasis in Children. G. Taunton.—p. 806.

Health Resorts for Diagnosis and Treatment of Chronic and Functional Diseases. E. P. Weber.—p. 809.

Tick Fever in Palestine. F. D. Nicholson.—p. 811

*Erythema Nodosum and Tuberculosis. E. Ward.—p. 811.

Chronic Intestinal Stasis in Children.—In discussing the treatment of this condition, Taunton says, that in children prevention should be the first aim. The maintenance of the correct posture comes before all else. Should there be at any time from any cause a tendency for the symmetrical posture of rest to be assumed it must be checked. Rest, physical exercises, tonics, change of air, must all have their appropriate use. When stasis already exists, and the symptoms of autointoxication are recognized, should careful examination point to a congenital cause, such as an appendical control, an operation is called for. There should be no delay; the earlier it is done the less will development be interfered with by the toxemia, the less risk will there be of an acute attack of appendicitis intervening prior to the operation, the more easy will it be to break the habit of absorbing poison which the bowel has acquired, and the fewer adventitious bands and membranes will have formed in conjunction with this form of control. In the acquired form operative interference should be avoided, if possible, but each case must be judged on its merits. Nasal obstruction must be dealt with, and a free airway established through the nose. Liquid petrolatum should be given before each meal to act as a lubricant and render the passage of the food more easy. Opening medicine, in the form of aperients, purgatives, cathartics, etc., should be avoided, except in the form of an occasional dose for some special reason. Agar-agar mixed with semisolid food is useful when the point of stasis originates at the sigmoid, and is most marked there. An abdominal support which keeps out of the pelvis the sagged portions of the bowel in which stasis exists is of the greatest use. An hour's rest in the recumbent position in the middle of the day will often help in a wonderful manner. Should these means fail or not suffice after due trial, operative measures will be necessary.

However successfully the bowel has been freed from all controls, means must be taken to prevent the original cause or causes from becoming operative again. Attention must be paid to the nonoperative treatment where indicated, and always liquid petrolatum should be given for from six months to a year. Those portions of the bowel where stasis existed will tolerate delay from custom, and, having acquired the habit of absorption, both the custom and the habit have to be broken; in the same way, after the enucleation of tonsils and removal of adenoids, it is necessary to break the habit of mouth breathing, and unless that is done nasal breathing will not be resumed although the airway is patent.

Erythema Nodosum and Tuberculosis.—Although Ward does not suggest that tuberculosis is the only cause of erythema nodosum, he points out that a similar cutaneous manifestation may be due to many different poisons, one of which is that of tuberculosis. Moreover, the constitutional peculiarity which gives rise to this skin reaction seems to be inherited, as are other peculiarities—such, for instance, as the well known disposition to epidermolysis bullosa after slight injuries. Out of 4,000 cases of tuberculosis and contacts under annual observation, Ward has not yet noticed any other skin condition (apart from the well recognized tuberculides) which is definitely connected with tuberculosis. It has been stated that lupus erythematosus is attributable to tuberculosis, and Ward has seen a few cases of this disease, but not more than would be accounted for by coincidence; not more, for instance, than the cases of lichen ruber planus, which no one suggests is due to tuberculosis.

Dec. 27, 1919, 2, No. 3078

Some War Diseases. H. Davy.—p. 837.

Mitral Stenosis in Soldiers. T. F. Cotton.—p. 840.

*Apparent Spontaneous Rupture of Normal Spleen. W. W. Shorten.—p. 844.

*Relation of Pfeiffer's Bacillus to Influenza. S. Wyard.—p. 845.

Pregnancy Complicated by Volvulus of Pelvic Colon. V. Bonney and E. C. Bridges.—p. 846.

Apparent Spontaneous Rupture of Spleen.—Shorten reports the case of a soldier, aged 43 years, who while walking was seized with pain in the region of the umbilicus, so severe that it caused him to fall to the ground. He vomited, and the pain subsided sufficiently to allow him to walk to his billet. He endeavored to carry on his duties, which were light, but the pain became worse. His medical officer came to the conclusion he had colic and gave him a dose of castor oil, which he immediately vomited. As the pain was getting steadily worse he was sent to the hospital. The diagnosis of rupture of an abdominal viscus was based on the marked abdominal tenderness and the boardlike rigidity of the abdominal muscles and free fluid in the abdominal cavity, but there were no localizing symptoms. The abdomen was opened in the middle line above the umbilicus; a large quantity of fluid and clotted blood escaped on opening the peritoneum. The liver was found normal, but on passing the hand into the splenic region a large quantity of clot was displaced and free bleeding was found to be going on. A large rupture in the spleen was felt. When the splenic vessels were grasped, the bleeding stopped. The splenic vessels were isolated and ligatured with linen thread and the spleen was removed. The wound was sutured with linen thread. The spleen was normal in size and weight; the tear, which extended from the convex surface to the hilum, divided the organ into two equal portions. There was no stripping of the capsule to suggest that at first there had been subcapsular hemorrhage, later tearing through the capsule. It was clear that the tear in the spleen and capsule were present from the first, allowing of free intra-abdominal hemorrhage. Microscopic examination showed the spleen to be normal. The patient recovered. Four weeks after the operation he was apparently in the best of health.

Relation of Pfeiffer's Bacillus to Influenza.—No agglutination of either one of three typical strains of Pfeiffer's bacillus was obtained by Wyard with serums removed from fifty-nine cases of influenza, whether those cases were or were not complicated by bronchopneumonia, and whether they

were in the first, second, third, fourth or fifth week of the disease. Attempts were made to discover antibodies by means of complement fixation tests, but in no case was the complement fixed.

Glasgow Medical Journal

December, 1919, 10, No. 6

Sores, Analogous to Veld Sores and Barcoo Rot, Appearing Among Soldiers Working in Blue Clay and In Chalk. D. D. Logan.—p. 257.
To be continued.

With the 1/1st Lowland Field Ambulance in Gallipoli. G. H. Edington.—p. 262.

Lancet, London

Dec. 20, 1919, 2, No. 5025

Evolution of Disease. W. A. Lane.—p. 1117.

Psychotherapy in Ordinary Practice. W. A. Potts.—p. 1123.

*Hysterical Sleeping Attacks. H. Carlill.—p. 1128.

*Occasional Manifestations of Malaria. D. W. C. Jones.—p. 1130.

*Treatment of Recurrent Malaria. H. Fraser.—p. 1134.

*Congenital Dislocation of Hip: Method of Dealing with Refractory Cases. A. H. Tubby.—p. 1135.

Hysterical Sleeping Attacks.—Carlill reports the case of a young man, aged 19 years, who, since early childhood, had been liable to go off to sleep at any time and without any feeling of fatigue. He had never been a week free from this. Except for enlargement of one of the turbinate bones, examination revealed no evidence of organic disease in any system. The boy's physical health was good. He was not addicted to bad habits. The Wassermann reaction was negative both in serum and in cerebrospinal fluid, and the fluid was in all other respects also perfectly normal. Carlill was confident that the attacks were hysterical, due to his own suggestion; in other words, the patient hypnotized himself. His head was roentgenographed and he was told that the real cause of his illness had been discovered, and that an operation for the removal of a piece of thickened bone was necessary in order to effect a complete and permanent cure. Carlill trephined the skull in the right parietal region and removed the disk of bone. The dura mater was healthy and was left alone. The bone was normal. Directly the patient regained consciousness, he was shown the piece of bone and given it to feel, and he was told how successful the operation had been. From the date of the operation his sleeping attacks ceased entirely and he admitted that he was absolutely cured. He did not relapse. The patient has remained perfectly well since his operation eighteen months ago.

Occasional Manifestation of Malaria.—Twenty cases are reported by Jones to demonstrate that malaria has a place, though a small one, among the hemorrhagic diseases. Instances are given of bleeding from the mucous membranes of the alimentary, respiratory and urinary tracts, into a solid organ like the spleen, and into the eye. Two cases of arthritis were observed in this series, one with effusion into a knee joint. Jones insists that hemorrhage of any kind occurring in a malarial subject should be regarded as an indication for treatment with quinin. Malarial subjects should be advised to take a calomel purge followed by quinin by the mouth immediately on feeling the slightest headache or malaise; by this method it appears that recurrences can frequently be aborted. To assist clinical diagnosis of the infection, the presence of areas of hyperalgesia over the distribution of the eighth cervical and first dorsal, the seventh dorsal and the lumbar segments, or some of these, may be taken as a good rough indication that the patient is suffering from malaria, provided that trench fever infection can be excluded.

Treatment of Recurrent Malaria.—Fraser claims that no man can have a relapse of malaria during the period that he swallows 15 grains of quinin sulphate in solution once daily. Smaller doses are not sufficient, and it is better to give the amount in one dose rather than in divided doses. Fifteen grains of quinin taken daily can do no harm to any man infected with malaria parasites. If a relapse occurs, the man is either not swallowing or not absorbing the quinin. It has not been determined how long the continuation of treatment is necessary. It was not found practicable to

continue the treatment beyond twenty-eight days in hospitals or concentration camps for malaria. It is advisable to continue the treatment for as long as possible. In the absence of treatment or in cases inadequately treated relapses are observed. In these cases, 15 grains of quinin sulphate in solution should be given twice daily for five days and thereafter 15 grains once daily. The first dose should be given when the temperature is falling—that is, in the sweating stage. No patient suffering from a relapse without complications, who is treated in this way, will show a rise of temperature subsequent to the fourth day. No importance is attached by Fraser to the use of tonics, such as iron and arsenic.

Congenital Dislocation of Hip.—Tubby claims that in congenital dislocation of the hip the ilio-psoas muscles and tendons undergo important changes in direction. As the combined muscle tendon crosses the brim of the pelvis, it is displaced outward and it passes closely beneath the anterior inferior spine. It then winds outward and backward to its insertion, compressing the capsule about its middle, and this is responsible for the hour-glass shape of that structure, so often seen in cases of congenital dislocation in children more than 4 years of age. As age advances, the ilio-psoas muscle and tendon become more hypertrophied and thick; they compress the capsule of the hip-joint more closely about its middle, and the latter becomes not only hour-glass shaped, but its anterior wall is so folded inward and backward as to obscure the entrance to the acetabulum like a curtain. This constriction of the middle of the capsule is by no means an insuperable obstacle to reduction in early life. As time passes, however, the narrowing or hour-glass contraction of the capsule increases. By continuous narrowing, the aperture leading from the outer portion of the distended capsule into the true acetabular cavity may be reduced to a small button-hole. The cavity is thus obliterated, its site being covered over by the outspread attachments of the anterior layer of the capsular ligament. In these cases Tubby makes a crucial incision of the capsule and divides the constriction of the capsule and the ilio-psoas tendon. With a little traction on the limb, the caput femoris slips easily into its socket. The crucial incision into the capsule is then closed by suture, and the limb is put up in plaster in the fully abducted position. The result has been entirely successful. Tubby has been able to advance the age for operative reduction of the hip from 7 years onward, until the latest successful case occurred in a girl, aged 15 years.

Dec. 27, 1919, 2, No. 5026

Mental Personality: Its Integration and Disintegration. H. Campbell.—p. 1181.

*Primary Hydatid Disease of Brain. N. B. B. Fleming and G. W. Bury.—p. 1186.

Epidemic Influenza in Australia. H. L. Kesteven.—p. 1189.

*Boiled Vegetables for Use of Diabetics. P. J. Cammidge.—p. 1192.

*Treatment of Tuberculous Abscess by Aspiration. Z. P. Fernandez.—p. 1193.

Removal of Large Cervical Tumors Occupying Vagina By Laparotomy. J. F. Peart.—p. 1194.

*Carcinoma of Ovary In a Girl Aged Nine Years. H. M. Gerson.—p. 1195.

Suppurating Hydatid Cyst of Liver. R. L. Ley.—p. 1195.

Primary Hydatid Disease of Brain.—Fleming and Bury make a detailed report of a case of this kind occurring in a soldier. A diagnosis of cerebral tumor was made. As the operation was about to commence, breathing ceased, but the pulse and all reflexes remaining normal, artificial respiration was resorted to, and a left subtemporal decompression was performed. The patient did not take a normal breath for four and one-half hours and without the administration of any anesthetic whatsoever. The condition of increased intracranial pressure had existed for a considerable time before the operation, and the anesthetic had further increased the pressure and so paralyzed the respiratory center beyond recovery. The patient died. At the necropsy, on slicing the left cerebral hemisphere, a unilocular cyst, equal in size to a large orange, escaped from the ventricle. The cyst had apparently no attachments to anything in the ventricle; the appearance of the cyst was typical of a hydatid. The cyst

was found to have bulged into and greatly distended the left ventricle, causing pressure on the surrounding parts, particularly the internal capsule, lenticular nucleus, and optic thalamus. It is the authors' opinion that the parasite had come via the choroid plexus. On dissecting the right hemisphere three calcified nodules one-sixth of an inch in diameter were found embedded in the middle frontal convolution. Nothing else abnormal could be found in the brain. The fluid in the cyst and the fluid obtained from aspirations of the left ventricle were found to contain hooklets and scolices, proving it to be due to *Tenia echinococcus*. The calcified nodules were examined, and a report of "amorphous calcified material" was returned. In spite of this, however, the authors submit that they were calcified nodules of *Tenia cysticercus*.

Boiled Vegetables for Diabetics.—Very little experimental work appears to have been done on the composition of the material resulting from the treatment of vegetables with three changes of boiling water. It has been generally assumed that any vegetable of low carbohydrate value is rendered practically carbohydrate-free, while vegetables of high carbohydrate content, and particularly root vegetables, should not be used. With a view to throwing some light on the question and discovering which are the best vegetables to employ for the purpose, a number of experiments were carried out by Cammidge. From these experiments it is clear that three boilings are not sufficient to render all vegetables carbohydrate-free, and that the amount of carbohydrate originally present is no guide in selecting those best suited for the preparation of a starch and sugar-free product such as may sometimes prove useful instead of actual fasting for children or persons who have severe cases of diabetes. It would seem that celery, rhubarb, spinach, sliced turnip and sliced carrot can probably be relied on and are the best to use for the purpose. Even when thrice boiled vegetables are not quite free from carbohydrate, the percentage is so much reduced that from four to thirty times as much of the thrice boiled as of the once boiled material will contain the same amount of carbohydrate.

Aspiration of Tuberculous Abscess.—Given an early diagnosis, Fernandez claims that treatment by aspiration will frequently arrest the course of a tuberculous abscess and effect a complete cure. Delay in diagnosis and treatment by incision not infrequently end in disaster.

Carcinoma of Ovary.—In the case cited by Gerson, an exploratory laparotomy had been performed, a provisional diagnosis of tuberculous peritonitis having been made. The right ovary and tube were found involved in a growth and were removed; no secondaries were observed at the time. Within a few weeks after operation a lump was noticed in the left iliac region, and on the presumption that the left ovary was involved, a second laparotomy was performed, which revealed a malignant growth of the left ovary and multiple secondaries in the omentum. The case was considered inoperable. The patient died two weeks later. Microscopically, a large papillary carcinoma, tubular and cystic, consisting of polygonal and cubical cells, was found in the left ovarian mass. Secondary carcinoma were found in the vagina and external os, the submucosa of the bladder, and the subserosa of the great omentum. A noteworthy fact was that no secondaries were found in the kidney on the right side, from which the corresponding ovary had been removed at the first operation.

Medical Journal of Australia, Sydney

Nov. 22, 1919, 2, No. 21

Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 431. To be cont'd.

*Cases of Functional Disease of the Nervous System. A. C. Fraser.—p. 436.

Cases of Functional Disease of the Nervous System.—Fraser reports a case of hysterical contracture of the hand, one of psychasthenia, hysterical tremor and fits (shell shock), complicated by angioneurotic edema, and one of hysterical amblyopia. The patient made a complete recovery.

Nov. 29, 1919, 2, No. 22

Rational Aspect of Cardiac Affections. S. Pern.—p. 453.

Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 454. Concluded.

Supercute Pulmonary Edema Complicating the First Stage of Labor. S. M. Verco.—p. 462.

Dec. 6, 1919, 2, No. 23

*Digestive Disorders of Artificially Fed Infants. S. Harrison.—p. 475.

*Infant Mortality. W. F. Litchfield.—p. 479.

Food Factor in Gastro-Intestinal Diseases. R. D. Luker.—p. 481

Digestive Disorders of Artificially Fed Infants.—That every baby is a law unto himself in capacity, digestive power and assimilative process is a point emphasized by Harrison. Psychic and material individuality are as characteristic of infancy as of adult life. General guiding principles are essential, but no rigid hard and fast rules can be laid down to fit every case, for the baby is a living entity and not a machine with standardized parts. One must study, examine and handle each baby personally if success is to be attained.

Infant Mortality.—From a study of the infant mortality statistics of Australia and New South Wales, Litchfield concludes that during recent years there has been some agency in operation that has reduced very considerably infant mortalities. This has been widespread and uniform in its manifestation. Its influence has extended to the second, third and fourth years of life, and it has operated by diminishing the number of deaths from infective processes, especially those affecting the bowels and lungs in young children. It has been independent of public health measures and welfare schemes and there has been no great change in the habits of the people during the period of its occurrence. The only thing Litchfield can attribute it to is a widespread but obscure climatic effect.

Archives Médicales Belges, Brussels

August, 1919, 72, No. 8

*Gases of Warfare. H. Fredericq.—p. 105.

*Sarcoma of the Stomach. H. Koettlitz.—p. 136.

Diaphragmatic Hernia; Two Cases. A. Colard.—p. 144.

*Clinical Examination in Diseases of the Nervous System. M. Molhant.—p. 149; Idem. R. Marchal.—p. 222.

Gases in Warfare.—Fredericq says that now that the censorship is a thing of the past, he is free to write a general review of this subject based on personal observation and experiences and those of others, as well as on the strictly censored literature. He remarks that the use of gases is not a new thing in warfare. "The Inquisition in striving to influence the heretics of Dauphiné used the gases from the combustion of green wood as a means of collective asphyxiation. In 1845 General Pellissier resorted to the same means in reducing the rebellious Arabs in Algeria, but he was denounced for this in the French legislature. The Japanese also used toxic gases, produced in a more scientific manner in their campaign against the Russians in 1905." Fredericq says further that German documents which fell into the hands of the Allies showed that shifting of the wind, sweeping the gas back on them, did great damage to the German themselves in May, 1915, and on other occasions. The Germans did not have the advantage of the world weather reports, as the Allies' newspapers did not publish meteorologic reports during the war.

Sarcoma of the Stomach.—Koettlitz reports a case of gastric sarcoma with chylous ascites and involvement of the pancreas. He compares this case with the few on record. Gosset's compilation in 1912 included only 171. As metastasis is rare and as the sarcomas are often pedunculated operative treatment offers considerable chances for a cure. His patient refused intervention for forty-five days after the tumor and achylia had been diagnosed, and the growth then was inoperable.

Disease of the Nervous System.—From the standpoint of the general practitioner, Molhant gives the pathogenic interpretation and diagnostic value of the clinical signs with disease of the nervous system. The clinical exploration in these cases differs so fundamentally from other clinical cases

that the physician often feels at a loss. This first installment of his article is accompanied with thirty-three illustrations.

Marchal expatiates on the importance of an early diagnosis in these cases, so that the patient can be referred to a specialist in time for treatment to be effectual. He says that it does not take more than two minutes to test the pupil, tendon and skin reflexes and automatism when a patient complains of more or less vague pains and tendency to paresis of a member.

Bulletin de l'Académie de Médecine, Paris

Nov. 25, 1919, 82, No. 37

- The Milk Shortage in Paris. Pinard.—p. 359. See Paris Letter.—p. 118.
*Measurement of Speed of Heart Action. Lapique.—p. 366.
*Malta Fever from Cheese. L. Bernard and H. Meunier.—p. 368.
*Resection for Gastric Ulcer. J. Abadie.—p. 370.
*Treatment of Hemophilia. P. Emile-Weil.—p. 374.

Measurement of Speed of the Heart Impulse.—Lapique announces from his further study of chronaximetry that in the normal heart the functional velocity of the bundle of His is always in a given ratio to the functional velocities of the different cavities of the heart. The variations from this ratio offer a new mode of research on the heart in pathologic conditions, and to study the effects of drugs.

Malta Fever from Cheese.—The cheese made from goats' milk was the only possible source that could be discovered in the case of undulant fever in western France.

Gastrectomy for Uleer.—Abadie declares that all the arguments against gastrectomy in opposition to palliative operations fall flat now that experience is confirming the comparative harmlessness of gastrectomy. It puts an end definitely and permanently to all disturbances from the stomach and menace of malignant disease later. There is no other field of surgery that is more useful from the practical standpoint as, other things being equal, it transforms a long suffering invalid into a normal, vigorous producer.

Serum Treatment of Hemophilia.—Emile-Weil reported in 1907 a very severe case of hemophilia since early childhood in a man of 26, much improved by injection of human or animal blood serum. These injections were kept up afterward for five years, 20 c.c. of serum every two months, and there have been no hemophilic hemorrhages since, the blood coagulating in a nearly normal manner. Six other patients have been treated by the same continuous method, and five have been freed from recurring hemarthroses, hematuria, etc., but the blood in none is quite normal. In the sixth patient the improvement was less and there have been some recurring hematomas. There never were any serious anaphylactic phenomena in any of the cases, but slight symptoms were sometimes apparent; in one not until after the sixteenth injection, and then none again. Others had them after the first injection and not afterward, slight joint trouble or urticaria, with fever, never anything serious.

Bulletin Médical, Paris

Dec. 20, 1919, 33, No. 56

- *Adjuvant Medication in Syphilis. F. Balzer.—p. 779.
Dangers of Criminal Abortion. P. Guéniot.—p. 782

Dec. 27, 1919, 33, No. 57

- Inaugural Lecture in Dermatology Course. L. M. Pautrier.—p. 801.
Nervous Symptoms from Retroparotid Space. F. Bonnet-Roy.—p. 807.

Adjuvant Medication in Syphilis.—Balzer urges the necessity for treating superposed infections, and fighting to ward off sclerosis, and to arrest incipient tabes and parietic dementia. Serotherapy might aid in overcoming the barriers which sclerosis interposes to protect the persisting foci of spirochetes. Attempts to strengthen the organism and reinforce the defences are also in order. Measures to stimulate leukocyte production, and organotherapy might be considered. Measures that have been found useful in the chronic pathologic conditions entailed by syphilis might prove far more effectual if used early, before these conditions had become so firmly entrenched. He thinks this adjuvant medication has been neglected too much to date.

Bulletin de la Société Médicale des Hôpitaux, Paris

Nov. 28, 1919, 43, No. 34

- *Tracheobronchial Glandular Disease. H. Méry.—p. 999.
*Diagnostic Sign of True Herpes Zoster. Sicard.—p. 1000.
*Syphilis and Tuberculosis. E. Marino (Buenos Aires), and M. J. C. Mussio-Fournier (Montevideo).—p. 1002.
*Determination of Blood Pressure. M. Villaret and Dufour.—p. 1006.
*Tuberculin Reaction in the Pregnant. Nobécourt and Paraf.—p. 1013.
Missing Xiphoid Appendix in Inherited Syphilis. Qucyrat.—p. 1015.

Diagnosis of Tracheobronchial Glandular Disease.—Méry refers to some recent clinical experiences in which the radiologic and the necropsy findings were absolutely superposable. This comparing of the clinical and radiologic findings is one of the most instructive modes of research.

True Herpes Zoster.—By this term Sicard means the form that confers immunity and never recurs. He says that the aspect of the skin after the eruption has healed is characteristic, as definite and permanent minute scars are left on the patch of skin affected. This does not occur with the zosteriform type of herpes. This latter form is often the prelude to irritation of a spinal root from compression. Hence herpes zoster in adults should be regarded with suspicion until it has established its identity by the scars left.

Syphilis and Tuberculosis.—This communication from South America emphasizes the unsuspected frequency of inherited syphilis as a predisposing factor in the status lymphaticus, in asthenia and in more or less complex endocrine derangement. Even when no signs of inherited syphilis can be detected, tentative specific treatment is justified, and it may transform conditions previously refractory to all treatment. This is particularly indicated when the parents are robust and free from alcoholism, tuberculosis, malaria and lead poisoning, which might explain the degeneracy of their children. Tuberculosis so often develops on a basis of syphilis, that inherited syphilis should be suspected, particularly in the masked cases. Tentative specific treatment in addition to the usual treatment for the tuberculosis may induce such improvement that the organism then can throw off the tuberculosis.

The Blood Pressure.—Villaret and Dufour apply the Pachon oscillometer cuff to the upper arm, the Laubry sphygmophone to the bend of the elbow as usual, and palpate the radial pulse, all at the same time. They thus combine the oscillometer, auscultation and palpation methods, each acting as a control of the others, and the findings are recorded on a single chart. They describe a simple method for calculating a constant to express the coefficient of the different findings. It has confirmed the modifications in the normal blood pressure during digestion and in the erect position.

Loss of Immunity During Pregnancy.—Nobécourt and Paraf applied the tuberculin skin test weekly to 100 women during the last half of pregnancy and after delivery. This showed that pregnancy and parturition may induce an inability to react to the tuberculin test—a tuberculin anergy like that noted in certain infectious diseases, especially measles. This reduction in the sensitiveness to tuberculin usually corresponds to a parallel reduction in the immunity. This state of anergy—especially pronounced after childbirth—may explain the aggravation in tuberculous processes which is so apt to follow delivery.

Journal de Médecine de Bordeaux

Dec. 10, 1919, 90, No. 23

- *Substitute Action in Neurology. A. Pitres.—p. 511. To be cont'd.
With the French Surgical Ambulance in Russia. A. Baudrimont.—p. 522. Cont'n.

Replacement or Vicarious Action in Neurology.—Pitres analyzes the facts known to date in regard to substitute function in nerves after war wounds, and shows the errors which correct interpretation enables us to avoid.

Lyon Chirurgical

July-August, 1919, 16, No. 4

- *The Sequels of Sprains of the Knee. L. Tavernier.—p. 345.
Fistula into Bronchus from War Wound. J. L. Roux-Berger.—p. 364.
*Ossification in the Eye. L. Bussy.—p. 368.
*Old Cartilage Graft in Skull. A. Policard and J. Murard.—p. 378.

Sequels of Sprains of the Knee.—In this general review Tavernier discusses the various indications with the different sequels of a sprain of the knee. For dislocation of a meniscus, he opens the joint transversely, and sutures the lateral ligament with the knee half flexed, and immobilizes, and has had invariably good results, the patients able to run and jump. But there is a sideward movement when the knee is half flexed, not in other positions. Some do not notice it at all; those who do notice it may complain that the knee is weak. He shows that all the consequences of a sprain of the knee can now be effectually combated with some of the new or older operations. They have proved their harmlessness and efficacy in correcting the serious infirmity liable to be entailed by a sprain.

Ossification in the Eye.—Bussy discusses the mechanism of the bone formation sometimes observed in an atrophied eye or stump of an eye.

Fate of Cartilage Implant in the Skull.—At necropsy thirty months afterward, the cartilage implant was found fastened to the skull around with connective tissue, but there was no direct union between cartilage and bone. This fibrous soldering answered the purpose here, but it might not be strong enough to stand much movement of the parts. The perichondrium seems to protect the cartilage graft against being resorbed. In this case there had been very little resorption.

Lyon Médical

November, 1919, **128**, No. 11

Influenza and Tuberculosis. C. Roubier.—p. 531. Conc'n.

*Uterine Cancer. H. Violet.—p. 544.

Germany Since Its Defeat. B. Lyonnet.—p. 568. Conc'n.

Remote Results of Operations for Uterine Cancer.—Violet reviews the present status of 32 women from six to ten years after an operation for cancer of the uterus. Three of the women have been lost track of, but 9 are in good health to date; 10 succumbed to recurrence and 4 to postoperative peritonitis or hemorrhage. He says he does not know of an instance of uterine cancer treated with radium that has escaped recurrence for longer than three years. He would restrict radium to the inoperable cases, and to use supplementary to a radical operation, or in the attempt to render the cancer operable.

Paris Médical

Dec. 13, 1919, **9**, No. 50

*Depth in Radiology of the Heart. Vaquez and Bordet.—p. 465.

*Arsphenamin Jaundice. E. Chabrol and A. Khoury.—p. 467.

*Vitamins and Growth. Houlbert.—p. 473.

Seven Cases of Typhoid in One Family; No Water Contamination. Apert and Cambassédès.—p. 476.

The Depth Index in Radiology of the Heart.—Vaquez and Bordet report from study of 1,000 cases that when the depth index is normal, while the diameters of the heart are exaggerated, the right cavities are pathologically enlarged, as a rule. When the reverse occurs, that is, the index is exaggerated while the diameters are normal, the left ventricle is often pathologically enlarged in the depths. Or else the heart is displaced, which is easily determined. The depth index is the difference between the profile of the apex as marked on the screen directly and then again after the tube has been moved 10 cm. to the left. With a distance of 60 cm. from the focus to the screen, the normal difference between the two profiles, the subject standing, is from 7 to 14 mm. The expansion of the chest does not modify the findings. The findings with this index always corresponded to the clinical findings in the case.

Arsphenamin Jaundice.—Chabrol and Khoury present an array of clinical data and emphasize the importance of a predisposition on the part of the liver as a factor in the toxic jaundice from arsphenamin. Several of their cases show the extra vulnerability of the liver from a pregnancy, tendency to gallstones, and hereditary cholemia. Antecedents of this kind call for special caution in administering a drug with a reputation for inducing jaundice. One of the longest and best known types of hemolytic jaundice is that induced by arseniuretted hydrogen. How else except by toxic action can we explain the jaundice which develops in 20-year old

syphilis after a course of ten or twelve injections of arsphenamin?

Vitamins and Growth.—Houlbert has been studying the action of vitamins on the division and multiplication of cells. Two of three chickens of the same hatching were fed on polished rice, wheat and barley, all sterilized, and twice a week a little cod liver oil was given them to ward off polyneuritis. Cell division was found completely arrested in the sexual and hematopoietic glands examined in one chicken at the fortieth day. The other was then kept on the same diet, but a few drops of a vitamin were added to the feed, and the chicken began to thrive at once. When killed the thirty-second day it was evident that the endocrine glands had pursued their normal evolution after the primary arrest of the forty days of the deficiency diet.

Presse Médicale, Paris

Dec. 17, 1919, **27**, No. 77

*Prophylaxis of Tuberculosis. A. Calmette.—p. 773.

*Spirochetal Bronchitis. Najib Farah.—p. 774.

Prophylaxis of Tuberculosis.—Calmette insists on the importance of some of the more recent acquisitions in our knowledge of tuberculosis, such as that the tuberculous with occult or latent lesions may suddenly begin to eliminate tubercle bacilli in their glandular excretions or their dejecta. This intermittent elimination by these occult carriers is very common, but is seldom recognized. He reiterates further that no person and no animal contracts tuberculosis, no matter how unhygienic the environment, unless virulent tubercle bacilli have been brought into this environment by some human or animal continuous or intermittent spreader of these bacteria. All our efforts therefore should be predominantly directed to ward off this importation of the bacilli, especially frequent importations and on an extensive scale. Every one who reacts to the tuberculin test—even though apparently entirely healthy—is an intermittent spreader of germs, the more dangerous because unsuspected. They are the ones who disseminate contagion even in the remotest regions of the world. It will always be difficult to discover these intermittent sowers of bacilli, either human or bovine. But every person or animal reacting positively to the tuberculin test should be regarded with suspicion, and young children and young domestic animals in localities still free from infection should be guarded against them, and against contamination of milk and food, by hands, towels, flies and street and other dust. The reservoirs of virus in open tuberculous cases in man and animals are the source of the massive and frequent contaminations which entail phthisis even in adults. To guard their environment against them requires insight and science on the part of physicians and veterinarians, and training in hygiene for all interested, either because they have to live with the sick or fear loss of their herd.

Spirochete Bronchitis.—Farah reports gratifying results in ten cases of Castellani's spirochetosis in which intramuscular injections were given of iodine in an oil vehicle. There has been no relapse in any of the cases since May, 1918. From five to ten daily injections were given, followed by another series at two or three days' interval. By the fifth injection there were scarcely any spirochetes to be found. One of the patients had had the spirochetosis for eight years. No other member of the family had contracted the disease in any instance, confirming the slight contagiousness. The same treatment apparently proved equally effectual in his two cases of monilia bronchitis.

Revue de Chirurgie, Paris

May-June, 1919, **38**, No. 5-6

*Toxicity of Crushed Muscle. P. Delbet and others.—p. 309.

*Varicocele. O. Jacob.—p. 352.

*Sporotrichosis from Surgical Standpoint. P. Moure.—p. 366.

Toxicity of Crushed Muscle Tissue.—Delbet and his four co-workers injected 213 normal animals with crushed tissues, macerated and filtered, taken from 121 other animals. This extensive research on 114 rats, sixteen dogs, sixty-eight guinea-pigs, thirteen frogs, one cat and one rabbit has con-

firmed the assumption that crushed and devitalized tissues generate the toxins which bring on shock. In war wounds and in peace crushing injuries the main thing is to clear out all the devitalized tissues before they get the chance to poison the whole system. Some of the animals displayed remarkable resistance to the injections while others succumbed at once. Those that succumbed, he noticed, were the carnivorous animals while the herbivorous guinea-pigs and rabbits were the most resistant. He accepts this as a hint to drop meat from the diet but otherwise feed patients abundantly before and after operations, mostly with vegetables. Soldiers who had been eating much meat seemed to develop traumatic shock more readily than others, while those from rural districts, accustomed to a more vegetarian diet, seemed more resistant to traumatic shock.

Operative Treatment of Varicocele.—Jacob has had no recurrence in the 237 cases of varicocele in which he resected from 6 to 8 or 15 cm. of the anterior spermatic veins, close to the inguinal canal. The peripheral stumps were then tied together and drawn up by the ends of the ligature into the superficial inguinal ring where they were fastened to the pillars of the ring.

Surgical Importance of Sporotrichosis.—Moure emphasizes that sporotrichosis does not require surgical treatment, but that its localizations and clinical symptoms are liable to deceptively simulate other pathologic conditions for which operative measures would be imperative. He declares that the textbooks on pathology should devote some space to this mycosis as well as to syphilis and tuberculosis, to avert blunders from its nonrecognition. It should be looked for in all subacute and chronic suppurations, to prevent needless and often harmful operations. If not convenient to make cultures or test for agglutination, nothing is easier than to give a tentative course of iodid treatment. Under this, sometimes, old suppurations which have resisted all surgical interventions may melt away as if by magic. He advises testing the tolerance, as about 10 per cent. of patients are more or less intolerant of iodids. He gives a daily dose of 2 gm., gradually increasing to 4, 6, 8 and 10 gm. The useful dose is from 4 to 6 gm., and potassium iodid, sodium iodid and iron iodid might be associated, adding the syrup of bitter orange peel, and supervising the antisepsis of the bowel. The dose should be fractioned and taken with meals, and the treatment kept up for at least a month after the apparently complete cure of all the lesions. If surgical measures are required for osteitis with sequestrs, it is better to defer them till after the iodid has been taken for some time.

Revue Médicale de la Suisse Romande, Geneva

October, 1919, **39**, No. 10

Influenza in 1918. C. Krafft.—p. 465.

*Simplified Serologic Test. J. Golay.—p. 493.

Simplified Serologic Test.—Golay's technic differs from Noguchi's in a number of minor points which, he says, increase its precision while materially simplifying the technic, as he describes. In 150 persons tested, the reaction was positive in 100 per cent. of the syphilitics and was negative in 100 per cent. of the nonsyphilitics.

November, 1919, **39**, No. 11

*Actinomycosis of the Brain. N. Sagredo.—p. 505. Begun in No. 10. p. 478.

Influenza at Children's Clinic, Geneva. Reh and Schiff.—p. 517.

Actinomycosis of the Brain.—Sagredo reports two cases of metastasis in the brain from actinomycosis in lungs and pleura, and compares with them twenty cases he has compiled from the literature. The lesion is generally an abscess, but it may develop as a tumor or it may induce merely meningitis. The pus with actinomycosis is peculiarly thick and is liable to form false membranes, like those of membranous croup, as occurred in the ventricles in one of his cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 16, 1919, **40**, No. 92

*Effect of Occlusion of Pancreatic Duct. E. Bernucci.—p. 996.

Nov. 20, 1919, **40**, No. 93

Poisonous Mushrooms. G. Ferri.—p. 1013.

Effect on Peristalsis of Occlusion of Pancreatic Duct.—Bernucci gives twelve sets of radiograms showing the progress of the food in stomach and bowel after the pancreatic duct had been ligated or had become obstructed from other cause. The experiments were made on dogs. The effect was most marked on the progress of fat foods, less marked with protein foods, and scarcely any effect was seen on carbohydrates. These effects are analogous to those from ligation of the common bile duct, but they are not so pronounced as with the latter. With obstruction of the pancreatic duct, the stomach is the segment of the digestive tract that feels the retarding effect most.

Policlinico, Rome

Nov. 23, 1919, **26**, No. 47

*Vitamins in Urine. G. Gaglio.—p. 1381.

Acetonemia in Children. E. Modigliani.—p. 1382. Conc'n.

Red Cross Welfare Work for the Tuberculous. C. Baduel.—p. 1395.

*Treatment of Purulent Pleurisy. E. Pittarelli.—p. 1396.

Vitamins in Urine.—Gaglio writes from the Pharmacology Institute of the University of Rome to confirm his previous announcements (May 25, 1919) that pigeons with pronounced polyneuritis from being fed with polished rice recovered from the otherwise fatal polyneuritis when they were treated with human urine, two or three times a day in doses of 3 or 4 c.c. of the urine, slightly condensed in the water bath. "The effect was more decisive," he adds, "than Funk realized with extract of rice hulls, which resulted in his assumption of the hypothetical vitamins."

Aspiration of Pus from the Pleura.—Pittarelli gives an illustrated description of his aspirator which, automatically and simultaneously presses and aspirates, so that the pressure inside the pleura is not modified in the least, the whole proceeding independently of the intrathoracic pressure. The double-ended syringe has a tube and needle at each end. The two plungers are worked simultaneously by a thumb-screw in the center. One thus aspirates while the other forces in air or fluid. A disinfecting fluid can thus be sent through the pleura until it comes away clear. The only inconvenience is the necessity for introducing the two needles.

Nov. 30, 1919, **26**, No. 48

*To Reveal Latent Malaria. A. Dazzi.—p. 1413; Idem. T. Silvestri.—p. 1418.

*Serous Traumatic Peritonitis. G. Aboularage.—p. 1427.

Metal Stand for Needle for Intravenous Injection. A. Cerioli. p. 1429.

Means to Reveal Latent Malaria.—Dazzi reports trials of various means that have been proposed to induce a malarial paroxysm in suspects, and states that a subcutaneous injection of 1 mg. of suprarenal extract best answers the purpose. No quinin was allowed for five days before, and the blood was examined before, twenty and sixty minutes afterward, and the next day. It does not induce a malarial attack, but it drives out the parasites into the blood at once and up to an hour, but by the next day none may be found. The epinephrin induces also a marked reduction in the size of the spleen, commencing at once and continuing for several hours.

Silvestri prefers strychnin for the purpose; from 1 to 3 mg. by the mouth daily. The simplicity and efficacy of this provocative measure commend it, he declares, the febrile attack developing not later than the third or fourth day.

Traumatic Serous Peritonitis.—The circumscribed peritonitis followed a contusion and the abdomen had to be tapped several times, the child dying of cachexia in a month, although the viscera seemed normal.

Rivista Critica di Clinica Medica, Florence

Oct. 18, 1919, **20**, No. 42

*Progress in Organic Nervous Disease. F. Schupfer.—p. 493. Conc'n.

Recent Progress in Organic Disease of Central Nervous System.—Schupfer states that no light has been thrown on the pathology of the frontal lobes nor on aphasia, apraxia and epilepsy by the war experiences, but the war wounds of the cerebellum have confirmed the latest acquisitions of science, especially in regard to centers in the cerebellum

controlling the action of both the acting and the antagonist muscles. It was learned further that wounds of the spine were not so grave in the cervical region as lower down. If eschars, infection of the bladder and pleuropulmonary complications can be warded off, there may even be notable improvement. The difference in the gravity of the lesion as it is high or low is explained by the wider space for the cord in the spinal canal in the cervical region.

Archivos Españoles de Pediatría, Madrid

October, 1919, 3, No. 10

- *Malta Fever in Children. J. Aguilar Jordán.—p. 577.
- *Calcium Balance in Children. C. S. de Los Terreros.—p. 595.
- Serap of Bone in Rhinopharynx. A. Martin Calderin.—p. 606.

Malta Fever in Children.—Aguilar Jordán reiterates that no drugs have proved effectual in treatment of Malta fever. Vaccines and antisera seem to offer promise of better results, although in his own experience they have proved disappointing. He has been quite successful with antityphoid autovaccine therapy in children, since 1913, and thinks that improved technic will aid in vaccine treatment of Malta fever. The experiences with it in Italy lately by Caronia and others have been most satisfactory, as duly reported in these columns.

Calcium Balance in Children.—De los Terreros explains that calcium and its compounds have a much wider sphere of action in children than has been suspected till recently, not only in rachitis and tuberculosis, but in spasmophilia, epilepsy, true hypotrophy, neoplasms, etc. The loss of calcium balance is comparatively common in children. It should be suspected in any one of the above conditions, and be investigated by analysis of the urine and stools, study of endocrine disturbances, the blood count, chemical analysis of the blood, and radiography of the bones.

Crónica Médico-Quirúrgica, Havana

October, 1919, 45, No. 10

- Reminiscences of Youth. J. Santos Fernández.—p. 277.
- *The Reflexes During Sleep. J. de Jesús González.—p. 285.

The Reflexes During Sleep.—González in long series of tests on children of different ages found the skin, tendon and sensory reflexes abolished during sleep. Even the reflexes peculiar to sleep disappeared likewise when the slumber grew more profound.

Medicina Ibero, Madrid

Nov. 22, 1919, 9, No. 107

- *Cholesterol as Factor in Immunity and in Production of Agglutinins. T. Morató and G. Villanueva.—p. 137. Conc'n.
- *Treatment of Spindle-Cell Osteosarcoma. C. Calderón.—p. 139.
- Useful and Harmful Coughs. G. Triviño.—p. 140.

Cholesterol and Immunity.—Morató and Villanueva found that cholesterol mixed with typhoid vaccine and injected into eighteen rabbits seemed to hasten and enhance the production both of antibodies and of agglutinins. The addition of the cholesterol also seemed to reduce the general reaction to the antityphoid vaccine. They also cite further some recent research by others testifying to the benefit from administration of cholesterol in toxi-infections in which the cholesterol content of the blood is below the normal figure. Among others mentioned is Iscovesco's favorable experiences in tuberculosis, Revillet's in exophthalmic goiter, and Monziol and Castel's in malaria. The latter declare that cholesterol tends to render the cells more susceptible to the action of quinin.

Treatment of Sarcoma.—Calderón advised disarticulation of the hip joint in the case of a youth with a spindle-cell osteosarcoma on the leg. The parents refused to consent to such a mutilating operation for "merely a little bunch on the leg," and they asked to have the bunch cut out and the bone scraped. He refused to do this, confident that it would merely whip up the malignant disease. The parents found another surgeon more complaisant, but the curetting hastened the course and death speedily followed. He urges others to resign a case rather than do such unscientific and injurious operations as curetting in these circumstances.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

1918, 10, No. 2

- *Entameba Found in Snake. A. Marques Da Cunha and O. Da Fonseca.—p. 95.
- Microscopic Floating Life of Sea Coast of Brazil. Idem.—p. 99.
- *Scientific Trip down Paraná River. A. Lutz H. C. de Souza Araujo and O. da Fonseca, Jr.—p. 104.
- *Experimental Research on Influenza. A. Marques Da Cunha, O. de Magalhães and O. da Fonseca.—p. 174.
- Brazilian Protozoa. A. Marques da Cunha.—p. 192.
- Flagellate Parasites in Frogs. C. Ferreira Pinto.—p. 194.
- Brazilian Oestridae. A. Lutz.—p. 118 (of Part 2).

The "Memorias."—The last half of this 167-page issue contains full translations of the articles in the first half. All the translations are in English except two in French. There are fifty-seven pages of fine plates accompanying the article on the entameba and the report of the scientific mission to study the mosquitoes and pathology of the Paraná district.

Experimental Influenza.—The experiments on monkeys, guinea-pigs and other animals at the institute confirmed that the filtered virus was able to induce influenza in animals. The intense and prolonged rise in temperature after the inoculation is accepted as the criterion of the reaction to inoculation of the animals with blood and filtered sputum from influenza patients. The period of incubation, the immunity conferred by the first inoculation, and the absence of any reaction when the filtrate had been heated or treated with phenol, testified that the hyperthermia was the work of a living agent and not a toxic fever. Virulent filtrates heated and phenolized seemed to display a curative action. Autohemotherapy is often effectual, which testifies further to the presence of the virus in the blood, as also the precipitation reaction between the sputum filtrate and convalescents' serum. There is no fixation reaction between human serum and the filtrate of the influenza sputum.

Observador Médico, Mexico

Nov. 15, 1919, 1, No. 5

- Autogenous Vaccine Therapy. T. G. Perrin.—p. 91. Conc'n.
- *The Abderhalden Test for Cancer. F. Solorzano A.—p. 100.

The Abderhalden Test for Cancer.—Solorzano applied Abderhalden's technic to the urine in eleven cases of cancer, and obtained a positive response in seven.

Plus-Ultra, Madrid

August, 1919, 3, No. 14

- *Abnormal Metabolism of Nucleins as Cause of Gouty Diathesis and Diabetes. Obdulio Fernández.—p. 65.
- Recent Progress in Blood Diseases.—p. 68; in Obstetrics and Gynecology.—p. 72; in Ophthalmology.—p. 89; in Therapeutics.—p. 93; in Instruments, etc.—p. 97; in Venereology.—p. 106; in Heart Disease.—p. 116.
- Vaccine to Ward off Complications of Influenza. A. Salvat.—p. 69.
- *Thyroid Deficiency. J. Collar y Jiménez.—p. 77.
- *Lumbar Fistulas of Renal Origin. M. Serés.—p. 80.
- *The Factors in Hydromineral Treatment. Rodríguez Pinilla.—p. 90.
- *Influence of Uranium on the Blood. F. Más Magro.—p. 110.

The Nucleins in Pathogenesis of Gout and Diabetes.—Fernández presents arguments in favor of the assumption that both arthritism and diabetes are the result of defective metabolism of nucleins or of their immediate derivatives.

Thyroid Deficiency.—Collar gives the history of two children with congenital myxedema, the photographs showing the great improvement realized under a year of thyroid treatment begun at the ages of 4 and 11. The thyroid extract was taken regularly two or four times a day. The treatment was not begun till 18 in another case in which the symptoms of thyroid insufficiency had developed at the age of 10. Under fifteen months of thyroid treatment the girl grew taller, and the breasts and genital organs developed; menstruation became regular and free from headache. Among the symptoms were albuminuria and tendency to somnolency and chilliness, and she never perspired even during the summer. Slight or partial insufficiency of the thyroid is hard to differentiate, as it appears under so many different aspects, especially a tendency to obesity, to transient edema not located by gravity, appearing in the arms, hands and legs and in the lower lids, especially in the morning. The voice also may be weak, from infiltration of the

vocal cords. The tendency to somnolency and to chilliness is also a prominent symptom, and there are often vasomotor disturbances, numbness in the fingers, etc. The hairs in the outer half of the eyebrow may drop out, and there is usually constipation and headache in connection with menstruation, and neuralgia is common. There is very little perspiring, except possibly in the hands; the sweat here contrasts with the cold clamminess.

Fistulas Into the Kidney.—Serés has operated in three cases for renal fistulas in the lumbar region, and describes the etiology, complications, and preferable operative technic for such lesions from suppuration or calculi in the kidney. Functional tests of the kidney showing normal conditions demonstrate an extrarenal origin for the fistula; they are indispensable in any event as they reveal whether the kidney is worth saving or not.

Crenotherapy.—This classic term for treatment by water from mineral springs deserves more general adoption, although the term "spa treatment" includes much more than the waters. The repose, change of scene and diet are important adjuvant factors, Rodríguez emphasizes. He adds that crenotherapy cannot be classed as physiotherapy, like sunlight, heat, electricity and exercise. Although the waters are a natural agent given by Nature, yet their action is physicochemical, not physical alone, and each spring is an individual, a living thing, as is evident by the loss in its potency when carried away from its source. The mineral water acts more like a ferment; comparatively small amounts accomplish great transformation, while physical agents act proportionately to their quantity.

Influence of Uranium on the Blood.—Más Magro reports the results of extensive experimental research on the action of uranium on the blood-producing organs. A subcutaneous or intraperitoneal injection of a 2 per cent. solution of uranium acetate in rabbits and guinea-pigs caused an epithelial nephritis with death the sixth or seventh day. This is the effect of the minimal lethal dose. When death occurs in three hours and a half, the blood shows coagulation, thrombosis, precipitation and agglutination. Uranium thus does not induce death directly.

Progresos de la Clínica, Madrid

September, 1919, 7, No. 81

- *Operations for Pulmonary Tuberculosis. L. Morales.—p. 97. Conc'n.
- *Chemical Analysis of the Blood. F. Poyales.—p. 108. Conc'n.
- *Nutritional Derangement and Rachitis. P. Pereda y Elordi.—p. 117.
- Peripheral Facial Diplegia from Influenza. W. López Albo.—p. 141.

Operative Treatment of Pulmonary Tuberculosis.—Morales concludes from his review of the various surgical measures that have been applied in pulmonary tuberculosis, that there is every reason to call in the surgeon where the disease is progressing in spite of well-planned and systematic medical treatment. No attempt should be made to resect the lung itself or open a cavity, as these interventions are extremely grave under these circumstances and the result doubtful; at most, a very large cavity might be opened up under very special circumstances. Procedures to ensure the collapse of the lung favor the natural healing processes, and among them paravertebral thoracoplastics gives fine clinical results, but phrenicotomy, he affirms, is the simplest measure and has good effects to its credit. It is indispensable, he reiterates, that the disease must be confined to one lung. He describes the technic for phrenicotomy, saying that it is harmless, never causing disturbance in the respiration or heart functioning nor dyspnea. Under local anesthesia, through an incision 10 cm. long at the outer margin of the sternocleidomastoid muscle, the phrenic nerve is exposed and severed.

Practical Analysis of the Blood.—Poyales describes various simplified procedures for chemical analysis of the blood, all within the reach of the general practitioner. His numerous references are all to American works.

Nutritional Disturbances and Rachitis.—Pereda's profusely illustrated account of his experience with debility and rachitis in children teaches anew that the osteoporosis which follows deprivation of calcium in the food is not rachitis,

and never runs into rachitis, so long as there is not chronic intoxication of digestive origin. When this auto-intoxication is corrected, then conditions right themselves, if this occurs in time to ward off irreparable lesions. The whole cause of true rachitis he traces to defective digestion of fats, aided perhaps by a relative congenital intolerance. Treatment should not include calcium, as there is enough in ordinary food for the infant's requirements.

Repertorio de Medicina y Cirugía, Bogota

November, 1919, 11, No. 2

- *Shock after Delivery. N. Buendía.—p. 57.
- *Case of Pseudohermaphroditism. Martín Méndez S.—p. 68.
- Criminal Responsibility of the Insane. A. Gaitán U.—p. 72. Conc'n.

Shock After Delivery.—Buendía refers to a set of symptoms after abortion and normal delivery which seem to form a state of shock, although the loss of blood was not excessive and no operative measures had been attempted. It seems to be more frequent in tropical than in temperate climes, and in women who have borne a number of children; those inclined to neuropathies are predominantly affected. He describes six cases of this "essential postpartum shock," with its profound depression of the circulation and respiration, and partial or total loss of consciousness and sensibility. Hypodermic injection of epinephrin proves so effectual that it throws light on the etiology.

Pseudohermaphrodite.—Méndez gives an illustrated description of another instance of blunder in sex, the androgynoid being unmistakably of male sex, although baptized and brought up as a girl.

Revista Médica de Chile, Santiago

November, 1919, 47, No. 11

- *Anomalies in Bile Ducts. J. Alvarado.—p. 813.
- Syphilitic Disease of Orbit and Skull. C. Charlín C.—p. 816. Cont'n.
- *Congenital Luxation of Hip Joint. E. Díaz Lira.—p. 840. Conc'n.
- *Puzzling Case of Ovarian Cyst. G. Lachaise.—p. 853.
- *Italian Method in Treating Ectropion. Italo Martini.—p. 855.
- Vagotomy in Syphilitics. Prado Tagle and C. Garcés.—p. 860.
- *Typhus. A. Atria.—p. 867. Conc'n.

Anomalies in Course of Bile Ducts.—Alvarado describes two cases in which the cystic duct lay behind the hepatic and parallel to it, and emptied into it from the rear.

Congenital Luxation of Hip Joint.—Díaz reviews the present status of treatment of this condition in Chile and especially in the children's hospital at Santiago, studying in particular the causes of failures. Perseverance and patience are needed here more than anywhere else, he remarks, quoting in conclusion Amunátegui's saying that orthopedics is the most ungrateful of specialties, as it takes so extremely long to get results.

Puzzling Ovarian Cyst.—Lachaise diagnosed an extra-uterine pregnancy from the fluctuating tumor reaching above the umbilicus and not changing its position, while he could palpate the fetal head. Laparotomy showed a large ovarian cyst, fastened by adhesions, and a myoma which had been mistaken for the fetal head. There was no sign of pregnancy.

Treatment of Ectropion.—Martini had always been disappointed with the results of plastic operations on the eyelids until he applied the Italian method of a pedunculated flap. In a case reported the woman never complained of disturbances in the arm, while the outcome was highly satisfactory.

Typhus Fever.—Atria is chief of the bacteriology section of the Public Health Service, and he closes his report on the recent typhus epidemic by reiterating that the diagnosis of typhus must be based on the clinical picture, the negative findings with tests for typhoid, and the character of the epidemic. The Nicolle biologic reaction is useful only in experimental research and not for the clinical diagnosis.

Revista de Medicina y Cirugía, Havana

Oct 25, 1919, 24, No. 20

- *Edema of Larynx as Complication. D. Hernando Seguí.—p. 495.

Edema of Larynx as Complication.—Seguí discusses the possible primary causes of edema of the larynx, from syphi-

lis, drinking scalding fluids, trauma, such as a kick in the neck in football, kidney disease, neurotic edema or laryngeal urticaria, and iodid edema. The latter is more common than generally recognized, and is liable to cause fatal asphyxia if potassium iodid is given when the lumen of the larynx is already somewhat obstructed by pathologic infiltration. He warns expressly against iodid when there is the least tendency to edema. Whatever the cause, treatment should be with absolute repose, opium and bromid to quiet the cough, very cold or very hot applications around the neck, and spraying the larynx with a suprarenal-cocain solution, preparing for the tracheotomy which may become necessary. He advises the intercrico-thyroid operation as easy, rapid and harmless; only in case of chronic disease, with secondary edema, the tracheotomy had better be lower. Angioneurotic edema calls for rapid derivative measures and disinfection of the bowel; edema with chronic nephritis indicates a purge, theobromin, and suppression of salt in the food.

Nov. 10, 1919, **24**, No. 21

*Cough from Reflex from the Ear. G. M. Landa.—p. 528.
Sterilization According to the Pharmacopeia. H. González Arrieta.—p. 530.

Reflex Cough from Impacted Cerumen.—Landa was unable to find any cause for the spasmodic cough in the young child except signs of eczema and excess of wax in one ear. There was no further coughing after the ear had been cleared out. The cough resembled whooping-cough, but it occurred only during the daytime. The nerve connection readily explains the irritation of the external laryngeal nerve from pressure by cerumen on nerve fibers in the ear.

Semana Médica, Buenos Aires

Oct. 9, 1919, **26**, No. 41

*Brain Complications of Otorrhea. B. S. González.—p. 407.
Dyspnea with Heart Disease. L. J. Facio.—p. 419
*The National Tuberculosis Sanatorium. E. R. Coni.—p. 421.
Diluted Vaccine Therapy of Typhoid. P. H. Dedomenici.—p. 433.

Complications of Otitis.—González emphasizes the necessity for referring a patient with otorrhea to a specialist without wasting time on ordinary measures, relating a case in which the practitioner tried various measures for over two weeks before sending the patient to the ear surgeon. By that time the cerebral abscess had reached an inoperable stage. Sixteen illustrations are given of the necropsy findings in the brain. The anatomic specimens in this case, the brain, meninges and temporal bone, form an object lesson on the danger of delay in cases of otorrhea. The set is to be kept together in the museum, so that it can be studied in preparing monographs on pathologic conditions in this region.

The National Sanatorium at Cordoba.—Coni took charge of this sanatorium in June, and this is his formal detailed report of its condition and of his work there during his less than three months' incumbency. His resignation accompanies the report; the deficiencies and disorganization discouraged him too much to continue his work there.

Oct. 16, 1919, **26**, No. 42

Military Anthropology. J. W. Howard.—p. 449.
Chronic Hemorrhagic Nephritis. H. L. Caretti.—p. 453
*The Symbiotes. J. P. Garrahan.—p. 462.
Functional Reactions of the Aconitins. J. A. Sánchez.—p. 468.
Sanatoriums for the Tuberculous in Argentina. E. R. Coni.—p. 472.
Tuberculosis in Mountainous District. J. F. Mieres.—p. 473.

The Symbiotes.—Garrahan describes with much detail Portier's theory of the symbiotes, the reunion of symbiotic micro-organisms in the mitochondria apparatus in the cell. Portier declares, "Le symbiote est l'organe de la synthèse."

Siglo Médico, Madrid

Nov. 15, 1919, **66**, No. 3440

The New Tubes for Roentgen Work. B. Navarro Cánovas.—p. 977.
Repression of Mendicancy. G. Marañón.—p. 980.

Nov. 22, 1919, **66**, No. 3441

*Serotherapy of Anthrax. F. Murillo.—p. 1001.
*Transformation of Sanatoriums into Villages. J. Sixto.—p. 1004.
Diagnostic Tests for Syphilis. D. T. Morató Cárdenas.—p. 1005.

Serotherapy of Anthrax.—Murillo comments on the "extraordinary frequency of anthrax in Spain, and the fact that it is so seldom fatal, notwithstanding the gravity of the lesion." He estimates that there must be from 2,000 to 3,000 cases in Spain every year. It has been given as the cause of death in from 0.56 to 1.09 per thousand of the total deaths since 1904. Several hundreds of patients have been treated with an antiserum, made at the Instituto de Alfonso XIII, with very favorable results. Sheep and horse antiserum have given the best results to date, except the experiences with normal beef serum recently reported from Argentina with a death rate of only 1.5 per cent. in the first series of 200 cases and of 11.6 per cent. in a later 172 cases. The average thus was 4.5 per cent.

Village for the Tuberculous.—Sixto urges that a model village be planned for the tuberculous instead of a merely hospital or sanatorium existence. Each family would have its own house, some member of the family serving as the attendant of the tuberculous. He calculates that the expense would be about a third more per bed than in the sanatorium, but the advantages would outweigh this. The tuberculous would take advantage of treatment at an earlier stage if they did not have to be separated from their family.

Berliner klinische Wochenschrift, Berlin

Sept. 29, 1919, **56**, No. 39

Silver Salvarsan Sodium. Bruhns and Löwenberg.—p. 913. Cont'd.
*The Biology of Lymphocytes. S. Bergel.—p. 915.
Artificial Arm after High Amputation. R. Zuelzer.—p. 919.
War Diet in Relation to Rachitis. A. Japha.—p. 921.
Flour from Lupine Seeds. A. Alker.—p. 923.

The Biology of Lymphocytes.—As the result of his experiments on guinea-pigs and rabbits, Bergel has reached, in regard to the classification of lymphocytes, certain conclusions that are at variance with the doctrines of Ehrlich. The investigations of Ehrlich brought him to the conclusion that the polymorphonuclear, neutrophil leukocytes and the mononuclear, basophil lymphocytes were, by reason of their different morphology, genesis and staining characteristics, to be regarded as distinct cell types. Bergel had shown previously that the lymphocytes contain a fat-splitting ferment. This finding strengthened Ehrlich's conception of two distinct cell types, as it gave proof of a functional difference. The knowledge of the presence of the ferment made it easier to understand biologically and clinically the lymphocytosis regularly observed in many conditions; for example, it explained the increase in the lymphocyte count brought about by a diet rich in fat, and also the part the lymph nodes play in the assimilation of fats. On the other hand, Bergel finds that the lymphocytes should be viewed more comprehensively than Ehrlich viewed them; that is, Bergel would classify functionally as lymphocytes the mononuclear cells and also the transitional forms that are characterized by a crescent-shaped (but never polymorphous) nucleus and by a non-granular basophil protoplasm, for the reason that such cells may develop from or into typical lymphocytes. Bergel claims to have shown that also the small lymphocytes have ameboid motility and phagocytic power for fats. He thinks he has proved by means of oil and lipid injections that these substances exert an elective chemotactic influence on the lymphocytes within the vessels and attract vastly more mononuclear lymphocytes than polymorphonuclear leukocytes. The lymphocytes thus migrate out of the vessels, seize the fat globules with ameboid protoplasmic processes, and digest them or pass them on to the lymph nodes and the spleen.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 11, 1919, **49**, No. 50

*Influence of Ovaries on Glycemia. C. Baillod.—p. 1897.
*Blood-Platelet Extract by the Mouth. W. Jost.—p. 1909.

Influence of Ovaries on Sugar Content of Blood.—Baillod concludes from his clinical and experimental research that whereas injection of epinephrin in physiologic conditions raises the sugar content of the blood to a certain extent, this reaction is more intense and occurs more rapidly in the absence of ovarian functioning.

Action of Blood-Platelet Extract by the Mouth.—Jost reports that the blood platelet extract known as coagulen is absorbed by the digestive tract. Given by the mouth, it aids materially in shortening coagulation time. It thus helps to combat a tendency to hemorrhage, but in urgent cases the subcutaneous and intravenous routes should be used at the same time.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1919, 148, No. 1-2

Pathogenesis of Steeple Skull. A. Rieping.—p. 1.
Incarcerated Hernia. J. Dubs.—p. 52.
Abnormally Large Foramina in the Skull. R. Pamperl.—p. 91.
Access to Projectile in Front of Second Cervical Vertebra. Remmets.—p. 111.
U. Clamps for Fractures. Remmets.—p. 118.
Isolated Fracture of Acetabulum. Kreglinger.—p. 129.

Pathogenesis of Steeple-Skull.—Rieping gives an illustrated description of an infant born with extreme oxycephaly. The details of twenty-one particularly pronounced cases of steeple-skull from the records are tabulated, and the possibility of various methods of operative intervention is discussed. His case confirms that oxycephaly is the result of a displacement of the primary ossification center of the frontal and parietal bones toward the coronary suture. This entails the premature growing together of the latter. It may be inherited, with other malformations.

Clamps for Fracture.—Remmets' clamps are shaped like a very broad U, the pointed tips triangular to ensure a perfect hold. The ends of the bone are held in place with forceps like veterinarians' hoof-tongs, the handle resting on the table, and the clamp is driven in with a holder and hammer. The limb can be moved cautiously from the very first, and only a light dressing is required. The staple can be applied through a small incision in the skin. He has used these staples in twenty-seven cases, some of which are illustrated to show the fine results realized.

Fracture of the Acetabulum.—Kreglinger's experiences testify that with early diagnosis and proper treatment the outlook is favorable for permanent healing without special deformity.

Münchener medizinische Wochenschrift, Munich

Sept. 12, 1919, 66, No. 37

Composition of the Blood in Arid Climates. Grober.—p. 1043.
Devitalized Tissue and Gas Gangrene. S. Weil.—p. 1046.
Serologic Reactions in Syphilis and Carcinoma. E. Fränkel.—p. 1047.
The Colloidal Gold Reaction. H. Eicke.—p. 1049.
Best Technic for Sending Specimens for Early Diagnosis of Syphilis. E. Hofmann.—p. 1050.
Terminology for Various Types of Bacteria Carriers. H. Dold.—p. 1052.
Treatment of Acute Appendicitis. A. Krecke.—p. 1052.
Splint for Fractured Femur. A. Nussbaum.—p. 1056.
Pathologic Bone Conditions from Undernutrition. F. Eisler.—p. 1057.
Chemotherapy in Trichophytosis. K. Taege.—p. 1058.

Composition of the Blood in Arid Climates.—At the congress of German internists, held in 1911, the supposed beneficial effect of arid climates on renal and respiratory diseases was discussed. The supporters of the view that a dry climate is beneficial based their belief on the assumption that in arid climates the increased secretion by the sweat glands and the kidneys brought about an increased excretion of waste material. For this reason, they argued, an accumulation of urinary constituents in the blood—enough to induce uremia—could not take place. This made it desirable to study the blood in arid climates. Grober was chosen for a three months' study of the question, and on the advice of expert geographers southern Tunis in northern Africa was selected for his investigations. Belad el Djerid, or the date palm country, the latitude of which is 34 north, was the exact spot chosen. To the south lies the Sahara Desert; to the north, extensive salt marshes, dry in summer. The mean winter temperature is 12 C. (53.6 F.) the summer temperature ranges usually between 30 and 40 C. (86 and 104 F.), the maximal temperature being, however, above 50 C. (122 F.). The minimal temperature is slightly below freezing. It hardly ever rains, and even cloudy days are rare. Rain is often absorbed by the dry atmosphere before it reaches

the earth. Through government aid (the country is a French protectorate), religious and superstitious scruples were overcome and 200 subjects were secured. Many were rejected because of intestinal parasites, malaria and syphilis. The records of only seventy-nine of the healthiest subjects were taken. The primitive inhabitants, the Berbers, and Arabians were selected in preference to others, as they had been exposed longest to the climatic conditions. No peculiar difference in form or staining characteristics of the red and white blood corpuscles were noted. Blood specimens had to be from finger pricks, other means being prohibited on religious grounds. The average results of the blood tests were: erythrocytes, 6,300,000; hemoglobin, 99; specific gravity: whole blood, 1.057, blood serum, 1.026; refractometric determination of albumin, 8.5; solids, 22.24 per cent. The red cell count was much higher than among Europeans. Hemoglobin was also slightly increased. The rest of the values are not significant. Grober therefore reaches the conclusion, which he regards as important from chemical, pathologic and physiologic standpoints, that even under extraordinarily low humidity conditions, such as were found in Tunis, the blood preserves its usual composition. The assumption that in arid climates there is an increased excretion from the blood of urinary constituents by way of the sweat glands is therefore refuted. This does away then, he thinks, with the supposed indications for sending kidney patients to arid climates.

The Significance of Devitalized Tissue in Gas Gangrene.—Weil found that a small fraction of the ordinary lethal dose suffices to cause the death of guinea-pigs when the causative agent of gas gangrene is introduced into crushed or torn muscle tissue, whereas in healthy tissue the growth of the causative agent is checked at once. This proves that healthy tissue has a marked defense reaction that is lacking in damaged tissue. The conclusion would therefore seem justifiable that a slight gas gangrene infection in a crushed or lacerated war wound would develop rapidly and practically unhampered. The spread of the infection does not depend alone on the number of gas bacilli but also on their virulence, or ability to form toxins. The virulence of the bacillus may be an inherent quality of a given strain before entering a wound, or the high virulence may be developed within a wound, owing to the presence of torn tissue. The pathologic-anatomic picture of the infection produced by the Fraenkel strain was practically the same in animals whether the causative agent was introduced in torn or in healthy tissue. It was found that the bacillus of malignant edema could cause edema and also be a gas producer, which verifies clinical experience. Weil's experiments, furthermore, proved conclusively that gas gangrene serums have slight or no protective value if the seat of the gas infection is in devitalized tissue, and that serotherapy must be supplemented by surgical measures if gas gangrene is to be avoided or combated.

Clinical Importance of the Colloidal Gold Reaction.—The main difficulty with the colloidal gold reaction, Eicke finds, is the preparation of the colloidal gold. The trouble lies in the extreme sensitiveness of colloidal gold to chemical influences; even the alkalinity of the glass may give the solution a bluish tinge and render it useless from the start. Another frequent cause of failure is that fresh, doubly distilled water is not used. The colloidal gold reaction furnishes an interesting proof of the baneful effect of exceedingly slight impurities in water. The main value of the colloidal gold reaction is that it gives us a means for the early diagnosis of neurosyphilis. At the Rudolf Virchow Hospital, Berlin, it has established the syphilitic origin in many obscure cases. In one case of optic neuritis, the etiology was baffling. The personal and family history was negative. The blood Wassermann test was negative, but the colloidal gold reaction gave the typical curve of cerebrospinal syphilis. The patient, who was seriously ill, was at once given specific treatment with good results. If it should prove possible to simplify the preparation of the colloidal gold, this reaction might be regarded as ideal and would be of the greatest value to medicine.

Wiener klinische Wochenschrift, Vienna

Nov. 6, 1919, 32, No. 45

- *The Peripheral Arteries in Cardiac Insufficiency. Wiesel and Löwy.—p. 1083.
 Vessel Changes in Influenza. O. Stoerk and E. Epstein.—p. 1086.
 Hexamethylenamin by the Vein in Acute Arthritis. F. Deutsch.—p. 1086.
 Subcutaneous Injection of Nucleins. P. Habetin.—p. 1091.
 *Old Irreducible Hernias. L. Schönbauer.—p. 1093.

Pathology of the Peripheral Arteries in Acute and Chronic Cardiac Insufficiency.—Wiesel has long asserted that many of the clinical symptoms which are commonly ascribed to failure of the heart muscle, or traced to nervous, vasomotor influences, have in reality their origin in pathologic changes in the peripheral or outer arteries. The clinical symptoms in impaired circulation frequently could not be explained by postmortem anatomic findings. Often in serious cases the heart was found practically unimpaired. On the other hand, postmortems of elderly persons had revealed that chronic disturbances of circulation do not always accompany atrophic hearts. Wiesel and Löwy admit that anatomic findings alone do not suffice to give an absolutely clear picture of the causes of disturbed circulatory function, but they think their findings in twenty cases that came to necropsy may form a basis for further research. Arteries from various parts of the organism were examined histologically, and the findings showed pathologic conditions in at least all the chronic cases of impaired circulation. The degree to which the circulation was impaired also corresponded in a general way to the various stages in the disease of the arteries. The disease affects primarily the middle coat and spreads later to the elastic coat, the intima being rarely invaded. This is the main feature differentiating the disease from arteriosclerosis; nor were atheromatous patches found in the media, such as are found in the intima in atherosclerosis. The process that Wiesel and Löwy describe is purely degenerative and not inflammatory. The starting point may possibly be the vasa vasorum, of which they found some indications. Recovery is not excluded, but they regard the changes within the vessel walls as ordinarily permanent. They characterize the various stages of the degenerative process as follows: (1) foci of edematous infiltration in the tunica media; (2) separation of the muscular fibers so that they present a ragged appearance; (3) along with changes in the nuclei, muscular degeneration, evidently the result of faulty nutrition; (4) formation of necrotic foci; (5) restorative processes: muscle formation, atypical fiber layers, long muscular fibers in annular muscle; (6) evidences of cicatrization and calcareous infiltration in the tunica media.

Irreducible Hernias of Long Standing.—Schönbauer says that the main difficulty and the chief danger that is encountered in any attempt to reduce by a radical operation a large hernia of long standing is that during the course of time the abdominal space has become much retracted, so that there is no longer room for the intestine. If by dint of much work the hernia is reduced, serious abdominal distention is likely to follow, which will frequently result in the diaphragm being pushed upward, possibly to the third rib. This condition may have fatal consequences. If reduction of the hernia is extremely difficult, he thinks it is better to resect a portion of the intestine, up to three meters. If this is not done and incarceration results, it may be necessary to remove an even greater portion. He describes two fatal cases; the hernias were of twelve and thirty years' standing. Death occurred from crowding of the lungs in one case, plus incipient peritonitis in the other.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 11, 1919, 2, No. 15

- *Raying after Cancer Operations. P. M. van der Haer.—p. 1058.
 *Pituitary Diabetes. J. Koopman.—p. 1071.
 *Case of Gastric Syphilis. W. F. Suermondt.—p. 1076.

Postoperative Raying.—Van der Haer relates that there has been recurrence in only one of his twenty cases of mammary cancer in which the site of the cancer was exposed to the roentgen rays after its removal. In twelve the interval

since has been three years and in all it has been over two years.

Organotherapy in Diabetes.—Among the arguments in favor of the assumption that more than one endocrine organ may be involved in the production of diabetes, Koopman mentions that the suprarenals have sometimes been found diseased in diabetes; that the reaction to phlorizin is often exceptionally severe in exophthalmic goiter, suggesting involvement of the thyroid; that this excessive reaction is not observed after partial thyroidectomy, and that the tolerance for carbohydrates is abnormally low with exophthalmic goiter. Müller has reported a case of the latter given thyroid treatment; sugar appeared then in the urine and the patient died in diabetic coma. Such facts suggest some participation of the thyroid in the etiology of diabetes. The pituitary also may be involved. Diabetes has been observed in 40 per cent. of the cases of acromegaly, but acidosis and coma are extremely rare in such cases. Steiger could find only five cases in his compilation in 1917. In one of Stadelmann's two cases, after death in coma, the pituitary was found diseased but the pancreas was apparently sound. In Steensma's case, the girl had diabetes and a tendency to obesity; radiography showed abnormal conditions in the sella turcica; carbohydrates could not be tolerated, but pituitary treatment gave good results.

Koopman has encountered two cases of pituitary diabetes which he describes in detail, calling attention to the absolute intolerance of albumin in both. The first patient, a man of 40, had no glycosuria after 100 gm. of bread, but after 50 gm. bread and 50 gm. meat there were 38.6 gm. sugar, and after 100 gm. bread and 50 gm. meat, 69.2 gm. sugar. The roentgen findings in the pituitary region were normal and the Wassermann reaction negative. But after three days of tentative pituitary treatment, no sugar appeared in the urine after ingestion of 200 gm. bread and 50 gm. meat, and even when this meat ration was doubled, only 16.4 gm. sugar was found in the urine. The patient during a whole year presented glycosuria whenever the meat ration was increased, while carbohydrates did not increase the sugar content. Whenever the pituitary treatment was interrupted, sugar appeared in the urine by the second day. Acetone and diacetic acid were never observed after the very first. The second patient presented much the same picture, but radiography was not available. The glycosuria was brought under control with pituitary treatment but the man wearied of it in two months and of the restriction of meat, and dropped the whole, dying three months later in coma. In conclusion Koopman extols the Allen fasting treatment of diabetes as probably destined to be "the" treatment, and points out that a trial of this may aid in the differentiation of this pituitary form of diabetes. In any event, the trial can do no harm. The classic method of estimating the tolerance does not give an insight into the metabolism in diabetes; the sugar content of the blood is more instructive than that of the urine. If a special susceptibility to albumin is discovered, the pituitary should be thought of.

Syphilis of the Stomach.—In Suermondt's case there was nothing to suggest syphilis in the woman of 47 who had had stomach symptoms for seven years, ascribed to ulcer: local pain, worse at night, and occasional vomiting, but no blood in vomit or stools. After a few mouthfuls she always felt as if the stomach was full. The roentgen findings were interpreted as plastic linitis, but the operation revealed syphilitic changes in the small contracted stomach and in the liver. Under specific treatment the outline of the stomach grew larger and there was no further vomiting. Six roentgenograms taken at intervals during the six months show the characteristic findings before and after treatment.

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- Surgical Treatment of Chronic Gastric and Duodenal Ulcer. Pers.—p. 1343.
 Noguchi's Leptospira in Etiology of Yellow Fever. V. Jensen.—p. 1355.
 Case of Gonorrheal Phlebitis. H. Boas.—p. 1358.

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RELATION OF THE DEVELOPMENT OF THE GASTRO-INTESTINAL TRACT TO ABDOMINAL SURGERY*

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THE RELATION OF ANATOMY TO PRESENT DAY SURGERY

The late Corydon L. Ford, professor of anatomy at the University of Michigan Medical School, was justly considered the greatest teacher of anatomy of his time. I well remember the three years in which I studied anatomy under him, and the impression he made on the students by his clear and forceful presentation of this ordinarily dry subject. He was then a man past middle life; he wore a beard, shaved the upper lip, and because of a congenital clubfoot he walked with a decided limp by the aid of an ivory-headed cane. I speak of these physical factors because they were part and parcel of the man in relation to his teaching. He presented anatomy not alone as a fundamental science which it was necessary to master for the purpose of laying a foundation for clinical medicine, but as a living thing to be considered in almost every professional act. He was closely in touch with the clinical issues of his time, and with anatomy he taught most valuable lessons in physiology and pathology, so that the student gained knowledge of his subject in its relation to his work. The university courses in surgical anatomy were excellent, yet Ford taught us more surgical anatomy than we learned in these special courses, and he also taught us medical anatomy, in order that we might see the patient from the anatomic standpoint, and recognize pathologic deviations from the normal in the early stages. We were drilled in the use of Holden's "Anatomical Landmarks"; I have spent many hours with this little book, going over the living body that I might learn the relation of the external to the internal.

As volunteer assistant I had the further privilege of demonstrating anatomy at the University of Michigan, and the fascination for anatomic detail in relation to medicine and surgery has remained with me. My seat companion was the late Franklin P. Mall, afterward professor of anatomy at Johns Hopkins, and the most distinguished anatomist of his time. Mall was a choice spirit, an anatomist of the research type. On one occasion in showing me the manner in which the heart, by

its peculiar twisting contraction, empties all the blood from its cavities as one would wring a cloth, he remarked that a cavity like the bladder cannot empty itself to the last drop by contractions alone. He said that anatomy since Ford's time had dealt too much with abstract matter. Mall's observation has an important bearing on catheter cystitis, an infection of a small amount of residual urine in an overstretched organ.

During my active experience in surgery, working with many different assistants, I have not always been impressed with their knowledge of anatomy, although all have possessed a fair knowledge of pathology. At times it would seem that they were more familiar with minute pathology than with anatomy. Microscopic histology and pathology, while not overdone, have been allowed to overshadow anatomy and gross pathology—these the surgeon or internist must see with his own eyes if he is to do his best work. It is a question in my mind whether, generally speaking, anatomy is as well taught today as it was in my student days; whether it is taught with a view of instilling in a man a love for the subject, or merely as a foundation for medical practice. I believe this tendency is correctly interpreted by teaching anatomists of the type of Jackson and others, who are taking steps to remedy the existing defects by the better balancing of anatomic teaching. This is also true of the teaching of present day pathologists.

In surgery of the abdomen especially, a wide knowledge of embryology and anatomy is essential. In the olden time when operations were done in late periods of pathologic conditions, and were destructive rather than reconstructive because it was necessary to save life and it was too late to save function, one could fully appreciate the answer of the distinguished surgeon who originated excision of the hip when asked concerning the anatomic details of the operation: "Damn the anatomy; stick close to the bone." Today the bulk of surgery is not done for gross defects but for pathologic conditions which have not deviated from the normal to such an extent that destructive surgery is necessary, but are still in condition for reconstruction. It has been said that the anatomist never made a good surgeon; that it was the pathologist who made the surgeon. This is true only of the vanishing German type. The surgeon of tomorrow must follow in the footsteps of such men as Deaver; he must be an anatomist and a physiologist, and living pathology must hold a greater place in his mind than the pathology which has been developed from the mortuary and has dominated medicine for the past generation.

For many years I have been interested in elucidating problems of surgery of the abdomen. Clinical diag-

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nosis has been notoriously unreliable, and the postmortem does not show the chronic disease from which the patient was sick during life, but rather the particular complication from which he died. Always, when I have faced a new problem in this field, I have gone back to embryology, anatomy and physiology in order to gain an idea of the meanings of those pathologic deviations which we are called on to treat. It may not be out of place at this time to outline sketchily some of the anatomic and physiologic principles that have grown up with the surgery of the abdomen, and on which depends the explanation of many phenomena that could not otherwise be understood.

From the time the food passes through the pharynx until it enters the rectum we have comparatively little control over it. Some control is exercised in the esophagus and even in the fundus of the stomach so that by initiating retrograde movements, retching, and so forth, some food may be ejected. The same is true in the sigmoid; but even in it the control at best is but partial and indirect. The biologists have pointed out that the theory of the three blastodermic membranes is a working rule and not a law, having many exceptions; but at least it leads to logical thought. To a certain extent this is also true of the idea of the derivation of the gastro-intestinal tract from the fore, middle and hind guts. Yet these primitive derivatives, while not as exact in the present day human body as might be desirable from a purely scientific point of view, have great value as outlines for the student.

From the foregut come the stomach, the duodenum down to the common duct, the liver and the pancreas, all organs which prepare food for digestion but do not themselves absorb. The stomach does not absorb even water, although it will take up certain chemicals and poisons, alcohol, for instance. The derivatives of the hindgut likewise absorb nothing except certain chemical substances, and rectal feeding, as spoken of in its ordinary sense, does not exist: it is simply a means whereby material placed in the rectum is quickly carried by what Bond calls "mucous currents" back into the derivatives of the midgut for absorption. The so-called colon tube passes out of sight through the anus, coiling in the rectum, and but seldom passes the rectosigmoid barrier. The derivatives of the foregut have their blood supply from the celiac axis. The derivatives of the midgut, in which absorption takes place, are supplied from the superior mesenteric artery, while the inferior mesenteric artery supplies the derivatives of the hindgut as far down as the rectum, and very largely the rectum also, although the rectum and anal canal obtain a small supply from the middle and external hemorrhoidals because of their origin from the cloaca and the proctodeum.

Rosenow's work on the specificity of bacteria shows that bacteria that have been cultivated in certain soils, in the gallbladder, for example, when placed in the circulation, are peculiarly attracted to the organ to which they have been acclimated. That is, strains of bacteria derived experimentally from a gallbladder will more often set up a cholecystitis than if they were derived from some other organ. This is true along so many lines connected with the vascular system that we must admit at least the possibility that the blood supply is to a certain extent specific and that organs exercise some peculiar chemotaxis which physiologically and pathologically directs certain substances of the blood content to them. How else can we explain the rapidity with which phenolsulphonephthalein is

eliminated through the kidneys? And recent work in physics suggests that the attraction may be a physico-chemical one. Very delicate instruments appear to show that each organ has its own electrical reactions and polarity, suggesting that cancerous growths can be recognized in this way.

Embryologically the first portion of the duodenum ends, not at the pylorus but at the common duct, and the duodenum above the common duct embryologically is a part of the stomach and a vestibule to the small intestine; like the stomach and other acid-containing organs, it is extremely liable to ulceration. Ulcers of the duodenum occur more commonly in men than in women, possibly because the first portion of the duodenum in women is more nearly horizontal, naturally permitting of a higher alkaline level for the bile and pancreatic juice, and thereby reducing the liability to ulceration. In animals with bilocular stomachs the division between the two stomachs is at the incisura of the human stomach, and the physiologic activity of the pyloric half of the stomach, especially at the incisura, is quite evident on roentgen-ray examination, although the musculature composing the primitive sphincter has disappeared.

The termination of the absorbing intestinal area in the transverse colon near the splenic flexure embryologically marks the end of the absorbing area. It is interesting to note that, although the proximal half of the large intestine has no marked anatomic differences from the left half, in the embryo villi are to be found in the right half which are similar to the villi of the small intestine, although they disappear as development proceeds. An observer, watching with the roentgen ray the churning back and forth in the head of the colon sees that the greater part of this activity is proximal to the location of the cecocolic sphincter which exists in the ascending colon of some of the lower animals, and that physiologic contractions are most marked in this situation. Retardation of the passage of food through the intestinal tract has its origin in embryologic physiology. Muscular control by means of sphincters, delay by means of the valvulae conniventes which also present larger exposed surfaces for absorption, delay by sacculations, as in the large intestine, and mechanical delays, such as the high attachments of the splenic flexure which necessitate muscular activity in order to pass the food refuse into the nonabsorbing part of the large intestine and render the descending colon physiologically empty, are examples. The rectosigmoid is a most remarkable mechanical device for retardation of food end-products. Since nature is most sparing of waste, even of water, in the terminal half of the large intestine, especially the sigmoid, the fluids are gradually squeezed out of the refuse and passed by reverse currents back into the proximal half of the colon for absorption.

Rotation has great surgical significance. In the embryo and in many lower animals throughout life the stomach hangs with its lesser curvature facing ventrally; and embryologically the lesser curvature is the anterior wall of the stomach. Rotation turns the stomach and pancreas on their right sides. The pancreas, embryologically an intraperitoneal organ, loses its posterior layer of peritoneum, which becomes fused behind with the fascia. This explains why, in the type of acute pancreatitis and fat necrosis which might be picturesquely called "perforation," the pancreas may involve the fat behind the peritoneum as well as the intra-abdominal fat; why occasionally, in traumatism,

pancreatic secretions escaping into the lesser cavity of the peritoneum may penetrate into the omentum and form a collection of fluid in what is known as the peritoneal bursa, reopening the cavity which in fetal life exists between the layers of the omentum before they are fused as high as the transverse colon.

The position of the duodenum is altered by rotation and its third portion becomes retroperitoneal, a fact of great importance in connection with operations on the right kidney. Unless care is exercised in performing a nephrectomy in cases in which there is chronic inflammation around the pelvis, and especially in malignant disease, the duodenum may be injured, and immediately or a few days later a fistula form from which the patient may die unless it is repaired anteriorly by a transperitoneal operation. Very scanty mention of this accident is found in the literature, but I have reported several cases of this character. Unless careful dissection is made, this retroperitoneal portion of the duodenum also may be injured in the removal of tumors of the ascending colon.

Rotation as it affects the intestinal tract is also of great surgical importance. The large intestine, having its origin on the left side of the body, passes to the right and does not reach its normal situation until after birth. The late peritoneal attachments are often described as veils or adhesions, and are given unwarranted credit for causing trouble. Failure of rotation or partial rotation will cause the physical signs of an appendicitis to appear at whatever point the rotation of the head of the colon is interrupted. The attachments of the large intestine to the right side are not only late and less close than those on the left, but also, since the cubic capacity of the right lower thorax is less than that of the left lower thorax, because of the liver, the right kidney normally lies lower than the left. The nephrocolic ligament may be called on to bear much of the weight of the head of the imperfectly attached colon which acts like the car attached to a balloon, and may, by traction, drag the kidney down. We think of the large intestine as having a short mesentery; but as a matter of fact, it has a very long mesentery on the inner side, which is the only side of importance, as the blood vessels, lymphatics and nerve supply are always to be found in the inner long leaf which follows the colon during its migration. The outer peritoneal attachments which hold the colon in place laterally may, therefore, be divided without encountering any structures of importance, and the large intestine, on its long inner leaf of mesentery, can be drawn out of the body for easy manipulation and operation. There is one exception, that is, the attachments of the splenic flexure are derived from the omentum and contain a blood vessel which must be tied. Some years ago I called attention to this method of mobilizing the large intestine, which is based on these anatomic facts and very greatly aids in operations on the colon.

The small intestine, originating in six primary convolutions on the right side, has its mesenteric attachment from left to right, from above downward, passing behind the umbilicus. This is the reason why in obstructive and other disturbances of the small intestine, unless localized by involvement of the peritoneum, the pain is referred to the vicinity of the umbilicus, although the cause of the pain may be in a loop of intestine at a distance. In picking up a loop of small intestine, it is sometimes difficult to determine which direction is up and which is down. Monks, in a beauti-

ful piece of work, has shown how this can be done with facility. If a loop of intestine drawn out of an abdominal incision is held by an assistant, and the surgeon, grasping the intestine with the fingers on one side and with the thumb on the other, passes down to the bottom of the mesentery, and finds that his fingers and thumb still grasp the root of the mesentery as started above, the direction is up and down; but if the position is reversed at the base, then the direction is the opposite. In picking up a piece of small intestine one should be able to recognize the part of the bowel from its appearance. The upper jejunum is thick and wide, the mesentery is thin, and the vessels are large, long and straight, having but one or two primary arcades close to the base. In the lower ileum the intestine is thin and the mesentery thick, the fat sometimes following the vessels a little way up along the intestinal wall. The vessels are smaller, shorter, and there are a number of arcades, sometimes two, three or four, in the adjacent mesentery. Attention to these details makes ready differentiation possible.

The study of the peritoneum is profitable to the surgeon. The resistance of the peritoneum to infection is an inherited faculty. The meninges and pleura have less resistance. In the earthworm (common angleworm), the food, in its progress through the primitive gastro-intestinal canal, is admitted into the coelom, or body cavity, which is the forerunner of the peritoneum, for direct absorption. The contaminated peritoneum before infection takes place usually needs no drainage after mechanical cleansing; drainage often does harm rather than good. The slowly acquired special resistance of the pelvic peritoneum of women to infections in the course of countless generations of suffering from puerperal and other infections, is well known; and the mortality rate of operations involving the pelvic peritoneum, such as resections of the rectum for cancer, is much less in women than in men.

Let me repeat that the teaching of anatomy, as related to constructive surgery rather than to the destructive surgery of the past, should be based on the needs of the surgeon of today, to enable him to cope with the diseases of today. If I were to write a book (I have no intention of inflicting one on the medical public), I should take up the fascinating story of embryology, anatomy and physiology in relation to the work of the surgeon of tomorrow, the story of the anatomy of the living to enable us to treat the pathology of the living during the early stage of deviation from the normal physiologic state.

COORDINATION OF THE FUNCTIONS OF THE GASTRO-INTESTINAL TRACT

The two most primitive functions of a living body are maintenance of nutrition, and reproduction; and nature has thrown about these functions the greatest possible number of safeguards. First, the body must be nourished, and second, new life is to be brought into being. This is as true of the simple cell as of the most complex organism. The more ancient the organ, the greater its resistance. The small intestine has an enormous resistance to disease and seldom is the seat of neoplasm. The testicle, which is the primitive reproductive organ, has a long heredity and freedom from disease. On the contrary, the ovary, which is descended from the testicle is, like other less ancient organs, such as the stomach, the rectum and the large intestine, a frequent seat of neoplasm.

Methods of control over the visceral functions were established before man had a central nervous system; these controls are still independent of it. It might even be surmised that the attempt of the central nervous system to gain control over visceral and other functions previously established may have to do with neurasthenia, especially its visceral manifestations. Starling well says that those internal secretions which he calls hormones precede all types of nervous systems in visceral control. One is perhaps justified in looking on the sympathetic as the more primitive nervous system and in believing that the means whereby the central nervous system is attempting to gain this control over the vegetative functions is through the autonomic nervous system.

The liver, entirely separated from all its connections, can be made to secrete bile, and the kidney similarly to secrete urine. For that matter, the entire viscera have been completely separated experimentally from the nervous system and even lifted out of the body, and by appropriate mechanical connections made to live and function for some hours. The central nervous system, we find, has more or less control of those organs which have been added more recently, especially organs of convenience, such as the fundus of the stomach, into which a quantity of food may be placed rapidly for elaboration, as the magazine of a coal stove may be filled. The sigmoid and the bladder also have temporary storage function; but in other respects the central nervous system, beyond initiating action, plays a small part in vegetative life.

The growth of the central nervous system in relation to the organs of special sense is interesting. First, the sense of taste, which made the selection of food possible; second, the sense of smell, which enabled the primitive stoma to be turned toward food, and third, the sense of hearing, which was placed in the middle of the head because danger threatens from behind as well as in front. The sense of sight came during the rapid development of all the higher cerebral faculties, and direct pathways were established between the eye and all parts of the brain, so that the sense of sight overshadows in importance the other special senses. Even memory in most persons has its basis in visual phenomena. The relatively short heredity of the central nervous system accounts for its instability.

It is interesting to note that the sympathetic nervous system is in close relation with the endocrine glands, and that the importance of the internal secretion of an organ may be estimated by the closeness of its relation to the sympathetic system. The pituitary, one-half sympathetic and one-half gland, the suprarenal, with its similar association, and the thyroid, are examples; the spleen has no internal secretion of great importance, and only small connection with the sympathetic system.

Still another form of control is found in the primitive character of the nonstriated muscle. These fibers have the power of originating motion independent of a known nervous system. A little piece of the wall of the small intestine will contract for hours when placed in Locke's solution and properly stimulated. Many visceral functions are dependent on the nonstriated muscle. We are indebted to Keith for revelations with regard to the curious nodal system which acts to collect the impulses that have their origin in the primitive fibers of the nonstriated muscle. This has been most carefully studied with reference to the heart. The heart-beat starts in the sinu-auricular node, is

diffused through the auricular musculature, and is passed by the muscle-band of His to the ventricles, timing the ventricular beat. Keith's nodes are composed of a curious type of primitive muscle-cell with some fine fibers from the autonomic nervous system which evidently were added later. These nodes are in effect the controlling ganglions of the action of the nonstriated muscle in organs. Keith has pointed out the situation of eight nodes, four located and four not fully identified, through which control is maintained. When food passes through the pharynx, all direct control is at once lost, and here is situated the first node. The cardia is a true sphincter and normally is closed. The food passing through the esophagus arouses contractions in the nonstriated muscle of the esophagus; these impulses are carried to the second node, which relaxes the cardiac orifice. Failure to relax the cardiac orifice results in that curious condition called cardiospasm from which many persons suffer and starve for years, and often die from obstruction supposed to be due to cancer. If we have knowledge of the nature of the disease, cure is easy and certain. The third node is not at the pylorus as one would think, but at the termination of the primitive foregut near the common duct. It is interesting to note that, as pointed out by Ochsner, there are remnants of a prehistoric sphincter at this point. Disturbances of this node produce the condition called pylorospasm, which accounts for many gastric disturbances masquerading under different names. This node is also concerned in chronic gastric atony and some of the phases of acute dilatation of the stomach. The fourth node is near the duodenojejunal juncture and is concerned normally in peristalsis and in segmentation or pendulum movements of the small intestine, and abnormally in producing gastromesenteric ileus. The fifth node is at the ileocecal juncture and is concerned with many of those phenomena about which Lane has written so interestingly under the general head of ileac stasis. The sixth node is near the middle of the transverse colon, and through its control of antiperistalsis prolongs the retention of food products for absorption in the right half of the colon. The seventh node is in the rectosigmoid region, and disturbances in the function of this node are probably responsible for the giant colon of Hirschsprung's disease. The last, or eighth, node is concerned with rectal control.

It may be said that wherever nonstriated muscle exists, the power of originating contraction exists. The intestine, like the heart, has two beats. The first, called the peristalsis, beats once or twice to the minute. The second, as pointed out by Mall, is the heart of the portal circulation and beats from eighteen to twenty times a minute, forcing the blood to the liver. In the pregnant uterus, the beat of the nonstriated muscle is recognized as the uterine contractions of pregnancy. Keith points out the part played by the nodes in controlling peristalsis, and suggests that they act like a block system on a railroad, and control food progress by controlling sphincters.

The endocrine glands secrete substances which Starling has called hormones; they act through the blood stream and form a most interesting chapter in visceral control; they are closely allied to the sympathetic nervous system, and are often found in glands of double function or glands that at one time have had an external as well as an internal secretion. The gonadal

secretion derived from the interstitial cells of the generative organs controls sex characteristic even when the genital elements are absent. The relation of the external pancreatic secretion dealing with the digestion of fats, starches and proteins has only an indirect connection with the tissue of Langerhans, which has to do with sugar metabolism. The thyroid in the king scorpion is a reproductive gland, and the thyroid function in the human being is closely connected with puberty, in the female, with the pregnant state. Types of life are found in which the thyroid functioned through the digestive tract, and the foramen cecum at the base of the tongue in man marks the site where this secretion was at one time discharged into the intestinal anal. In the present stage of human development, the thyroid is entirely an organ of internal secretion; but through its influence on other endocrine glands, it assists in maintaining reproductive and digestive functions.

The pituitary gland probably corresponds to the trainer gland in the fish stage, and in the course of development was left within the skull instead of on the side of the pharynx. It contains elements derived from the pharyngeal mucosa, and many of its tumors show pharyngeal heredity. Is it possible that this gland, which is so important in the growth of the body, is favorably affected through improved circulation by the removal of diseased adenoids and tonsils? Certainly one often sees a child of slow development, after an operation for removal of tonsils and adenoids, make a most striking physical and mental gain. The coccygeal body (gland of Luschka) has no known function, but it is connected with that stage of development in which the primitive hind or tail gut was part of the neurenteric canal. These prenatal vestiges may be the source of dermoids or neoplasms of peculiar nature, not infrequently malignant, lying in the hollow of the sacrum behind the rectum and eroding the bone. Some theorists have called the external vestigial remnants of the neurenteric canal the posterior umbilicus, and believe that the sequestration dermoids so frequently found in the lower sacral and coccygeal midline have this origin. Keith points out that the internal secretions of the five important endocrine glands, pituitary, suprarenals, gonadal, pineal and thyroid, control racial characteristics of the three great divisions of man, Caucasian, Negro and Mongol.

The sympathetic nervous system was a later development, and correlates visceral action. It stimulates the function of endocrine glands, and is in turn stimulated by their secretions. To the great English physiologist Gaskell we owe our knowledge of the involuntary nervous system. His first work on the visceral nervous system was published in the early eighties. Gaskell pointed out that certain small-calibered medullated nerves pass from the anterior horns of the spinal cord to the great sympathetic ganglion of the thorax and abdomen, which connects the central nervous system with the sympathetic. These connecting nerves enable emotions originating in the central nervous system to influence the sympathetic ganglion. From the sympathetic ganglion small nonmedullated fibers pass directly to their distribution forming the sympathetic nervous system. Gaskell also showed that there are nerves of the same kind which have visceral functions arising from the cranial nerves, and he called these parasympathetics. They are composed of the vagus nerve, the fibers in the third, seventh and ninth cranial nerves,

and the pelvic nerve from the sacral plexus. The parasympathetics are small-calibered medullated nerves with ganglion cells near their distribution, as in the heart itself and in the plexuses of Auerbach in the wall of the intestine. Neither the sympathetics nor the parasympathetics are under the control of the will, and when distributed to the same organ they follow Sherrington's law in that they are antagonistic.

Langley, who contributed much to this work, called the combined sympathetic nervous system (thoracic and lumbar ganglions) and the parasympathetic (cranial and pelvic) the autonomic system. American physiologists, especially Cannon and Crile, have contributed largely to this work. Gaskell pointed out that the sympathetic ganglions develop widespread reactions to stimuli which exercise inhibitory control over the vegetative system independent of the will, and inhibit the parasympathetics. The cerebrospinal nervous system produces conscious and accurate action of the striated muscle system, but has no control, and only indirect effect, on the nonstriated muscles. Langley, Crile, Cannon and Brown have made practical application of Gaskell's discoveries, showing how the fibers derived from the sympathetic ganglions, acting for defense, produce the most widespread and sudden effect when excited by emotions such as fear or anger. The digestive tract is temporarily deprived of function; the heart action and respiration increase in rapidity and strength, the glands of internal secretion, especially the suprarenals and thyroid, are activated, and sugar reserves in the liver and body generally are thrown into the blood stream to enable greater muscular action.

It is interesting to note that the nerves of Gaskell from the anterior horns of the spinal cord to the sympathetic ganglions are direct, and it is only those nerve fibers derived from the sympathetic ganglions themselves that pass to the various organs to produce the widespread effects spoken of, with the exception of the suprarenal gland, which receives fibers from the cord en route. The suprarenal contains within itself true nerve cells, as though at one time a start had been made for a different type of control from that which was afterward developed through the sympathetic ganglions. The parasympathetics of Gaskell, as related to the gastro-intestinal viscera, are composed of the vagus nerve derived from the bulbar division of the parasympathetics, and the pelvic nerve from the sacral plexus. When the emotions, which acting through the sympathetic system cause the sudden necessity for instantaneous use of all the body reserves, have passed away the vagus nerve comes into action and causes the heart to beat more slowly, and reduces respiration. The digestive tract, the stomach, intestine, liver and pancreas, which have been temporarily inhibited by the sympathetic fibers from the solar plexus, are stimulated to function through the vagus parasympathetic acting as a motor nerve through the plexus of Auerbach, and the pelvic parasympathetic motor nerve again permits conscious control of the bladder, sigmoid and rectum, which had been inhibited by the sympathetic fibers from the inferior mesenteric ganglion. One may well believe, however, that while these functions are checked by the sympathetic and are caused to resume action by the parasympathetics, control of their normal activities goes back to the nonstriated muscles, and the internal secretions which were the earliest forms of control. The gastro-intestinal tract is, therefore, largely con-

trolled in its functions by the nonstriated muscle and by chemical substances acting through the blood. The sympathetic ganglions act to inhibit these functions temporarily to produce rapid catabolism and spend reserves prodigally. The parasympathetics set in motion the interrupted anabolic activities and maintain reserves for future emergencies.

It may seem that these well known anatomic and physiologic details need no reiteration, and yet in my association and teaching of younger men in the profession I find that while they may know these facts, they often fail in their interpretation of them. The interpretation of the interesting phenomena which I have cited may not be correct in given instances; but if by "near-right" theories a dry subject may be made to live, the means will be justified and the strain on our memories will be less. We must not forget that memory training is the Confucian method which certainly has not led the Chinese in the paths of progress. Facts do not change. The interpretation of facts constantly changes, and new interpretations of old and new facts are the source of progress. Only as we are doubtful of our interpretations can we hope to advance scientifically.

EPIDEMIC (LETHARGIC) ENCEPHALITIS

CLINICAL REVIEW OF CASES IN THE PACIFIC NORTHWEST *

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"Westward the star of empire wends its way" setting an example that is followed with celerity by the humble but none the less busy germ. Most great epidemics have originated in the crowded centers of Europe or possibly of Asia and thence have traveled westward. On reaching the United States they have developed first on the Atlantic seaboard, within a few weeks or months have traveled to the Middle West, and within a year have invaded the Far West. The great epidemic of poliomyelitis¹ was reported in Sweden in 1905, visited the eastern part of the United States in 1907 and 1908, and came to the Pacific Northwest in 1909 and 1910, that is, between one and two years after it was reported in epidemic form in New York, Massachusetts and in general throughout the East. It had been preceded by cerebrospinal fever by two years. Later, less extensive epidemics of cerebrospinal fever traveled the same way. In 1916 and 1917 poliomyelitis was again epidemic in the Pacific Northwest following similar epidemics in the East, but the disease was much milder and cases were fewer than in 1909 and 1910. Influenza was several months in traveling from the crowded portions of the East to the West, and we had well written accounts of it as it was witnessed in the army camps of the East months before it visited the Northwest.

Epidemic encephalitis proves no exception to the rule. According to Bassoe² it first appeared in Austria in 1917, reached France and England in 1918, and in

the fall of the same year came to the United States. By the spring of 1919 cases were being reported throughout the Middle West. It reached the Pacific Northwest in October, 1919, appearing almost simultaneously in Portland, Seattle and Tacoma. Winslow³ of Seattle presented a paper which was written in the latter days of October at about the same time that I first saw cases of the disease in Portland. At a meeting of the Portland City and County Medical Society Oct. 29, 1919, I reported four cases of this disease, two of which had already been fatal, and I have since (to December 10) examined nine more patients whom I regard as indisputably having this disease and at least four more in whom the diagnosis was open to some doubt. In each of these doubtful cases I saw the patient only once, and I do not know the later course or history.

EPIDEMIOLOGY

Except for the statements already made indicating that the disease occurs in mild epidemics, there is no hint of the method of spread. One of the most curious coincidences that I have ever witnessed occurred among my first five patients, three of whom dated their first symptoms definitely to October 12, and these three patients were separated by a distance of miles and knew nothing of one another. No two cases have occurred in the same household. None of my patients gave a history of preceding influenza, but several of them had low blood pressure and were in poor physical condition at the time of onset, suggesting that whatever the infection, the soil has to be prepared. I am convinced that the disease is not contagious in the ordinary sense of the word, and that there is no reason for quarantining patients other than keeping them isolated in their rooms away from the rest of the household, a precaution which can do no harm and may result in good.

TYPES OF THE DISEASE

Most writers say that the invasion of epidemic encephalitis is slow and deliberate. This is true in some of the cases, but by no means in all. I think I have been able to identify two types of invasion, one of which is rapid and the other slow.

Type One.—The slow type is far more common than the rapid, having occurred in ten of the thirteen cases. In this type the predominating symptoms from the beginning were double vision, slight mental confusion, at times mild delirium, followed by other symptoms which depended apparently on the particular cranial nuclei involved. After a week or ten days, the patients appeared to improve and then developed the so-called lethargy to which the disease owes its name. During this week most of them suffered from insomnia and were given some form of sedative by the attending physician. With the development of the lethargic stage, of course nothing of that kind was required.

Type Two.—This is more interesting in a way than the first type, largely because the manifestations are more dynamic. In this type, the patients complained of some head pain followed by a rapidly developing delirium, which was acute and attended by hallucinations of sight and hearing of the most vivid character.

One patient, a professor, conversed with imaginary friends and acquaintances and delivered lectures to his classes day and night for four or five days. During this time he was

* Read before the Oregon Association of Public Health Officers, Dec. 8, 1919.

* Owing to lack of space, this article is abbreviated by the omission of historical data and a discussion of the etiology of the disease. The complete article appears in the author's reprints.

1. House, William: Acute Anterior Poliomyelitis, Northwest Med. 2: 259 (Sept.) 1910.

2. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. 72: 971 (April 5) 1919.

3. Winslow, Kenelm: Epidemic Lethargic Encephalitis (Nona) in Seattle, Northwest Med. 18: 209 (Oct.) 1919.

able to identify his wife or the nurse, his physician and her visitors, though when asked who a visitor was and then told the name he would say, "Oh, yes I know you, you were here this morning," or something of that sort. He was irascible, could be induced to calm himself, and gave no serious trouble to those who attended him. In rational moments, he spoke of the "hallucinations" from which he suffered and understood that they were unreal, though he mingled fact and fiction at all times. His temperature rose to 104.6 F., gradually subsiding at the end of a week, when it became practically normal. The apathetic condition did not develop until the tenth day. Throughout the illness he complained of pain in the back of the neck and back of the left ear, which was deep seated and at first thought to be due to neuritis of the occipital group of nerves. After the beginning of the apathetic stage, this pain became more troublesome, making him restless at night, and he was sensitive to touch throughout this region.

Another patient with the same group of symptoms was delirious for ten days, lost his way about the house, and talked almost incessantly, yet when spoken to declared he felt well and insisted that he must return to his work, that of a salesman, because of the holiday rush.

A third patient, a woman, aged 23, suffered from the most vivid hallucinations and was so violent that she had to be restrained in a sanatorium whence she was dismissed at the end of a week, quiet though still sick. Double vision and lethargy were present. The further history of this patient is unknown to me except that she is living.

It seems to me that these two types of invasion suggest the probability that the infection may attack the brain at different points. It has been thought that the invasion is from the nasopharynx and that the germ attacks the pons and the surrounding tissues. Such an invasion would produce a reaction in a region which could cause motor nerve palsies and the type of symptoms noted in Type 1. But there is no reason that I can see why the disorder may not equally well attack the anterior part of the brain in the region of the thalamus. In that case, there would be signs of frontal lobe irritation which would naturally produce delirium, such as was witnessed in the three cases already discussed. This delirium was of a type such as I have seen in paresis, in cocaineism and in at least two cases of rabies, in both of which necropsy revealed intense congestion and hyperemia of the anterior portions of the brain.

It is interesting to note that in two of these cases there was absence of double vision and the basilar symptoms described in the first group.

INDIVIDUAL SYMPTOMS

If I were to evaluate individual symptoms in the order of their frequency and importance, I should say that lethargy or apathy is not the most characteristic symptom. Instead I should select:

Euphoria.—This is the most striking symptom of the disease. A feeling of well-being was present in greater or less degree in every patient whom I examined. Notwithstanding unmistakable signs of grave illness, the patients seemed not to be worried by it. When asked how they felt, the patients almost invariably answered "pretty well." An Italian patient up to a few hours before his death invariably said, "Fine, fine, too many doctors," and since he had at least half a dozen he showed keen discriminating power. One patient who could not swallow and who had to be fed said she felt "pretty good," although she knew that talking was difficult and that in a way she was helpless. Even the delirium was never particularly unpleasant, seeming instead to be of a rather happy

type. With convalescence, euphoria was replaced by mild depression in a majority of cases.

Apathy.—This is a better term than lethargy as descriptive of the tendency to quiescence. It begins apparently from ten to twelve days after the onset of symptoms. The patients were never fully asleep. Their expression was blank, their attitude somewhat rigid, and in at least two cases they lay in bed with the hands flexed in a typical parkinsonian attitude. I was early impressed with the fact that the patients really were not somnolent, an idea that I have since found had already been recorded by Bassoe. Indeed, they were extremely wakeful. They lay in bed with eyes downcast or closed, face muscles rather blank and expressionless, seemingly oblivious to what went on around them. But without exception it was possible to rouse them quickly by a spoken word. Their answers were all but monosyllabic, and they then immediately lapsed into the preceding stuporous condition. They took food when offered, sometimes muttered a little, their bodies were slightly rigid, and most of them complained more or less of muscular twitching and jerking which might be anywhere in the body.

Double Vision.—This was present in eleven cases. It was a vague kind of trouble. One patient first complained that while driving a team of horses he had never seen the automobiles so crazy, all of them wanted to run over him. It was four days before he was able to describe this difficulty of sight as double vision. This double vision was present in all eleven cases during the first week, and seldom lasted more than four or five days. This point alone should differentiate the disease from tuberculous meningitis, in which double vision seldom appears before the end of the second or the beginning of the third week. The origin of the double vision in encephalitis has not been made entirely clear. Any of the oculomotor nuclei may be involved, but I was unable definitely to determine which nerve was at fault in any except one case. In that there was distinct weakness of the right sixth nerve accompanying well-marked facial, that is, seventh nerve, palsy. In the other cases I thought there was weakness perhaps of all of the oculomotor nerves. I thought the patients were unable to move the eyeballs in any direction as freely as healthy persons are able to move them. When the eyes were directed either to the left or to the right, there was no fault in the action of the muscles except that the patients found it difficult to hold them in these positions. The tendency was for the eyes to rotate back to the middle line. Nystagmus was absent. The condition suggested not a true lesion of any particular nerve, but generalized weakness of all of the nerves. In other words, there was general ophthalmoparesis rather than ophthalmoplegia. Now, since this symptom in the main lessened or disappeared after the acute stage of the disease, it seems probable that it was due to some toxic effect or possibly to generalized pressure rather than to definite hemorrhagic or inflammatory lesions of the nuclei. The positions of the images were variously such as to suggest involvement of the third, fourth and sixth nerves in different cases; but my impression is strong that the patients did not automatically converge the eyes as in ordinary focusing, though they were able partially to overcome the difficulty by an effort of will.

Nerve Changes.—Other Cranial Nerves: No patient exhibited any symptoms of involvement of the first

nerve. I examined the fundi in six cases and could detect nothing wrong with the second nerve. Ophthalmoscopic examination was difficult because of small pupils, ptosis and delirium, and fundus changes may have escaped detection. The seventh nerve was involved, causing paralysis of the muscles of expression in one case, and in this case alone could I demonstrate distinct weakness of the sixth nerve and possibly also of the fourth. The eighth nerve escaped involvement unless such auditory hallucinations as were witnessed could be attributed to it. This is not likely, as most auditory hallucinations are cortical in origin.

Fifth Nerve: Among initial symptoms in three cases was distinct pain in one cheek bone and in front of the ear. This was a dull, heavy ache accompanied by tenderness on pressure. I am at a loss to know whether this pain was due, as seems possible, to congestion or to other disturbance around the gasserian ganglion or to a lesion of the bone itself. One patient suffered from quite severe pain in the postcervical region, the origin of which may have been either in the suboccipital nerves or periosteal, that is, in the occipital bone or possibly even in the vertebra, for he was tender in these regions. Two others complained of pain in the mastoid region unattended by any demonstrable lesion of the ear drum or auditory canal. The similarity in the disturbances of the cheek bone and back of the ear is evident, but leaves doubt as to whether they were due to subacute neuritis or to osteal changes. I incline to think that all of these pains were neuritic in origin; and if this be true, the fifth nerve is involved in a considerable proportion of all cases.

Ninth and Tenth Nerves: Perhaps this was the most interesting case of the series:

A woman, aged 30, became ill with delirium and double vision. When I saw her at the end of the first week, she was wakeful, sitting up in bed. Her temperature was 102 F. and pulse rate 160. Her respirations were shallow and irregular, and her skin extremely cyanotic. There was a suggestion of exophthalmos, and I at first thought she was suffering from toxic hyperthyroidism. Her physician, Dr. R. C. Yenney, who had known her for years disagreed with me. He also said that clinically he was able to exclude any pulmonary or cardiac lesion. While one was talking to her, her eyes would close sleepily for from ten to fifteen seconds, during which time one could almost see an increase in the cyanosis. Then she would waken with a sudden start, take a few breaths, answer questions, and repeat the performance. This continued for four or five days, at the end of which time she died, apparently as a result of paralysis of the cardiac and respiratory centers.

Twelfth Nerve: This case of twelfth nerve involvement was observed:

A woman, aged 37, walked into my office, sat down, and assumed the characteristic parkinsonian attitude and seemingly went to sleep. She had visited a number of physicians, one of whom had told her husband, so he said, that she was hysterical and should get up and go about her business. I sent her home and to bed in charge of a practical nurse. She remained quiet and passive except as she was troubled by muscular twitchings. At the end of two weeks, she suddenly lost the power to swallow, found difficulty in speaking, and her body gradually became slightly rigid. She was removed to a hospital and fed through a nasal tube for several days, a method which seems better than the passing of a tube through the mouth. She remains in this rigid condition and I fear will die. Notwithstanding all these symptoms her mind is quite clear, she recalls my visits, and if they are brief reports to her husband the next day, pre-

senting a mental state which seems almost incredible when one considers the gravity of her physical condition. She has escaped few of the symptoms which characterize the disease save the early febrile stage, and even that may have been present unobserved.

Temperature Changes.—I did not see most of the patients until the end of the second week. Temperatures were reported between 101 and 103 F. in most of the cases during the first week. In the violently delirious case it rose to 104.6 only once. Two patients appeared to have been afebrile, and both of these pursued mild but characteristic courses to recovery. Fever subsided at the end of a week or ten days in most cases, though in two there was a recrudescence during the third week.

Rigidities.—In several patients the attending physician called attention to some stiffness of the neck which he thought suggested meningitis, but this rigidity was entirely different from the type found in meningitis. It was slight, easily overcome by the patient, and gave rise at most to a sense of discomfort. One patient was said by the nurse to be growing very stiff and rigid, but as a matter of fact there was no real rigidity. The muscles were more in a state of "waxy flexibility," the knee jerks were but slightly increased and ankle clonus was absent.

Skin Eruptions.—One patient during the third week of illness developed a discrete eruption consisting of about twenty pinhead sized petechiae distributed over his arms, shoulders, chest and forearms. These disappeared and were followed by two fresh crops after intervals of a week. This eruption may be of importance since it suggests the possibility that epidemic encephalitis is not a local cerebrospinal disorder but a general constitutional disease. It is not unreasonable to assume that the petechiae were due to the same agent that produced the pathologic changes in the nervous system.

Other Organs.—Involvement of viscera was conspicuous by its absence. The heart and lungs functioned normally except in two instances in which their nerve centers were involved. Only one patient had to be catheterized. There were no bedsores and no other complications.

Spinal Fluid.—Spinal puncture was done in six of the thirteen cases. In all, the fluid was germ free both in cover slip preparations and in culture. The cell count was 6, 26, 27, 46, 50 and 105, the last having occurred in the markedly delirious case described.

Leukocyte Counts.—These were made in only three of the twelve cases, and showed from fifteen to twenty thousand cells in each which corresponds in the main with the observations of others.

DIFFERENTIAL DIAGNOSIS

In typical cases the diagnosis should present no difficulty. The possibility of brain tumor and syphilis are reasonably well excluded by the relatively rapid onset and the presence of fever. Tuberculous meningitis was suggested in some of the cases, but tuberculous meningitis is commonly a childhood disease, and the paralytic phenomena are late and not early manifestations, which is true also of the delirium. Epidemic cerebrospinal fever was suggested in one case by a consultant, but I thought it could be eliminated on clinical grounds, and certainly it was promptly eliminated by spinal puncture. In the delirious cases without double vision, the onset was not unlike that

of other acute infectious diseases, and several days were required before a diagnosis could be made. Ptomain poisoning was a diagnosis made in three cases by the attending physician. All of these patients vomited for a day or two, and all attributed the vomiting to eating canned food. But as other members of the family had partaken of the same food and escaped, it seems to me that the diagnosis was not well founded. Throughout the literature many cases are being reported of cranial nerve palsies following influenza. I think it will be found that most of such cases are really cases of epidemic encephalitis.

PATHOLOGY

There has been only one necropsy among the four fatal cases, and I unfortunately did not see this. Such information as is obtainable from other writers indicates that the lesions are an increase in the cellular elements in the pia-arachnoid and cerebrospinal fluid, that throughout the brain, especially in the gray ganglions and at the base, there is a diffuse perivascular and round cell infiltration with minute hemorrhages not accompanied by necrosis. No organisms have been isolated.

PROGNOSIS AND COURSE OF THE DISEASE

Bassoe had five deaths among twelve cases. Sachs had three fatalities in one group of thirty cases, and five in a second group of fourteen cases. So far four of the thirteen patients whom I have seen have died, and one other is still in danger. Of those patients that appear to have recovered fully, one was in bed five weeks and two weeks later was still weak and tired, though able to be up about the house. Another, whose case had been diagnosed before I saw him as tuberculous meningitis, was able to come to my office in the sixth week. One whose case definitely developed in the second week of October is still bedfast and mentally confused. Of those cases that were fatal, one patient died during the second week, two patients during the third, and the remaining one in the fifth week.

TREATMENT

The treatment must of necessity be symptomatic. Every effort should be made to reduce bodily expenditures to the lowest degree. The patients have to be encouraged to eat, and should be given an abundance of fluid and semisolid food. We are feeding one patient with a nasal tube, finding this easier than to use the ordinary stomach tube. I have given some of my patients salol or hexamethylenamin; but such treatment is empiric.

Selling Building.

Luminous Marking of Ophthalmologic Instruments.—DR. ALFRED COWAN, Philadelphia, writes: The employment of self-luminous paint in place of ordinary paint for marking optical instruments used in the dark room is an improvement. The ordinary letterings on such instruments as electric ophthalmoscopes, the meridians on trial frames, optometers and phorometers, retinoscopic trial cases, etc., are extremely difficult, if not impossible, to see in the dark room. This is all made easy by the application of self-luminous instead of the usual paint. I have had my instruments so lettered, and find that all the old difficulty has been eliminated. It is not necessary to turn on the light to see the marks, and the axes of the trial frame or the numerals on the lenses are just as plain in the total darkness as in daylight. There seem to be several grades of this paint on the market, the better kind, of course, giving greater satisfaction.

THE SIGNIFICANCE OF SOME GENERAL BIOLOGIC PRINCIPLES IN PUBLIC HEALTH PROBLEMS*

RAYMOND PEARL, PH.D.

BALTIMORE

In the year 1917 there were expended in cities of the United States having 30,000 or more inhabitants, for the general purpose of safeguarding and promoting public health, something over 120 millions of dollars. This included about 78 millions for current expenses, and about 42 millions for permanent improvements, the latter expenditure being essentially in the nature of capital outlay. These expenditures represent the interest on roughly two and a half billions, which, even in these piping times, must be conceded to be a large sum of money. Such an annual outlay of 120 millions is not a large one when reckoned per capita of the population involved, amounting to rather less than \$4 per person per year. In the aggregate, though, it is large enough fairly to raise the question as to whether those who pay the money are getting its worth in return. To propound such a question does not per se imply any carping spirit. It may be prompted simply by an honestly inquiring frame of mind, such as that which leads any sensible person to examine into his other and more apparently personal investments. Nor does an honest examination of the fundamentals of public health work imply in the slightest degree any criticism of those public servants who disburse these large sums of money. They are, by and large, sincere and earnest persons trying to do their best. The point which wants examination from time to time is that which relates to the underlying principles of public health work. Why is it done at all? Are all phases of it equally worth doing?

The motives which have led, by gradual but ever larger steps, to the expenditures of such vast sums of money to the end of improving the public health have been various, partly conscious and partly unconscious. Perhaps the chief motive finds its roots in the most fundamental of individual biologic instincts, that of the prolongation of the individual life to the greatest possible extent. With the development of general knowledge and intelligence about medical and hygienic matters, it became clear to any thinking person that two factors of high importance, to say the least, in the determination of his own individual expectation of life were: on the one hand, the kind of environment, particularly in respect of sanitation, in which he had to live; and on the other hand, the behavior, in respect chiefly of personal hygiene, of the people with whom he had to associate. The relative importance of these two factors in determining how long the average citizen was likely to live has progressively increased, at a rather alarmingly rapid rate, with the ever-increasing urbanization of the population. So long as John Doe and Richard Roe lived on widely separated farms, it mattered little to Richard if John's well came to harbor typhoid bacilli. But when both John and Richard got their drinking water from the same city reservoir, it was of vital concern to both if this supply became contaminated. Again, it was a matter of relative indifference to John if Richard had phthisis and freely exer-

* Papers from the Department of Biometry and Vital Statistics, School of Hygiene and Public Health, Johns Hopkins University, No. 9. Read before the American Society of Naturalists, Dec. 30, 1919, in a symposium on "Some Relations of Biology to Human Welfare."

cised the inalienable expectoratory rights of every freeborn citizen, so long as he could keep a mile or so away in the business of tilling his acres. But the case took on a very different aspect when both had to go to and from work in the same street car and sit side by side at the same factory bench. Then John wanted Richard coerced in respect of his personal habits. It is to attain such ends as these that we permit ourselves, if not with enthusiasm, at least with passable equanimity, to be taxed so that the great expenditures I have described may be made for public health purposes.

THE TEST OF SUCCESS OF PUBLIC HEALTH PROGRAMS

Man is easily seduced by *a priori* reasoning. Any program which can be shown to be logical, and which on a basis of logic alone seems calculated to yield desired results, will be embarked on by the vast majority of human beings with furious ardor. Only long afterward does it occur to any considerable number of people to try whether or not in fact, as distinct from logic, the program is yielding the results it was expected to. Few realize the literally awful dangers of logic. Every college student, at least, should be compelled as a prerequisite to graduation to read F. C. S. Schiller on the subject.

Now, the underlying ideas of almost any public health program are so seductively logical that it is only in the most recent times that any one has attempted in any systematic and strictly objective way to see what the program is in actual fact accomplishing. As so very often happens, it appears that there are some discrepancies between what logically ought to happen and what actually is taking place in public health work. In a broad way, the purpose of public health measures is to reduce the death rate by reducing the incidence of disease. In respect of only four causes of death can the program be regarded as having been conspicuously successful when carried out according to the *a priori* logic of the situation. These four are smallpox, typhoid fever, yellow fever, and malaria. Wherever there is a properly organized and vigorous public health service, these are now negligible causes of mortality. A fifth disease, diphtheria, might be thought worthy of inclusion, but from a public health standpoint the case is different. The great achievement with diphtheria has been in the direction of the cure, not the prevention of the disease. But what of other causes of death? In this country more people die of pulmonary tuberculosis than from any other single cause. The causal organism of this disease is perfectly well known. Yet what of its death rate? Pearson has for some years been studying pulmonary tuberculosis. In a paper recently published,¹ he brings up to date his results on the course of mortality from this disease in England during the last seventy years. Let me state his conclusions in his own words:

From '65 to about '95 there was a continuous and rapid fall in the *corrected* phthisis death rate, and also in the percentage which the deaths from phthisis were of all deaths. I further indicated that from 1895 onwards there had been a check to this rapid fall and that the curves seemed to indicate that an actual rise in the phthisis death rate might in the near future be reasonably anticipated. This view was rendered still more probable when I plotted the returns for 1910 to 1914.

He now presents diagrams down to 1918, and reaches this cautious conclusion:

On the whole, it is risky to form a very definite judgment; but having regard to the female phthisis death rate and to the percentage of the phthisis death rate on the general death rate, war difficulties do not seem to me sufficient to obscure the general trend of our graphs (as indicated before the war), namely, that somewhere about 1915 the fall in the phthisis rate which had been less rapid since 1895 would cease altogether and probably be followed by a *rise*. The next five years will show whether this be true or not. We should expect a fall in the phthisis death rate immediately, but on the average the value will remain higher than that of 1915.

Studies, as yet unpublished, which my colleague Dr. W. T. Howard has made of the phthisis death rate in Baltimore during the past ninety years, lead to substantially an identical conclusion.

I have recently² arranged the statistically recognized causes of death in an organologic classification. The results show that, comparing the two quinquennial periods, 1901 to 1905 and 1906 to 1910, the death rate from all causes assignable to the alimentary tract and associated organs concerned in metabolism fell only 1.8 per cent.

FUNDAMENTAL CAUSE OF HIGH DEATH RATES

Such results as these indicate that we are far from having attained that degree of knowledge of the causal factors in the incidence of morbidity and mortality which alone can make possible effective control. Careful study of the matter has convinced me that frank recognition and intensive investigation of the fundamental biologic factors in the problems of public health are essential to further real progress toward their solution. Time is lacking to go here into the reasons which have led to this conviction. What I shall try to do rather is to illustrate my meaning by a concrete example, not perhaps of great importance in itself, but significant as indicating the desirability of considering certain general biologic principles in dealing with public health problems.

The influenza epidemic of 1918 was unprecedented in its severity. Serious as had been earlier outbreaks of this disease, no one of them, so far as records exist, ever approached, not to say equaled, the 1918-1919 pandemic in destructiveness. If one, however, took the trouble to examine the statistics of mortality of last year's epidemic with some care, it became at once apparent that there existed an extraordinarily high degree of variation in respect of the magnitude of the death toll which different communities paid. Not only was there great variation in the rates of mortality incident to the epidemic, but also different communities exhibited marked diversities in respect of every other measurable characteristic of the epidemic, such as: (1) the general form of the mortality curve measuring the degree of explosiveness of the outbreak; (2) the maximum peak mortality rate; (3) the dates of the several mortality peaks; (4) the number of distinct mortality peaks; (5) the time elapsing between the several peaks of mortality, and, (6) the total duration of epidemic mortality.

This observed variation in the characteristics of the mortality induced by the epidemic in different localities seemed to me to constitute one of the most fundamental problems of the epidemic, and about a year ago

1. Pearson, Karl: The Check to the Fall in the Phthisis Death Rate Since the Discovery of the Tubercle Bacillus and the Adoption of Modern Treatment, *Biometrika* 12: 374, 1918.

2. Pearl, Raymond: Certain Evolutionary Aspects of Human Mortality Rates, *American Naturalist*, to be published.

I undertook an intensive investigation of the facts in about forty large American cities for which data were available by weeks.³ This study is still in progress, but certain definite results have been obtained⁴ which I should like briefly to discuss here.

The problem presented itself in clean-cut form. Why did there exist such an extraordinary degree of variation between these cities in the force of the epidemic? The epidemic was universal in its distribution, certainly in large cities. Yet some showed only a relatively slight effect of its presence in their mortality curves, while others were visited with the most appalling destruction of life. An appropriate means of attacking the problem was ready at hand in the method of multiple correlation, a method which combines certain of the most essential epistemological advantages of the experimental method with the advantage of using historical statistical records.

The most obvious point to test first was whether the differences between the several cities in the explosiveness of outbreak of the epidemic (this being the first of its biometric characteristics studied) could be accounted for by the ordinary demographic and environmental differences existing between them. An analysis of the facts relative to geographic location, age constitution of the population, density of population, and rapidity of growth of population in recent years showed immediately and conclusively that these factors had absolutely nothing to do with the variation in the epidemic. Furthermore, unpublished observations on the restrictive and repressive measures used in various communities, such as prevention of public gatherings and compulsory wearing of masks, show that none of these measures had the slightest influence on the course or severity of the mortality. Plainly the search for factors causative of the variation in epidemic mortality must be directed to channels other than those.

In a further attack on the problem, attention was turned to the normal death rates of the several cities; that is, the death rates from various causes which prevailed in these cities before the outbreak of the epidemic. The results were startling. It was found, first of all, that there was a very high correlation between the explosiveness of the outbreak of epidemic mortality and the normal death rate from all causes in the same community. This correlation was made even higher by correcting for, by making constant the chief environmental and demographic differences in the several cities.

In the make-up of the death rate from "all causes," a very small number of diseases play a preponderant part. For example, phthisis and the pneumonias alone account for rather more than a quarter of all deaths organologically classified. Approximately ten causes of death are responsible for over 65 per cent. of the total mortality. These facts at once suggest that the next step in our analysis is to find what particular causes of death are responsible for bringing about the observed high correlation between the rate for all causes and the explosiveness of the epidemic. A somewhat systematic survey along these lines was made by the method of multiple correlation.

Without going into details here, the general outcome may be thus set forth: It was found that the explo-

siveness of outbreak of influenza epidemic mortality was correlated to high degree, after correction for various environmental and demographic differences, with the three great causes of death, namely, tuberculosis of the lungs, organic diseases of the heart, and acute nephritis and Bright's disease, which are primarily dependent on the functional breakdown of one or another of the three fundamental organ systems of the body, the lungs, the heart and the kidneys. Explosiveness of outbreak of the epidemic mortality was only slightly or not at all correlated with the normal death rate from infectious diseases, such as pneumonia, endemic influenza itself and typhoid fever. Further unpublished studies have shown that the total excess mortality from the epidemic, measuring the total number of people who died, is highly correlated with our index of explosiveness of outbreak.

From a broad biologic point of view, these results seem to me to have great significance. The investigations of Pearson, as well as unpublished studies of my own, now unfortunately destroyed but susceptible of repetition, have shown with the greatest force and clearness that the incidence of pulmonary tuberculosis is determined to a very large, if not a paramount, degree by constitutional or hereditary factors rather than by environmental factors. Organic diseases of the heart, and acute and chronic nephritis are recognized by the medical profession as primarily "organic" diseases, in which the constitutional factor is regarded of relatively great importance as compared with such diseases as pneumonia or typhoid fever. Our biometric analysis demonstrates that populations particularly subject to these constitutional diseases were the populations which were least able to withstand the onslaught of an especially virulent epidemic.

The conclusion stands near at hand, not proved but strongly indicated by the evidence now available, that the primary factor in causing the observed variation between different communities, in respect of reaction to the influenza epidemic, was the biologic constitution or organic fitness of the people making up the populations of these communities. Communities in some degree organically unsound, as indicated by relatively high normal death rates from phthisis, organic heart diseases, and nephritis, were less able to meet successfully the attack of a vicious epidemic invader than were those in which these biologic conditions did not exist.

BIOLOGIC NATURE OF PUBLIC HEALTH PROBLEMS

The whole investigation seems to me to illuminate and throw into strong relief the essential point at which this paper is aimed. The great outstanding problems of public health are really broad biologic problems, which can never be satisfactorily solved until they are looked at on this basis, nor until ascertained general biologic principles have due consideration in their study. In particular, it must be recognized that heredity imposes a hard and fast limitation on the effectiveness of palliative or control measures in public health. What is particularly needed, as an essential and integral part of the science of the etiology of disease and of public health doctrine, is a basic collection of organized and digested facts regarding the inheritance of the diatheses of various important diseases, notably phthisis, the pneumonias, and heart and kidney affections. Such a body of knowledge can be acquired in only one way: by the slow, laborious, painstaking

3. Weekly Health Index, Bureau of the Census.

4. Pearl, Raymond: Influenza Studies, I, On Certain General Statistical Aspects of the 1918 Epidemic in American Cities, Pub. Health Rep. 34: 1743 (Aug. 8) 1919.

accumulation of data regarding family histories by specially trained field workers, and the searching analysis of such records by biologists and clinicians thoroughly trained in quantitative methods of research. Investigations of this sort on tuberculosis are being actively prosecuted in my department of the School of Hygiene and Public Health of Johns Hopkins University with the support of a grant made for the purpose by the National Tuberculosis Association. It is hoped that means will be found shortly for extending this type of work to other diseases.

Broadly speaking and with some notable exceptions, the medical man has no real understanding whatever of heredity in the sense that the modern geneticist knows it. He has an infinitely less firm grasp on the matter than his forebears a century ago had. They appreciated in some degree at least the importance of the constitutional factor in the causation of disease and acted in accordance with that appreciation. Then came the wonderful development of bacteriology, which had, among its many desirable results, the unfortunate one of swinging the pendulum of medical thought far off the sound general biologic pathway. Pearson has had the good sense and the moral courage to point out in characteristically vigorous terms the consequences of the domination of too narrowly bacteriologic doctrines, so far as one particular disease, pulmonary tuberculosis, is concerned.

Whatever of blame there may be in this departure from the path of sound scientific development in the broad sense attaches by no means solely to the medical profession. The biologist is as much or more at fault. Immured in the depths of his laboratory cultivating his particular narrow specialty, he has tended to behave as though biology as a science had no concern with the problems of life. He recognizes, if compelled by cross-examination to do so, that the pressing problems of mankind—social, political, medical, public health, and all the rest—are fundamentally biologic problems. But his behavior, except in the rarest instances, does not indicate that it has ever occurred to him that if the scientific method means anything at all, he of all men should not only be able, but should also regard it as his highest privilege and duty, to contribute from that portion of the storehouse of ascertained scientific fact and principle of which he is custodian and trustee to the sound solution of these problems. If I seem to speak warmly and feelingly on this subject, it is because nearly fifteen years' experience in two of the great applied biologic sciences has led to deep convictions in my mind on this subject. When I see millions of dollars literally thrown away each year on charitable and public health activities—which every trained geneticist, if he but used the analytic powers of his mind to the same good purpose that he does in his laboratory, could demonstrate to be futile, because of the limitations which known facts of heredity place on these well-meant endeavors—I am appalled and disheartened at the spectacle science permits to be made of itself.

In less pessimistic moments, however, one finds real encouragement in the fact that, as I believe, times are slowly but steadily changing for the better in this regard. More and more it is being recognized that an intelligent interest in human and vital problems need not necessarily and automatically subject an otherwise orthodox biologist to the scorn and contumely of his professional colleagues. And furthermore, all sorts of

people, business men, labor leaders, administrators and politicians, are beginning to realize vaguely that science, and particularly biology, has discovered and knows some general principles which might, and probably practically would, be of use to them in trying to solve their problems. The biologist has made the mistake of not letting other people realize, and perhaps indeed of not himself clearly realizing, how much he is able to contribute of sound usefulness to the intellectual, social and moral welfare of mankind, as well as to his purely physical well-being. With the development of consciousness of profession, which is taking place ever more rapidly, it is confidently to be expected that his council will be more often asked, heard and heeded than has been the case in the past.

THE TEACHING OF THERAPEUTICS

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I am writing this paper because I am hopeful that it may direct attention to what is a crying fault in medical education today, namely, the neglect of teaching students how to treat patients for the alleviation or cure of disease. I am hopeful that some good may come of it because the Council on Pharmacy and Chemistry of the American Medical Association for years past has been endeavoring to inform physicians regarding the use of proprietary products and to persuade them to prescribe drugs, proprietary or not, intelligently.

The work that the Council has done is, of course, praiseworthy in intent, and is good as far as it goes in one line, to wit, to improve medical practice among graduates; but the prime difficulty lies in the teaching of practical therapeutics to the undergraduate and to the hospital intern. This embryo practitioner in almost every medical school has no training in pharmacy, little or no training in the use of the official names of drugs or of their doses, and no training whatever in the fact that doses of different sizes, although they be of one drug, may be useless, useful or harmful, or become so after some days. He, therefore, enters practice utterly at sea when he is called on to write a prescription.

I have known of eye drops to be ordered by the quart, oleoresins mixed with aqueous solutions, powerful alkaloids, such as strychnin, put in a mixture with potassium iodid, whereby nearly all the strychnin went into the last dose, and a host of other errors too numerous to mention. I have seen a thousandth of a grain of arsenous oxid given three times a day to an adult, and a grain of atropin put in each pill; and no druggist exists who, if diplomacy did not restrain him, could not humiliate almost every physician whose recipes come to his shop. Because the medical man knows nothing of the bulk of drugs or the most efficient vehicles, or excipients, he takes the easiest way out of his dilemma and orders products already prepared, which products are often the result of much experience and scientific pharmacy.

The remedy for all this is to have every student make in a pharmacy laboratory at least one representative of each class of preparations official in the Pharmacopeia and the National Formulary. I believe that

this is done in only one school of medicine in the United States.

The young graduate, having had no experience or teaching as to doses, naturally uses doses that some commercial laboratory names. He may have been taught "doses," but he has no idea that small doses of digitalis may be useful in one case, whereas almost toxic doses may be absolutely essential in another, and so loses the patient that needed the large dose. He uses the compound mixture of licorice as a vehicle in a case of profuse bronchorrhea or threatened pulmonary edema, not knowing, or forgetting, that its most active ingredient is antimony, which is absolutely contraindicated.

When he becomes an intern in a hospital, he learns one thing of great importance, namely, that the chiefs who prescribe little and "let the patient get well" often obtain the best results; or if he is on a surgical service, the entire drug therapy may be in his hands, and the chief often boasts that he "knows nothing about drugs and don't want to." On the medical side in large hospitals he will find a hospital formulary from which mixtures are made up by the gallon with all sorts of drugs, and contradictions, with widely varying doses of the ingredients; but there is a standard dose of the whole mess whether it be for a young girl of 16 weighing 100 pounds or an old rounder weighing 200 pounds. Not only this, but these mixtures go by names which often do not mention the most active ingredient or, worse still, go by numbers, so that the order on the treatment card reads: "No. 23, dessertspoonful t. i. d."

The fault does not stop with internship. Never having been taught practical therapeutics, the man steps into practice a fair mark for the loquacious traveling salesman who places him in the vocative by being familiar with what he ought to know. Some years ago, telling a distinguished ex-President of the Association that a patient was getting acetphenetidin, I found he did not know it was phenacetin. When he was told that the first term was the official one, he laughed and admitted that he had asked a student what he would use in a given case, and the reply was "phenol." The clinician "long" on pathology but "short" on therapeutics then informed the astonished youth that "phenol was no doubt very good, but carbolic acid was better."

PROPER METHOD OF TRAINING THE STUDENT

The remedy for the state of affairs just described is in teaching and experience when a student. This, in my experience, which is a fairly large one, is best accomplished by having the student, in his course, not only taught doses by rule of thumb, but also given the opportunity to prescribe for suppositive or actual cases, and to see the results of his order, both as to the prescription itself and as to its effect on the patient. Under the direction of an assistant professor the whole class may attend a therapeutic conference, or quiz, on the treatment of a given class of diseases, and during the conference several of the men who advise plans of treatment are called to blackboard to put in black and white what they have suggested. When they have finished, the instructor, who has continued his quiz in the meantime, criticizes the pharmacy, the doses, the form, the combinations, the therapeutics and the quantity in the whole prescription, as well as the Latin.

The number of occasions on which such criticisms lead to howls of delight at the discomfort of the man at the blackboard may be subversive of discipline, but all hands remember how John Jones wrote for nitrohydrochloric acid, iodid of potassium, tincture of gentian and tincture of iron in a quart of water, particularly if the mixture is prepared forthwith.

This large class teaching is driven home by a junior teacher taking the class in sections and having it spend one or two hours a week for several weeks writing prescriptions for suppositive cases, which are then criticized, and the writer asked to give his reasons for using each remedy.

The regular medical ward classes should emphasize therapeutics; and, in addition, clinical, not laboratory, pharmacology should be taught. This is done by demonstrating a case of auricular fibrillation both at the bedside and with the electrocardiograph, and then giving full doses of digitalis, a second demonstration revealing the effects. So, too, the mode of action of atropin in partial or complete heart block is demonstrated, and the effects of nitrites in lowering pressure are taught by seeing a patient today with high pressure and again at the next visit with a reduced pressure. Any number of these therapeutic demonstrations can be made by the regular ward class teacher, and made still more useful if a demonstrator of clinical pharmacology who can use the polygraph and electrocardiograph is given proper hours. By this means the student is taught how drugs act and how various doses act, entirely apart from the didactic lectures on therapeutics or the general therapeutic clinics given by the head of the department, who deals of necessity with principles and practice.

FAULTS IN PRESENT METHODS

All this seems so obviously practical that the question arises, "Why is it not done?"

The answer is that there is not time. If there is not, why not? There is not time for two chief reasons. The first is that the student is taught too much of the special part of the specialties, many of which he will never attempt to practice; and unless he takes a postgraduate course after several years in general practice, he ought not to try to practice. At present the young graduate can talk learnedly of the difference between paralytic and concomitant squint or about the Bárány test, but is stumped when told to write a recipe for diarrhea.

The second reason is that the laboratory of pharmacology has drowned practical therapeutics, and has done it so effectively that in most schools literally no bedside therapeutics as a separate branch is taught, the original chair of therapeutics being filled by a laboratory pharmacologist who in some instances is not even a doctor of medicine, or if he has the degree of M.D. has never practiced a day in his life or even been an intern in a hospital. When he attempts to tell students bedside facts, it is as if he were an astronomer trying to teach a sailor how to navigate a ship without ever having been to sea. As he lacks bedside experience, he teaches, for example, that the best treatment of fever is a combination of the cold bath and coal tar antipyretics, when every one who practices knows that this is a great error. It is enough to bring the gray hairs of Dr. Simon Baruch, the great apostle of hydrotherapy, in sorrow to the grave, and if carried out will bring many patients there.

Valuable time which should be spent at the bedside learning how to use drugs is employed in having students carry out pharmacologic technic in a course of six or eight weeks or their equivalent. It is safe to say that not one man in a thousand who takes this course becomes a pharmacologist or learns to be an efficient technician. What the student needs is not to do the experiments himself but to see them done by a man so well trained that results are produced that make a demonstration that really demonstrates the fact to be remembered. I can see no more reason for making a group of students, designed to be practitioners, make bungling experiments with a Kronecker-Bowditch heart apparatus than I can for their performing amputations and visceral operations on dogs or cats with the idea that they will become good surgeons; indeed, there is less reason. One cannot make a man who has no music in his soul a violinist in a six weeks' course, and probably it is safe to say that the majority of excellent physicians have not the qualities which produce original contributions to medical knowledge.

NEED FOR THE TEACHING OF PRACTICAL THERAPEUTICS

To quote Sir George Makins,¹ in an address to the Medical Society of Manchester:

A survey of these considerations should exert a definite influence upon the determination of the nature of the course of education best suited to the development of the doctor upon whose efficiency the happiness and health of the nation so largely depends. It is clear that for the great bulk of the profession a path must be found by which advances in science are utilized for the perfection of the art of medicine, but it cannot be possible to elevate every medical man to the position of an apostle of pure science . . .

All men are not endowed with a truly scientific spirit; the power of evolving great principles is reserved to the few, and even the correct appreciation and application of those which have been laid down is not a faculty universally enjoyed. Again, the power of reasoning, the possession of initiative and invention, and the facility of developing technical skill, are qualities very unevenly distributed amongst the class of man who adopts medicine as his profession. The reasons which lead to his choice are by no means always governed by the degree of aptitude he possesses for the calling he decides to follow. To some the science of medicine appeals; some adopt medicine from the lofty motive of desiring to benefit mankind; some boys are born to succeed to a family practice; some become students of medicine because the choice coincides with that of a friend; in some business capacity is nil; in others it is the mainspring of the future career and dominates all other feelings or aspirations. Lastly, in not a few instances the initial choice has never been made the subject of serious thought or consideration.

My point is not that there should not be teachers of pharmacology. On the contrary, there should be, because it is only by the efforts of these men that the scientific or investigative side of therapeutics can be advanced and the errors of empiricism corrected. Their existence develops those who have the talent, initiative, the power of proper deduction and the love of investigation, and their methods of thought and mode of study are examples of the highest type of medical man; but in their enthusiasm they should not forget that 999 of their pupils want to know how to make the sick well and do not want to know by personal experiments on dogs the effect, for example, of cutting the animal's sympathetic on the action of cocaine

on the eye. If this is to be taught, let the pharmacologist make the experiment and demonstrate the result.

It may be said that I do not know whereof I speak; but I do, for I was once a pharmacologist myself. In the eighties I worked in laboratory pharmacology, and taught it too, as a somewhat long list of titles in the Index Catalogue will show. I am not an iconoclast, and no one rejoices more than I do that the only pharmacologic laboratory in the United States in 1886 has been followed by two score of such laboratories from which a wealth of wonderful work has originated; but it is *postgraduate work*. I am pleading that hours now used otherwise may be employed to teach not only the theory but also the practice of therapeutics. When this is done, the work of the Council on Pharmacy and Chemistry will be helped to its completion; for when the practitioner knows how to prescribe, he will not tolerate the commercial concern that poses as his teacher.

The closing paragraph of a recent editorial² has a bearing on this subject. I have substituted the word "pharmacologist" for "physiologist," and "pharmacology" for "physiology":

It is quite possible that, as has been suggested, we are approaching the time when there will be two types of persons connected with each clinical department, namely, the clinical pharmacologist, whose chief work will be the intensive study of selected groups of cases and the instruction of students in the application of the principles of pharmacology to the elicitation of disease, and the clinician, whose chief function will be the care of the patient and the instruction of the student in the practical methods of diagnosis and treatment. Obviously, some arrangement already exists in some of our better schools. In institutions in which full time medicine has been introduced, there has been a distinct effort to appoint as heads of the clinical departments men of the investigative type. One question that Addis' discussion raises is whether in our enthusiasm for laboratory research we have not overlooked the importance of purely clinical investigation and of the type of physician that naturally tends toward this.

At present an attempt is made to make pharmacologists out of men who are going to practice medicine. A real pharmacologist is a highly educated man in physiology and chemistry, an investigator, a discoverer, and by rights a leader in the higher realms of therapeutics—one who should teach medical students how drugs can be studied and should be studied in the laboratory, and to determine fundamental facts about remedies. But to try to train the general run of students, who will never have a laboratory, to be pharmacologists without first teaching elementary practical therapeutics is somewhat like a great opera singer trying to make every one a great singer, or as if one should attempt to make his infant son sing before he tried to teach him to walk. The use of instruments of precision necessary for the study of drugs, if taught at all, should be at the bedside. I repeat what I said above: The lack of training as to what to do, what not to do, and when to do, as to remedies, is one of the weak spots in medicine today. I firmly believe that if the present generation of students is properly taught practical therapeutics, the chief labor of the Council on Pharmacy and Chemistry will be an accomplished fact, for the right way will be the easiest way. Let us first make good physicians and from these may be sifted out those who can and want to become laboratory pharmacologists.

1. Makins: Brit. M. J. 2: 590 (Nov. 8) 1919.

2 The Teaching of Clinical Medicine, editorial, J. A. M. A. 74: 35 (Jan. 3) 1920.

THE EFFECT OF FOOD RESTRICTION DURING WAR ON MORTALITY IN COPENHAGEN

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As I have already pointed out,¹ the blockade placed the people of Denmark in a very serious situation. We had been importing more than half of our bread cereals and a very considerable amount of corn and oil cakes for the use of domestic animals. While Denmark had only half as large a supply of rye and potatoes per capita as Germany, Denmark had proportionately twice as many domestic animals. The reason for this advantageous state of affairs was that the committee which had charge of proportioning the crops between man and animals (April 4, 1917) was converted to the newer ideas on nutrition.

1. No attention was paid to the protein minimum; it was held that this minimum was so low for man that it could not be reached, provided sufficient calories were furnished.²

2. While fat was regarded as a very valuable addition to the dietary, it was not considered as being necessary.³

3. Bran was considered to be a very valuable food, one which was well digested by man.⁴

As research had also shown that man can retain full vigor for a year or longer on a diet of potatoes and bran and for half a year or more on a diet of barley and fat,⁵ reliance was placed on our potatoes and the large barley crop, which was given to man and not to the pigs, as heretofore, with the result that the pigs died of starvation, but the people received sufficient nutrition. Furthermore, we ate all our bran ourselves. We not only ate whole rye bread, but we mixed all our wheat bran with the rye flour and were able to make good bread in this way. The Germans were unable to bake good rye bread. Their bread was too sour and too soggy. We were fortunate in having had more than a hundred years of experience in this direction. Our principal foods were bran bread, barley porridge, potatoes, greens, milk and some butter. Pork production was very low; hence the farmers ate all the pork they raised, and the people of the cities and towns got little or no pork. Beef was so costly that only the rich could afford to buy it in sufficient amount. It is evident, therefore, that most of the population was living on a milk and vegetable diet. As the potato and barley dishes were not "to Mr. Sorenson's liking" (Danish expression) to the same degree as meat, "he" ate less than before, and hence often lost weight.

The Danish food regulation was a most interesting problem for me. It was a low protein experiment on a large scale, about 3,000,000 subjects being available. What was the result? What was the effect on the health of the people? What was the death rate? At a later time I hope to be able to report on the death rate for both sexes, at different periods of life and from

various diseases. In the accompanying table I give some data on the numbers of deaths per 10,000 population in Copenhagen, between the ages of 25 and 65 years.

Food restrictions were initiated in March, 1917, and by October, 1917, they had become very severe. Therefore, my calculations embrace a year beginning and ending October 1. I could not continue my studies after October, 1918, because of the epidemic of influenza then existing. The death rate, as is known, has decreased in the last decades, as the result of a fall in the rate for epidemic diseases and tuberculosis. The cause of these diseases being known, we are able to combat them successfully. The deaths for all other diseases have been practically the same since 1900 or even earlier than this. Placing the average for the period from 1900 to 1916 (109) at 100, the variation (ratio) is small, from 93 to 107, until food regulation began. During the year of severe regulation, it fell to 66, a decrease of 34 per cent. It would seem, then, that the principal cause of death lies in food and drink. It must be remembered in this connection that we took the cereals and potatoes from the distillers so that they

NUMBER OF DEATHS PER TEN THOUSAND MEN
BETWEEN THE AGES 25 AND 65

Year	All Diseases	Epidemic Diseases and Tuberculosis		Other Diseases	Ratio
1900	152	46		106	97
1901	151	41		110	101
1902	131	30		109	100
1903	142	34		108	99
1904	137	36		101	93
1905	148	41		107	98
1906	144	33		111	102
1907	145	31		114	105
1908	152	35		117	107
1909	142	31		111	102
1910	135	26		109	100
1911	148	32		116	106
1912	138	30		108	99
1913	130	28		102	94
1914	133	27		106	97
1915	134	26		106	97
1916	145	35		110	101
1917	123	33		90	83
1917-1918*	99	27		72	66

* From Oct. 1, 1917, to Oct. 1, 1918.

could not make brandy, and one half of the cereals from the brewers, so that the beer output was reduced one half. Is it possible that this reduction in the output of alcoholic beverages is wholly responsible for the lower death rate? This question cannot be answered; but beyond a doubt while the lessened alcohol consumption is a great contributing factor to the lowered death rate, it is not the only one. The death rate for women has also been lowered 17 per cent. in the four year period 1910-1914. It is difficult to imagine that women consumed so much alcohol that this reduction in the death rate among women is to be charged solely to greater abstention from alcoholic beverages.

The death rate for Denmark for the year October, 1917, to October, 1918, was 10.4 per thousand. It never had been lower than 12.5 (1913, 1914). A difference in the death rate of 2.1 per thousand for a population of 3,000,000 means a saving of 6,300 lives. Hence, the saving of lives in Denmark as a result of the allied blockade was considerable.

This result was not a surprising one to me. Since 1895, when I began my experiments with a low protein diet (mostly vegetarian), I have been convinced that better physical conditions resulted from this standard of living. It may be said that a vegetarian diet is a more healthful diet than the ordinary diet. As the

1. Hindhede, M.: Ugesk. f. Læger **81**: 183 (Jan. 30) 1919; abstr. A. M. A. **72**: 1198 (April 19) 1919.

2. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 97, 1913; **31**: 259, 1914.

3. Hindhede, M.: Skand. Arch. f. Physiol. **30**: 78, 1913; published in German in 1919. Research was begun, Aug. 25, 1916. By April 4, 1917, after nine months' experience with a fat free diet, we were convinced that adults could live without fats, provided they were given vitamins.

4. Hindhede, M.: Skand. Arch. f. Physiol. **33**: 59, 1915.

5. Hindhede, M.: Skand. Arch. f. Physiol. **35**: 294.

result of extensive studies in this field I am convinced that overnutrition, the result of palatable meat dishes, is one of the most common causes of disease.⁶ I agree with McCollum⁷ that:

Lactovegetarianism should not be confused with strict vegetarianism. The former is, when the diet is properly planned, the most highly satisfactory plan which can be adopted in the nutrition of man . . . The only successful combination of natural foods or milled products for the nutrition of the animal are: (a) combinations of seeds or other milled products, tubers and roots, either singly or collectively, taken with sufficient amounts of the leaves of plants; (b) combinations of the foodstuffs enumerated under (a), taken along with a sufficient amount of milk to make good their deficiencies.

I wish to call attention to the unusual amount of bran consumed by the people of Denmark during the period of food restriction. In other countries, for example, Germany, Holland and Norway, the question was discussed whether grain should be milled to yield 70, 80, 90 or 94 per cent. of bolted flour. We not only milled our rye to 100 per cent. but, profiting by previously made experiments, we added all our wheat bran to the whole rye bread; and as we added also 24 per cent. of barley meal (milled to 95 per cent., only the coarsest shells being removed) we had more than twice the amount of bread we would have had if we had milled only to 70 per cent. As the difference in digestibility was only 9 per cent. (94—85) we got about twice the amount of digestible bread. And, be it emphasized, we could bake good bread with this mixture. People entered no complaints; there were no digestive troubles, but we are accustomed to the use of whole bread and we know how to make such bread of good quality. If further proof were needed, this war experiment on such a large scale has demonstrated that bran is excellent food.

These findings agree with those of Osborne and Mendel.⁸ These investigators found that bran is a very good food for rats, and that mixed with white flour it can take the place of meat and eggs. Their results lead me to conclude—if I may be permitted to apply results obtained on rats to human beings—that: As bran can replace meat and eggs, man should eat whole bread and not so much of the more costly foods. Mendel concludes contrariwise: As people eat enough of meat and eggs, "no practical advantage on this score can be expected by converting the entire grain into flour." In my opinion, Mendel not only overlooks the economical question, but also that there are good reasons for believing that a diet composed mostly of meat, eggs and white bread—a common diet of the well-to-do—is far from being a healthful diet. Even in the case of rats, a meat diet seems eventually to be harmful. Although rats can thrive quite well on a meat diet—which man cannot do—the young of meat fed rats seldom survive.⁹ The fact of the matter is that it is claimed that rats, like human beings, will not choose an exclusive meat diet from natural instinct. That statement does not, however, apply to the rat. Watson says, on the basis of his numerous experiments on rat feeding: "I have never seen a young rat which would look at porridge or milk if meat was available."

I have seen "human" rats who would not eat porridge when beefsteak was available! And we know that beef, in large amount, is not good food for either man or rat.

While not all readers will agree with what I have said, no one can dispute the fact that the people of Denmark have no cause to regret that during the war their diet consisted mostly of milk, vegetables and bran. If Central Europe had adopted a similar diet, I doubt that any one would have starved. It seems to me, however, that the German scientists, as represented by Rubner, have not learned anything from the war. Rubner¹⁰ writes about the "necessity of bringing the supply of live stock up to the prewar basis. . . . From what I have stated, it follows that meat products must again form an adequate proportion of our diet."¹¹ Rubner wants an abundance of meat in order that the people can be "aufgefüttert." I do not agree with him. The people must first have bread, potatoes and cabbage in sufficient quantity, and then some milk. Meat is the last requirement to be met. If the people must wait until pigs and cattle have sufficient food, they will die of starvation one year before they can get an abundance of meat.

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LOCAL ANESTHESIA IN NEUROSURGERY

WITH SPECIAL REFERENCE TO ITS VALUE IN
EVULSION OF THE SENSORY ROOT OF
THE GASSERIAN GANGLION

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Those of us who were so fortunate as to participate in the medical and surgical work in France during the recent war are often asked the question, "To what extent have the principles and practices evolved by military surgery benefited civil medicine and surgery?"

Without attempting to answer such a broad question, I wish to discuss briefly the use of local anesthesia in neurosurgery, with special reference to its application in the operative relief of trifacial neuralgia, believing that the routine use of local anesthesia in the war wounds of the central and peripheral nervous systems is responsible for its wider application in neurosurgical problems of civil life.

Local anesthesia has been used in certain selected neurosurgical operations for many years, and is therefore in no sense a method which originated during the recent war. For example, Thomas and Cushing¹ reported the removal of a brain cyst under cocaine anesthesia after four previous operations under general anesthesia had been abandoned on account of excessive hemorrhage due, presumably, to the fulness of the vessels, produced by the anesthesia. They say:

Although the undertaking was premeditated, in consequence of our previous unfortunate experience in administering general narcosis to this patient, we must confess to surprise at its successful accomplishment. Contrary to all expectations, the dura proved to be insensitive to such manipulations as were

6. Hindhede, M.: *Moderne Ernährung*, Berlin, W. Vobach, 1915; 12. Beretning fra Hindhedes Kontor for Ernæringsundersøgelser, Copenhagen, Jakob Lind, 1919.

7. McCollum: *The Newer Knowledge of Nutrition*, pp. 52, 81.

8. Osborne, O. T., and Mendel, L. B.: *J. Biol. Chem.* **37**: 557 (April) 1919.

9. Watson, Chalmer: *The Influence of Diet on the Structure of the Tissues*, Edinburgh, 1910.

10. Rubner: *Schädigung der deutschen Volkskraft durch die feindliche Blockade*, Denkschrift des Reichsgesundheitsamtes, Berlin, 1919.

11. "Nothwendigkeit der Wiederherstellung des Viehbestandes. . . . Aus dem gesagten folgt, dass die Fleischnahrung wieder den entsprechenden Anteil an der Ernährung nehmen muss."

1. Thomas, H. M., and Cushing, Harvey: *Removal of a Subcortical Cystic Tumor at a Second Stage Operation Without Anesthesia*, *J. A. M. A.* **50**: 847 (March 14) 1908.

necessary to open it freely. Only when it was put under tension or displacement was any discomfort occasioned, otherwise it seemed to be absolutely free from sensitivity.

The more general application, however, in the use of local anesthesia in operations for cranial and brain injuries as the result of war wounds was urged by Colonel Gray of the British army in 1917. Also in developing the technic which was responsible for the reduction of the operative mortality from 60 or 65 per cent. to less than 30 per cent. in head injuries with dural penetration, Cushing adopted the routine use of local anesthesia as one of the important steps in the operation.

In a very extensive experience as chief of a neurosurgical team working in the forward area during the St. Mihiel and Argonne offensives, I became thoroughly converted to the use of local anesthesia in brain and spinal cord operations. The advantages were so numerous and the disadvantages so few that I could see no reason why the practice should not be adopted more generally in the operations for neurosurgical conditions as encountered in civil practice.

Since returning to civil practice, therefore, I have used local anesthesia as a routine procedure in all neurosurgical operations, excepting those on children and on extremely nervous adults whose co-operation could not be relied on.

As an illustration of the variety of these operations, this type of anesthesia has been used successfully in subtemporal decompressions, cerebellar decompressions, drainage of brain abscess, elevation of depressed skull fractures, explorations for tumors and cysts through extensive bone-flap operations, laminectomies for spinal cord tumors, peripheral nerve operations, and operations on the gasserian ganglion for trifacial neuralgia.

With the exception of those cases in which there is evidence of greatly increased intracranial pressure, the routine administration of one-third grain of morphin hypodermically thirty minutes before the operation has been practiced. When the brain is under greatly increased pressure I have felt that it might perhaps be unwise to administer morphin on account of the fact that the medullary centers may already be more or less embarrassed by the increased pressure. Such patients have therefore been given sodium bromid, 20 grains, four times daily for several days preceding the operation. In this connection I was interested to learn in a recent conversation with Sachs of St. Louis that he gives as a routine a preliminary injection of morphin, one-eighth grain, in all brain operations, regardless of the presence of increased intracranial tension, and sees no reason why this practice should be dangerous. In handling brain injuries in France we gave morphin, one-half grain, thirty minutes before operation, and

experienced no ill effects from its use. In these cases, however, we seldom had the problem of increased pressure to deal with, as contused brain had already escaped through the open dura, thereby preventing to a certain degree the same pressure effect on the brain mass that occurs in traumatic cases with skull and dura intact.

The type of local anesthesia used is a massive infiltration with 0.5 per cent. procain, to each ounce of which have been added 15 minims of epinephrin (adrenalin) chlorid solution (1:1,000). This solution is best made up immediately before each operation. For the sake of convenience the powdered procain may be kept in capsules, each capsule containing 5 grains of the drug. The contents of one such capsule added to 2 ounces of boiling water, plus the addition of 30 minims of epinephrin solution, will give a sterile 0.5 per cent. procain-epinephrin solution of sufficient quantity for the average operation. In extensive operations, however, I have used as much as 6 ounces

of such a solution and have never noticed any toxic effects from the drug. Formerly I used a 1 per cent. solution, but later experience has convinced me that the 0.5 per cent. strength is equally as satisfactory. The infiltration is made by a long needle and Luer syringe of at least 20 c.c. capacity, the point of the needle extending just through the scalp above the galea. As the infiltration progresses, the scalp is raised by the underlying fluid and the needle can be further inserted during the injection along the line of the proposed incision. The scalp proper cannot be successfully injected. The infiltration is now extended under the galea and into the muscles in those re-

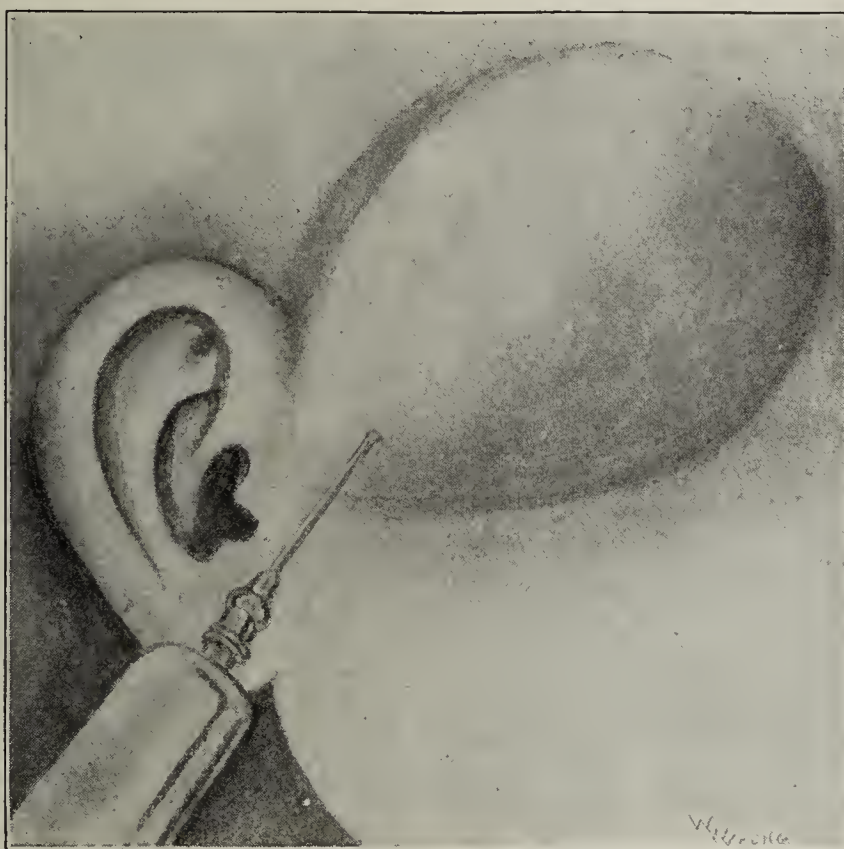


Fig. 1.—Massive infiltration of scalp and subcutaneous tissues.

gions in which muscle is present. If sufficient solution is used and at least fifteen minutes allowed to elapse before the incision is made, the patient does not complain of any pain whatsoever. As a rule no further use of the solution is necessary, provided the initial infiltration has been massive enough. The skull can be entered painlessly, and for ordinary incisions and manipulations the dura seems to be absolutely free from sensitivity. It is well known that the brain itself is devoid of painful sensations; after a painless opening has once been made, therefore, all necessary intracranial manipulations can be done without conscious perception on the part of the patient.

To one who has experienced the manifold trials that attend the average extensive operation of a neurosurgical nature under general anesthesia, and then has noted the conspicuous absence of such trials in patients anesthetized locally, the advantages of the latter method are most marked. In spite of the numerous methods devised for the control of scalp hemorrhage, this is almost always a most troublesome and dangerous factor in brain operations under general anesthesia.

The entire cranial circulation is greatly congested, which gives trouble not only in the scalp but also within the skull, where frequently there will be a persistent oozing from even the smallest vessels, the eventual control of which requires the most painstaking and time-consuming attention. Even after the control of such oozing has been effected, there is great danger of later oozing, with the formation of postoperative hematoma. With the use of local anesthesia, the epinephrin proves an effective hemostatic, so that very few clamps are required. Furthermore, instead of the tremendous congestion giving rise to troublesome hemorrhage most difficult to control, the brain circulation is normal, and such bleeding as might occur is easily and quickly controlled with little or no tendency to postoperative oozing.

The average extensive brain operation under general anesthesia is usually productive of more or less shock. The prolonged anesthesia and the loss of blood are perhaps the greatest factors in producing shock. The anesthesia is usually prolonged because of the great trouble in controlling the hemorrhage. Eliminate

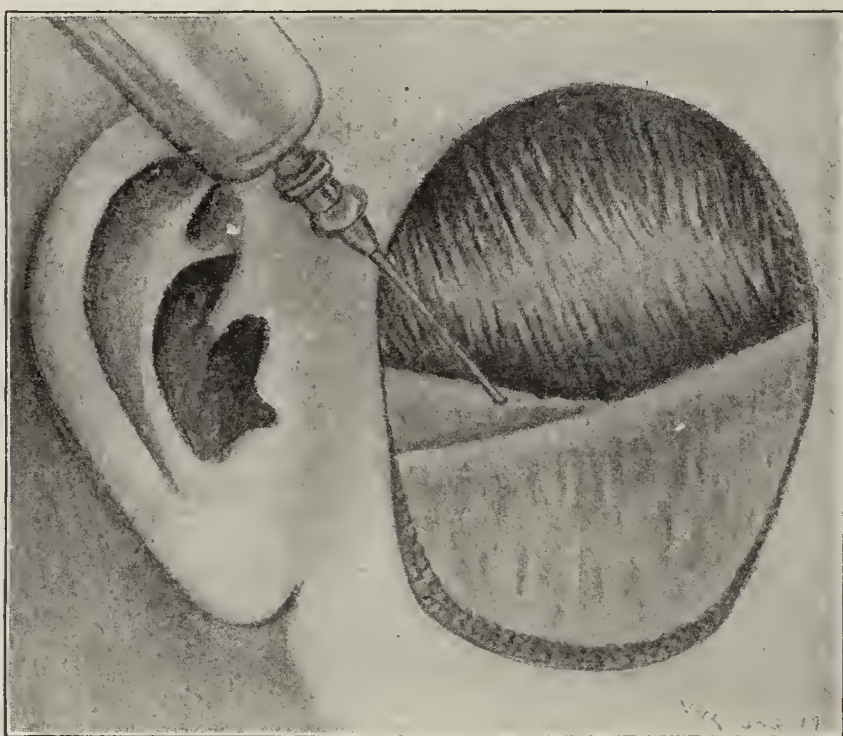


Fig. 2.—Infiltration of the periosteum of the zygoma before resection.

the one, and you thereby eliminate the other. Under local anesthesia these operations are much more quickly done, and the patient rarely ever shows evidence of shock. I have turned down an extensive bone flap and had my patient leave the table with the same pulse and blood pressure as before the operation. I have never had a similar experience with general anesthesia.

There are a certain number of patients (when first seen by the neurosurgeon) whose intracranial pressure is so great as to allow of a very narrow margin of safety in the performance of a simple subtemporal decompression. This margin is undoubtedly made narrower by a general anesthetic. Local anesthesia in such cases permits the safe performance of palliative operations.

As already mentioned, local anesthesia is not applicable to children, or to adults who are very nervous or who are in a condition of noisy delirium or turbulent restlessness. In such patients, any operation under local anesthesia is inadvisable.

Although the dura covering the vertex and lateral surfaces of the brain is insensitive to incisions and

careful manipulation, those portions of dura at the base of the brain where there is considerable attachment to the bone are more likely to be sensitive. For this reason, during operative procedures in these regions under local anesthesia, infiltration of the dura is sometimes necessary in order to manipulate it without producing painful sensations.

LOCAL ANESTHESIA IN TRIFACIAL NEURALGIA

Perhaps the most satisfactory operation in neurosurgery is that for the permanent cure of trifacial neuralgia. In the hands of those who are thoroughly trained in neurosurgical technic, the operative mortality in this class of patients should be nil. It is, however, one of the most difficult operations in surgery, and should not, in my opinion, be attempted by the average general surgeon.

Without discussing the many interesting features of trifacial neuralgia, I wish simply to mention the use of local anesthesia in the radical operation for this condition as an illustration of the value of the method in neurosurgical procedures. I have had the opportunity during the past few months of demonstrating the advantages of evulsing the sensory root of the gasserian ganglion under procain anesthesia over similar efforts on etherized patients, and therefore feel justified in being somewhat enthusiastic on the subject.

After a preliminary hypodermic injection of one-third grain of morphin (one-half hour before operation), a massive infiltration of 0.5 per cent. procain-epinephrin solution (according to the method mentioned above) is made in the region of the proposed incision. If the approach of Cushing is selected, the infiltration should begin just over the temporal root of the zygoma and extend as high as the level of the upper border of the pinna, and forward to the posterior border of the frontal process of the malar bone. After thorough infiltration of the skin, the needle should be inserted into and through the underlying temporal muscle so that the solution may be brought into contact with the periosteum of the skull. The skin flap is now reflected downward until the periosteum of the zygoma is exposed. In order to insure a painless resection of the latter, a thorough infiltration of the periosteum can now be done before the subperiosteal resection of the zygoma is attempted. If the fascia and muscle have been sufficiently infiltrated, the incision through these structures and the removal of sufficient underlying skull can be accomplished without pain.

It has been my experience that the dura can be gently retracted and the middle meningeal artery exposed and clipped as it emerges from the foramen spinosum without discomfort. As the mandibular branch of the ganglion is exposed, however, the patient will complain of pain. This should be anticipated by asking the patient to mention the expected painful sensation as soon as it is noticed, with the assurance that after this no further pain will be experienced. As soon as the foramen ovale is reached, the operator has an excellent guide and should then infiltrate the ganglion by inserting the needle into the third branch, injecting the nerve, and further inserting the needle along the nerve directly into the ganglion. One c.c. of solution is usually sufficient completely to anesthetize the ganglion.

From now on the operation can proceed without further pain, the third and second branches and then the ganglion itself exposed, and the sensory root evulsed without any discomfort whatsoever to the patient.

Although I prefer the Cushing method of approach, and have always adopted it, I see no reason why the excellent operation of Frazier could not be done equally as satisfactorily under local anesthesia. The infiltration, should the Frazier approach be adopted, must

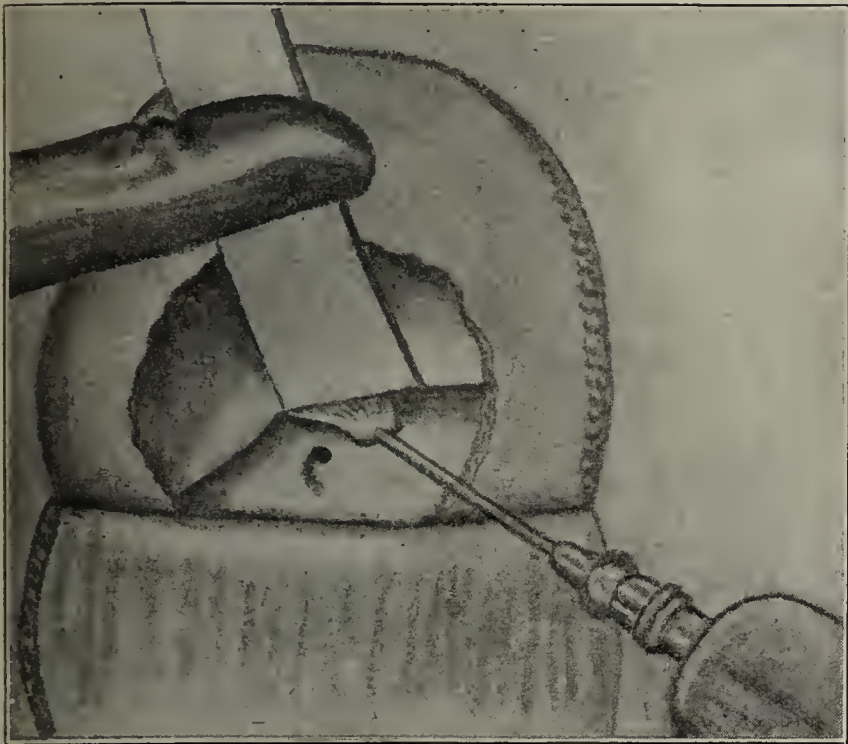


Fig. 3.—Infiltration of the gasserian ganglion, the third branch being used as a guide after exposure of the edge of the foramen ovale.

extend higher, and it should not be necessary to infiltrate the periosteum of the zygoma, as this bone is not resected.

There are two very distinct advantages in the use of local instead of general anesthesia in the performance of this operation:

The first is the marked difference in hemorrhage. The constant presence of venous bleeding in the average operation of this nature requires the repeated insertion and withdrawal of small cotton pledgets, thereby permitting the operator short intervals in which to expose the ganglion and thus necessarily prolonging the time of the operation. This bleeding, provided the middle meningeal artery has been satisfactorily dealt with, is entirely venous. (I have never understood the logic of doing a preliminary ligation of the external carotid artery in these operations—a method practiced by many surgeons, it seems.) There is no doubt that during a general anesthesia, there is a definite venous and capillary engorgement in the brain and meninges which gives rise to the above-mentioned troublesome and time-consuming hemorrhage. With the patient anesthetized locally there is a marked absence of such oozing, and as a consequence the operation proceeds without interruption, the exposed field is much clearer, there is less mopping, and the average time consumed considerably less than when the patient is etherized.

The second distinct advantage is the absence of the relatively tense dura. This is present when the patient is under the influence of a general anesthetic and interferes with the free exposure by dural retraction until cerebrospinal fluid is removed, either by nicking the dura as practiced by Frazier, or by doing a lumbar puncture as practiced by Sachs. Under a local anesthetic, the dural retraction is easy and safe without this preliminary removal of spinal fluid, which therefore does not escape until the sensory root is exposed and evulsed.

CONCLUSION

I cannot but feel that the routine use of local anesthesia in this as well as in other operations of a neurosurgical nature allows a broader margin of safety than that offered by the use of general anesthesia. If this is true, our patients should be given the benefit of the difference. My own experience in this direction has been so uniformly satisfactory that I do not hesitate in recommending the more extensive use of local anesthesia in this special class of surgical operations.

THE SURGICAL TREATMENT OF GUMMATOUS OSTEITIS OF THE SKULL*

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ROCHESTER, MINN.

Gummatous osteitis occurs in late syphilis and involves the outer table of the skull alone, or the outer and inner tables with the dura and the brain. While the gumma may be an isolated condition, it is more likely to be associated with numerous lesions on the skull. In making an examination of these lesions, it will be found that there is a destruction of the superficial tissues with necrosis of the bone, which gives the peculiar moth-eaten appearance characteristic of this disease and affords a means of diagnosis, by roentgen ray, before the skin has broken down.

Aside from the specific treatment of syphilis, it is necessary that certain surgical measures shall be

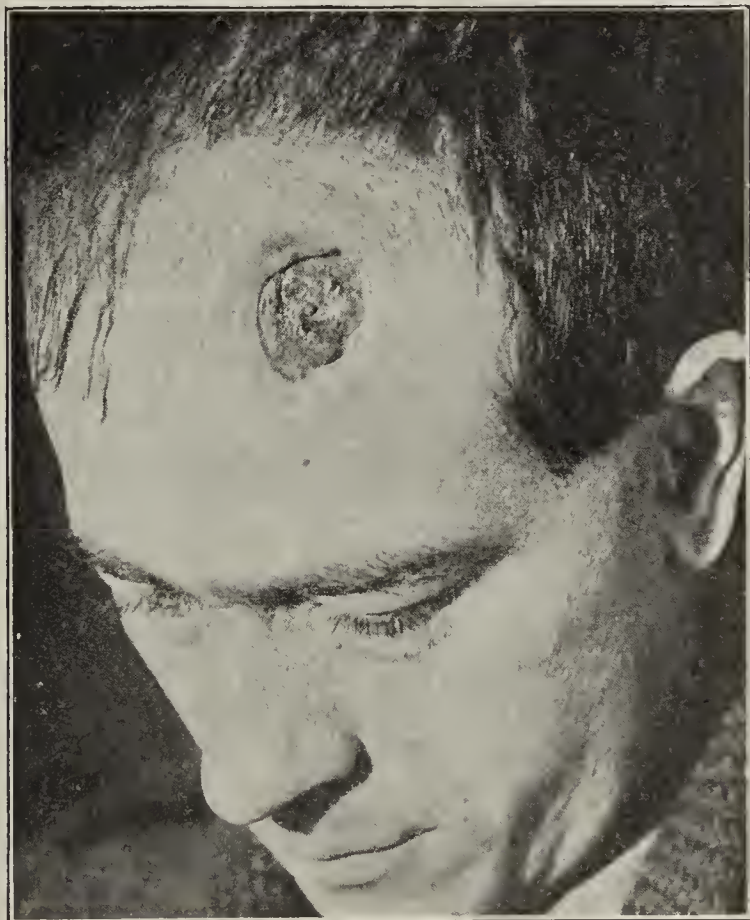


Fig. 1 (A 211775).—Necrotic gummatous ulcer of the frontal bone, which healed in six months after treatment had been administered. At first the necrotic bone had been perforated with a gimlet, with only slight results; later the skin edges were freshened and the entire sequestrum removed.

applied to the necrotic ulcers of the skull, namely, draining the suppuration, removing the sequestrum,

* From the Surgical Section on Neurology, Mayo Clinic.
* Read before the Southern Minnesota Medical Association, Mankato, Dec. 2, 1919.

or dead bone, and stimulating granulation and epidermization over the denuded areas. Several cases have been observed at the Mayo Clinic in which the skin has been elevated over a fluctuating mass varying in size from 0.5 to 4 cm. If the fluctuating area is opened,



Fig. 2 (A 248101).—Necrotic ulcer of the frontal bone due to gummatous osteitis.

a sequestrum and pus are usually found, surrounded by roughened edges of bone. In the older lesions these fluctuating masses will open spontaneously, and pour out thick, yellowish pus, which is caused by necrosis of the superficial tissues and destruction of bone. The necrotic bone at first is very white and does not bleed when touched; but on exposure to air, it becomes discolored, and a foul-smelling necrotic ulcer of the skull follows. The ulcers do not respond to specific treatment or local applications, unless the sequestrum has been removed. The necrotic areas may persist for years until sufficient necrosis takes place to loosen the sequestrum, when granulation follows (Fig. 1).

In reviewing the literature, I found very little relative to the local treatment of this condition. Dr. C. H. Mayo,¹ in 1914, discussed the treatment of dry, exposed bone by gimlet perforation in an effort to stimulate granulation. He stated that when granulation begins to take place through these small openings, flakes of bone loosen up and come away, and in time the surface is one granulating area. Dr. Lydston,² in 1915, described a case of syphilis of the cranium and spine, in which he explored one of the gummas of the skull, removing the necrotic tissue with a rongeur until living bone was reached.

The point under consideration is that in cases in which dry bone, or necrotic, suppurative bone is exposed, as in gummatous osteitis, granulation does not take place until the sequestrum has been completely removed, regardless of the depth of the sequestrum. A child on whom I operated for brain abscess developed a wound infection, resulting in a retraction of the skin edges, and exposure of the parietal bone over an area of about 9 by 6 cm. Various dressings had

been applied with little success, when accidentally the child bumped her head, loosening the outer table of the exposed bone, which we then proceeded to lift off, thereby exposing the bleeding surface between the two tables of the skull. As soon as this was done, granulation immediately followed and the wound healed without skin graftings (Figs. 2 and 3).

In four cases of gummatous osteitis, I have since applied the same principle, that is, elevating and freshening the skin margins and removing all the necrotic bone with a chisel to a depth at which bleeding is profuse. As a rule, if the necrotic bone is removed down to the diploe, no further procedure is required. When the inner table is involved, this also should be removed. If all necrotic bone is not removed at the primary operation, it is advisable to have the patient return promptly for further operative treatment. After the removal of the sequestrum, wet dressings saturated either in a boric acid solution or in physiologic sodium chlorid solution should be applied, and if epidermization is slow, skin-grafting may be resorted to. The postoperative course of four patients operated on in the Mayo Clinic for gummatous osteitis has been entirely satisfactory.

In the first case, the patient presented a history of gummatous osteitis of eighteen months' duration. At a primary operation, numerous gimlet holes were made through the necrotic bone, producing very small buds of granulation; later, the necrotic bone was removed by the use of a chisel; this was followed by a subsequent operative procedure, when small areas of dead bone that were missed at the primary operation were removed. The patient experienced no postoperative complications, and the wound healed completely in six months.

In the second case, multiple gummas of the skull were present; the largest measured 9 by 6 cm. These were treated by removing the sequestrum and freshening the skin edges;

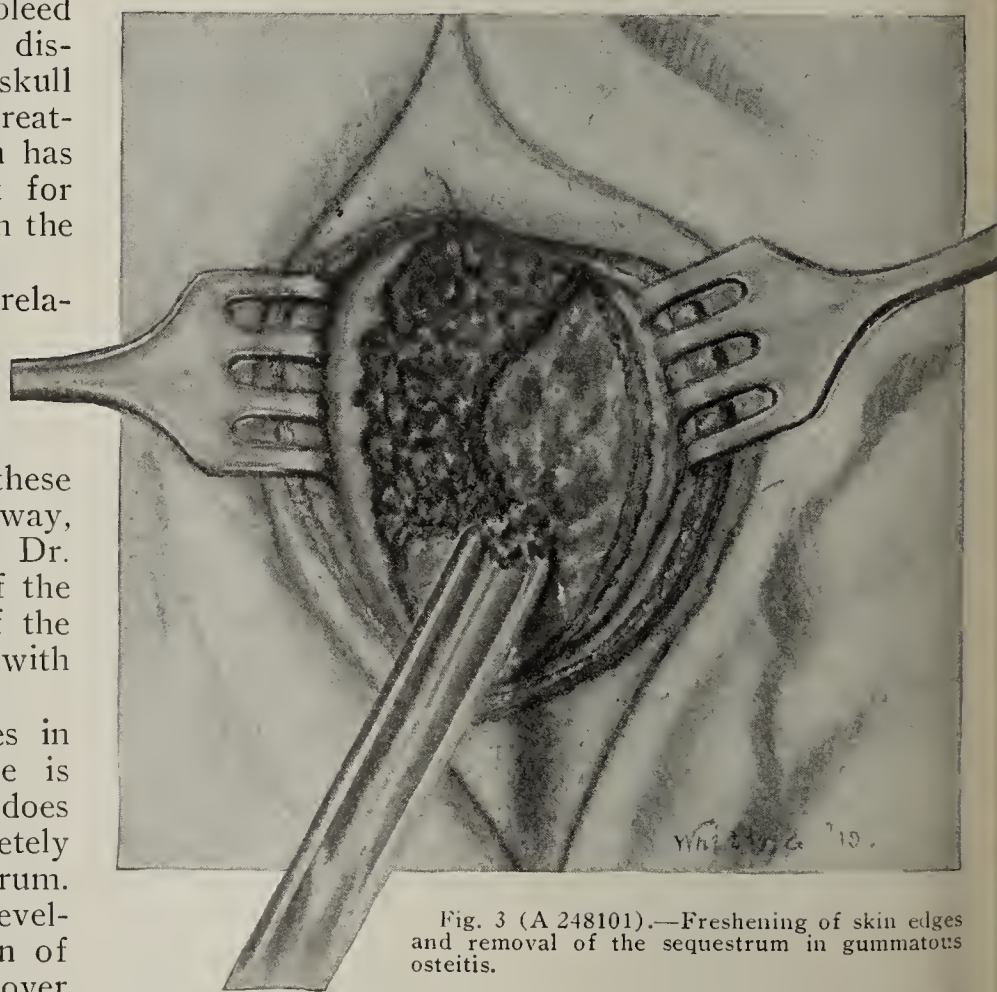


Fig. 3 (A 248101).—Freshening of skin edges and removal of the sequestrum in gummatous osteitis.

the smaller gummas were left undisturbed. This patient's convalescence was entirely uneventful and the wound healed in three months (Fig. 4).

In the third case, a single necrotic area of the frontal bone had been present for three years. This was treated by removal

1. Mayo, C. H.: Preparation of Dry Bony Areas for Skin-Grafting, *Ann. Surg.* **60**: 371, 1914.

2. Lydston, G. F.: A Unique Case of Syphilis of the Cranium and Spine, with Remarks on Syphilitic Bone Dystrophy, *Med. Rec.* **87**: 43, 1915.

of the sequestrum; at the time of the patient's dismissal the wound was in good condition and covered with granulating tissue.

In the fourth case, the patient presented a large fluctuating mass which involved the right half of the frontal bone and



Fig. 4 (A 229080).—A healed gummatous area, 9 by 6 cm., of the vertex, after the removal of the necrotic sequestrum.

was associated with an involvement of the septum. The mass was drained and the necrotic bone removed.

Local surgical treatment of gummatous osteitis depends on the size of the gumma and on whether or not the skin has been broken. In cases of very small gummas, it is unwise to open the fluctuating areas; if the gumma is 1 cm. in diameter or larger, it should be opened, the sequestrum removed, and the roughened edges curetted. In the larger exposed necrotic suppurating areas all necrotic bone should be removed, the skin edges freshened, and wet dressings applied. Specific treatment should be given in conjunction with local treatment.

The principle applied to gummatous osteitis of the skull with reference to removal of the sequestrum, or dead bone, may also be applied to areas of exposed bone in nonsyphilitic cases, since granulation will at all times be hastened by removal of the outer table of the skull.

Wood Alcohol.—The wood alcohol used in the United States is obtained chiefly from the destructive distillation of wood—hard wood, birch, beech, maple, oak, elm and alder being those most frequently used. The chief uses to which it is put are for the denaturing of grain alcohol; for various purposes in lines of common manufacture (especially as a solvent in the preparation of shellac, varnish, dyes, etc.) as an ingredient in medical and pharmaceutical preparations; in the chemical industries and as a fuel and illuminant. Only within recent years has wood alcohol become so dangerous to life and sight. Formerly it was a dark, bad smelling, bad tasting fluid which no one was tempted to drink. Later, a process was developed by which this color, smell and taste are removed. Wood alcohol, when purified in this way, looks, smells and tastes like grain alcohol, and may thus be easily substituted for it by unscrupulous persons.—*Illinois Health News*, October, 1919.

A CASE OF SYPHILIS OF THE ANTERIOR HORNS

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NEW YORK

History.—J. R., a Spaniard, aged 25, a clerk by occupation, admitted to the outpatient department, Oct. 15, 1919, gave a history of his present illness of six months' duration. The chief complaint was weakness; he complained especially of weakness of the legs. When he awoke in the morning, walking was difficult and his legs felt stiff. The stiffness diminished during the day with exercise of the muscles. Continued walking tired him a great deal, and when tired he was likely to stumble. He had no pain and he was not conscious of any sensory disturbance or mental trouble. There was no bladder or rectal difficulty; and he had no trouble in swallowing. He had lost 20 pounds in the past two years, but for the past six months his weight had been stationary.

He admitted having had gonorrhea, but denied symptoms of syphilis. Just before the onset of the present illness, he had had an abscess of the right forearm. This was incised and took six months to heal. The past history was otherwise negative. As far as he knew, no other member of his family had suffered from any similar trouble.

Physical Examination.—The patient was thin, and stood with the head bowed slightly forward. The clavicles were prominent, the scapulas were of the winged type. There had apparently been contractures of the muscles of the feet with resultant pes equinus. This interfered with the patient's gait. The general musculature was poorly developed, and there was distinct atrophy of the leg muscles. The posterior aspects of the calves, especially of the left, had become flat. There was a general fibrillary contraction of the muscles. This was most marked in the muscles of the shoulder girdle, but was present in nearly all the muscles after continued voluntary contraction and subsequent fatigue. In this way it could be induced, particularly in the biceps, triceps, glutei, and hamstring muscles. These contractions were visible on inspection, but could be demonstrated better by stethoscopic auscultation over the fibrillating muscles. Over the smaller muscles the sounds resembled those of the fetal heart.

The superficial reflexes were present: the knee, elbow and wrist jerks were absent. There was no ankle clonus, or Babinski reflex. There was no pupillary light reaction: the eye grounds were negative. Touch and temperature discrimination was unimpaired.

Results of the examination of the heart, lungs and abdomen were negative. The blood pressure was 120 and 80.

DIAGNOSIS

This case presented the symptoms of muscular atrophy and muscular fibrillation. Muscular fibrillations occur in conditions in which there is a degeneration of the cells of the anterior horns of which the motor nerves are the axons. The diseases with which it is associated are: chronic bulbar paralysis, syringomyelia, amyotrophic lateral sclerosis, and progressive spinal or neuritic muscular atrophy.

The absence of bulbar symptoms and the retention of sensory discrimination ruled out the first two of these diseases. While cases are described of amyotrophic lateral sclerosis in which exaggerated reflexes and spasticity as the result of disease of the lateral columns occurred late or not at all, the condition is probably very unusual.

The picture here seemed to correspond most accurately to that of progressive muscular atrophy, although the predominance of the atrophy in the leg muscles

suggested the Charcot-Marie-Tooth type of progressive neural atrophy.

The results of the laboratory investigations in this case were: The blood Wassermann reaction was +. The spinal fluid showed a ++++ Wassermann reaction, a cell count of 80 with 92 lymphocytes in the smear, a positive globulin reaction, and a colloidal gold curve of the taboparetic type (2 2.5 2.5 3 2.5 2.5 1.5 0.5 0.5).

In the face of this evidence it was apparent that this patient was suffering from a syphilitic lesion of the anterior horns. In our own experience this has been a very rare manifestation of cerebrospinal syphilis, but the question arises as to what percentage of cases of progressive spinal atrophy will resolve themselves into this class with the application of the newer diagnostic tests for neurosyphilis.

TREATMENT

The patient is now under treatment with arsphenamin intravenously and auto-arsphenamized serum intraspinally. He has had two such treatments with a diminution in the muscular fibrillation. The final result from the treatment will be reported later.

125 East Fifty-Seventh Street.

Clinical Notes, Suggestions, and New Instruments

HITHERTO UNDESCRIBED DISLOCATION OF THE PATELLA ENDWISE

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Chief Surgeon, University Hospital

Elbert B., aged 16, single, laborer at freight house, while running across the dock, Aug. 15, 1919, tried to jump over a truck but struck his right knee just above the patella smartly against the handle. He was unable to flex or extend his leg, and was immediately in considerable pain.

When examined a short time after the accident, there was found a slight abrasion of the skin 2 inches above the patella. The patella was dislocated, projecting directly toward the front of the joint, apparently endwise. Effusion into the joint was prompt and considerable. In twelve hours it was sufficient to distend the joint so that the dislocated patella was not apparent to sight.

The roentgen ray disclosed the patella dislocated in such a way that the upper end was found down between the condyles. The lower end projected forward, held by the taut patella tendon. The long axis of the patella was at right angles to its normal axis. The upper part had evidently been torn away from its attachment to the tendon of the quadriceps extensor. The leg was held in a rigid position, slightly flexed. Attempts at further flexion were extremely painful.

Under an anesthetic, an attempt was made to reduce the dislocation by manipulation. With the muscles thoroughly relaxed, the leg was flexed on the thigh, when the patella was found to return apparently to its normal place between the condyles. When the leg was extended, the patella was found in its former dislocated position. It was evident that in flexing the leg the patella was forced farther down between the condyles and turned completely over so that the anterior surface became posterior, and the posterior surface anterior. The upper end could not be dislodged from its position by any manipulation of the blood-distended joint. After two or three attempts had been made, reduction by manipulation was abandoned.

A second roentgenogram was then taken, which revealed the same position as before. The patella remained with its upper end pressed down between the condyles and the posterior surface facing downward.

Operation was performed the following day at Wheatley Provident Hospital by my assistant, Dr. L. B. Miller, assisted by Dr. H. H. Owens. The knee joint was opened by a longitudinal incision outside the patella. About 8 ounces of old blood were removed from the joint. The tendon of the quadriceps extensor was found torn loose from the upper part of the patella, and the patella was found endwise between the condyles, with the upper end directed backward toward the popliteal space. The patella was dislodged by relaxing



Dislocation of patella endwise; ligamentum patellae taut.

the quadriceps extensor muscle and hooking the finger under the patella so as to drag it upward into its normal situation, where it remained. No attempt was made to close the rent in the tendon of the quadriceps extensor. The wound was closed, and the patient made an uneventful recovery. When seen one month after the accident, he could flex the knee to a right angle and extend it to within 5 degrees of a straight line.

Cases of outward dislocation of the patella on or outside the condyle of the femur are not uncommon, and I have also seen rotary dislocations in which the patella is caught edge-wise between the condyles. But an independent dislocation of the patella endwise I have neither seen before, nor can I find any reference to one in the immediate literature.

1005 Campbell Street.

AN INSTRUMENT FOR ILLUMINATION AND SUCTION IN
CERTAIN SUPRAPUBIC OPERATIONS*

ERNEST M. WATSON, A.M., M.D., BUFFALO

The difficulty encountered in obtaining satisfactory illumination within the vesical cavity in certain suprapubic operations has been experienced at times by many engaged in this field of work. From the position of the bladder, deep in the pelvis, and the tendency of the pelvic viscera to encroach on the rather limited operative area, suitable illumination from above the wound cannot always be obtained. This is particularly true as regards an adequate and continued view of the base and deeper portions of the bladder cavity.

In an effort to provide a means to overcome this rather annoying handicap to many otherwise quickly executed operative procedures, an instrument has been devised to aid in illuminating the bladder cavity, and in addition to remove by suction the urine and a certain amount of blood which accumulates therein. This instrument has been found useful during the past two years in certain suprapubic work.

In suprapubic prostatectomy, many feel that a direct view of the intravesical prostatic enlargement is not always essential, and from the nature and position of the illuminator when in place, its usefulness in this procedure is limited. In practically all other operative work on the bladder performed suprapubically, however, it may be used to advantage. In simple suprapubic cystotomy, in resection of portions of the bladder wall for ulcers, new growths, etc., as well as in the resection of diverticula and in transplantation of the ureters, its use is often a distinct aid.

The composite instrument is composed of a hollow sheath with a perforated tip (on the order of the cystoscope with the Brown curve), into which is fitted an obturator. This is inserted into the urethra and passed through into the bladder after the patient has been placed on the operating table. A strip of adhesive plaster across the thighs of the patient and

filled with water, antiseptic fluid or air, as may be desired, preparatory to the suprapubic cystotomy. By an electric cord attachment the current is now turned on, and the bladder is outlined by distention and illumination.

After the stay sutures are placed in the bladder wall, the fluid or air is allowed to escape through the instrument, and thus any undue soiling of the operative field is avoided. When the bladder is opened, there is placed a tightly fitting

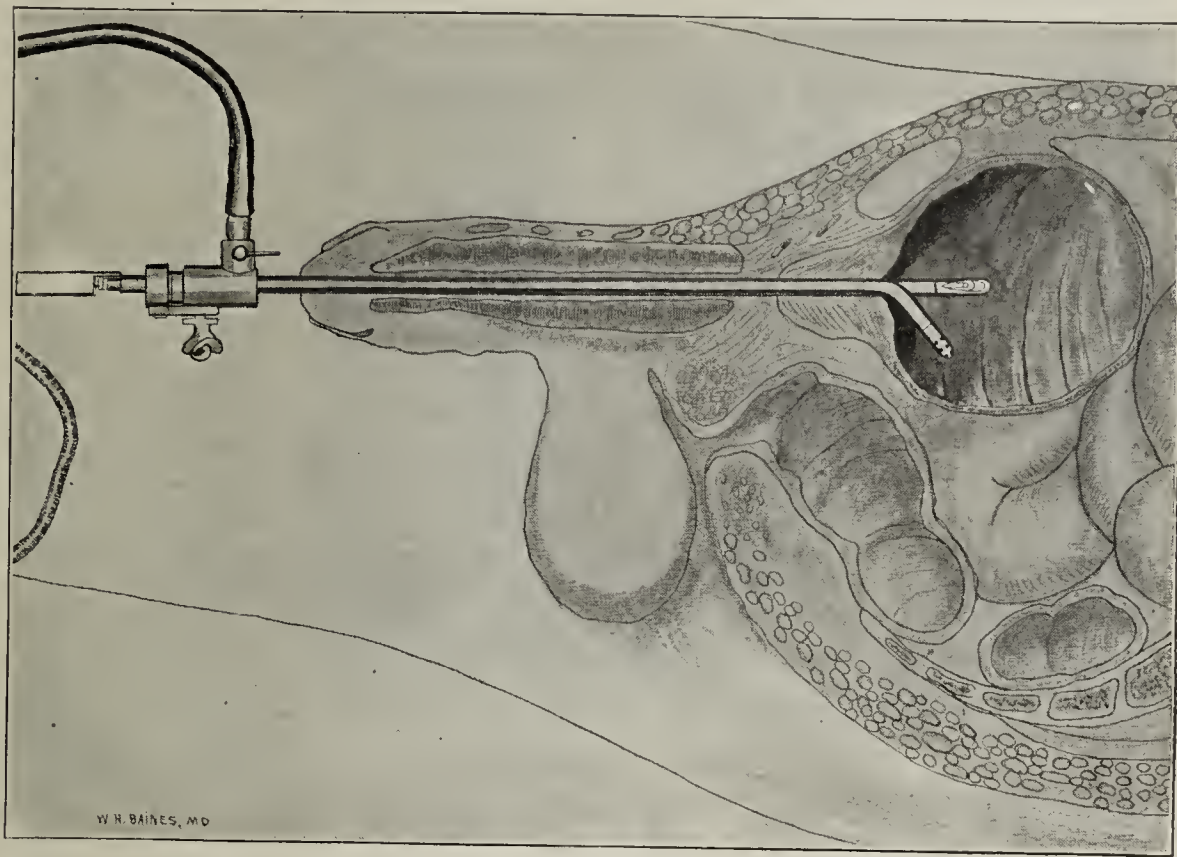


Fig. 2.—Longitudinal section of pelvis, with instrument in position.

perforated cap over the light within the bladder, which serves as a protection to the bladder mucosa from any heat generated by the lamp.

The lamp filament is of adequate illumination to give a brilliant light for hours when it is burned in the air. When the bladder is opened a suction pump (the type that is usually found in any operating room is satisfactory) is attached by heavy rubber tubing to the evacuating nozzle of the instrument, and a gentle suction established. This is usually sufficient for removing all of the urine and much of the blood accumulating within the bladder. Several tips have been devised as suction terminals varying in size, shape and the number of openings.

The accompanying illustrations convey a clear idea of the form and method of use of this device.

469 Franklin Street.

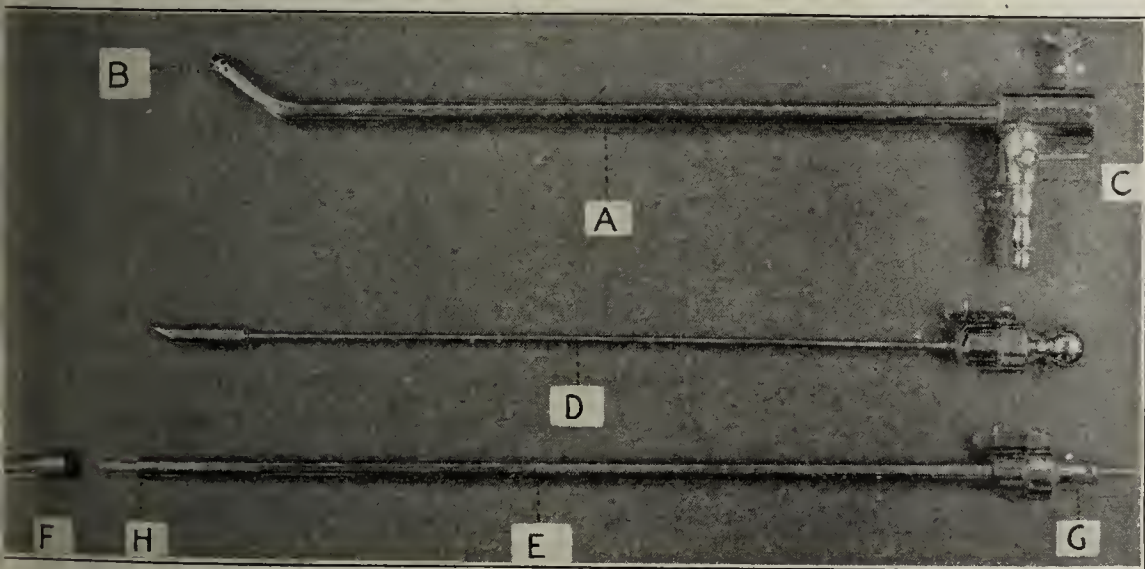


Fig. 1.—Apparatus: A, hollow instrument sheath; B, perforated tip for intake of fluid; C, stopcock for regulating or closing suction; D, obturator which fits into sheath (A); E, hollow evacuating and illuminating tube which fits into sheath (A); F, perforated cap which fits over the light (H); G, light attachment for electric cord; H, light.

attached to the instrument keeps it in place. The obturator is then withdrawn, and the hollow illuminating and evacuating tube is passed into the sheath and securely fastened. By a suitable stopcock any urine is withdrawn and the bladder

complete transformation from the larval stage, and twelve days for the adult mosquito to become infective, a total of thirty days to be counted back from the date of ultimate infectibility. The date to be named for the safe discontinuance of operations against the mosquito as an infecting agency would then be October 1.—*Pub. Health Rep.* 34:1972 (Aug. 29) 1919.

* From the Department of Urology, University of Buffalo Department of Medicine, and the Urological Service of the Buffalo General Hospital.

Malaria Control.—Needless expenditure of public funds may be averted in cases where such funds are limited to malaria control—where it is not the purpose to eradicate the mosquito merely as a pest. Assuming that November 1 was the date determined as that of ultimate mosquito infectibility, and it was desired to recommend the safe time at which to discontinue oiling or other larvicidal measures, allow eighteen days for

THE SHORT CALIPER SPLINT

ROBERT F. PATTERSON, M.D., KNOXVILLE, TENN.

The short caliper splint herein illustrated was developed by me while in charge of the orthopedic service of the U. S. Army base hospital at Fort Sam Houston, Texas. It has



Short caliper splint: front view, in use, and back view.

proved to be uniformly useful in (a) ununited fractures below the knee; (b) weak union, to guard against mishap, and (c) tuberculous or other disease of the ankle or joints of the foot when it is desired to take the weight off of the foot. The splint is intended for the treatment of ambulatory cases.

The right angled portion at the lower end is inserted into the hole in the shoe, as in the application of the long caliper splint. The shoe is now pulled on until the heel lacks about 1 inch of coming in contact with the bottom of the shoe. Next the leather cuff is snugly laced up, and following this the shoe is laced as tightly as can be comfortably borne, after the weight has been borne on the splint. The heel should now just clear the shoe, or rest lightly on it, depending on how much weight it is desired that the foot carry.

If the leg is tender, the cuff can be lined with a pad of saddler's felt glued in place. Ordinarily the patient soon becomes accustomed to the appliance, and prefers no lining except moleskin.

It will be seen that the principle is the same as that of the long caliper, except that this splint takes its bearing surface, as in the case of an artificial leg, from the head of the tibia and fibula, and to a less extent from the entire surface of the leg beneath the cuff, owing to the shape of the leg.

This appliance has these advantages over the long caliper in fractures below the knee: (a) It is inconspicuous, and can be worn under the trousers; (b) it leaves the knee free and thereby prevents stiffness due to immobilization of this joint, and (c) in addition to removing the weight from a fractured bone, it acts as an effectual splint through the medium of the close fitting leather cuff, reinforced by the side irons.

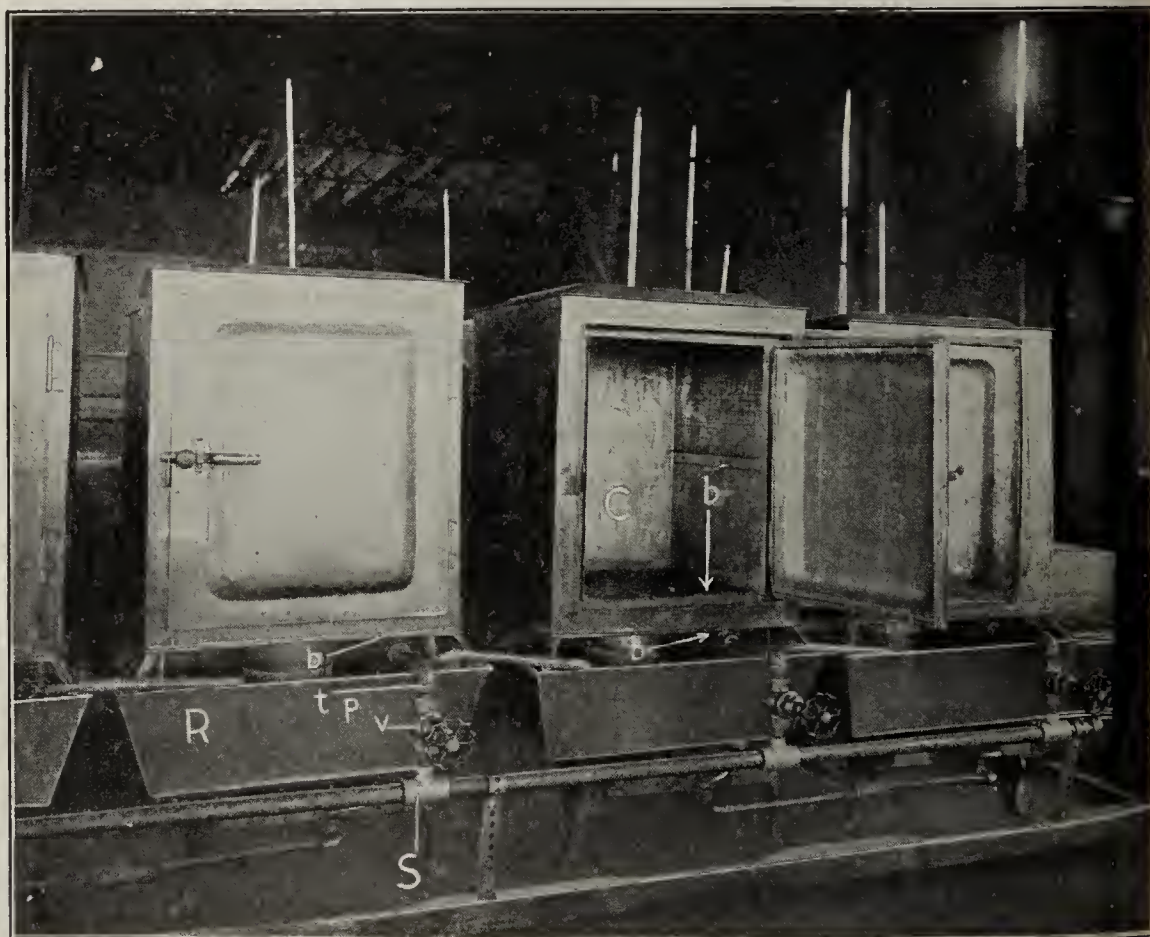
AN IMPROVED DEVICE FOR ARNOLD STERILIZATION *

WILLIAM H. BARNES, A.M., BERKELEY, CALIF.

Large classes in bacteriology necessitate the provision of a good deal of modern and efficient equipment. One of the difficulties with which we have had to contend is the provision of a sufficient number of usable sterilizers, particularly gas heated sterilizers. Although we have enough when they are all in running order, keeping them in good repair has given rise to no little trouble and expense. The gas backfires, and burns in the air chamber of the burner where the air and gas are mixed. This gives less heat units per unit of gas consumed, and results in the production of soot, which collects on the support below and which is scattered about the room. The reservoirs require frequent attention lest they become dry and burn out, notwithstanding the fact that in our laboratory they are filled automatically by siphons, an arrangement devised by Professor Hall.¹ The siphons occasionally clog or become empty and fail to maintain a constant water level.

The device here described, which was installed recently in our laboratory, eliminates these difficulties, reduces the cost of maintaining the process of sterilization, and shortens it.

This device, which is shown in the accompanying illustration, consists of a separate one-half inch pipe (*tp*), with a steam valve (*v*) carrying live steam from a central source, supplied by the main line steam pipe (*S*), to the main compartment (*C*) of each Arnold. A small opening, one-half inch in diameter, is cut in the base (*b*) of the main compartment (*C*), and the tapping pipe (*tp*) is made with an elbow to turn vertically upward into the opening just below the perforated shelf. When the steam is turned on, the temperature immediately rises to 99 or 100 C., never going above 100 C. This result obtains because the compartment (*C*) of the Arnold is not air-tight, and thus the steam cannot be confined under pressure. Part of the condensed steam falls into the reservoir (*R*) below, thus requiring that it be



An improved device for Arnold sterilization.

drained instead of being filled with water. Drainage is accomplished very easily by a connection with a nearby drain pipe.

* From the Department of Pathology and Bacteriology, University of California.

1. Hall, T. C.: Automatic Water Level for Arnold Sterilizers, *J. Bacteriol.* 3:7 (Jan.) 1918.

With this device, we have established an efficient method of Arnold sterilization which combines cheapness, cleanliness, expediency and safety. It is economical because there are no burned out Arnold sterilizers to be repaired, the live steam from a central supply source is cheaper than gas, and there are no gas plates to burn out and be repaired. It is clean because there are no burners to backfire and thus no soot to be spread about. It is expedient because the required temperature is obtained within one minute instead of requiring fifteen or twenty minutes as with the gas heating method. Last, but not necessarily least, there is no danger from fire or overheating in case the Arnold becomes dry, as it is liable to do when in charge of a careless student.

For these reasons, we feel that we have a more efficient device than the old type of gas heated Arnold.

THE VALUE OF BACTERIAL VACCINES IN IMMUNIZATION AND THERAPY

A. M. MOODY, M.D., CHICAGO

During such an epidemic as is now in progress, many physicians become panicky and jump at anything that seems to give promise of preventive and curative possibilities. As a result, commercial houses and laboratories are reaping a financial harvest through the sale of products which could do no good and may do harm. Thus vaccines are being used by many physicians without a proper understanding of the action of such forms of treatment.

In THE JOURNAL last week was an editorial on "Influenza" which calls attention to the prevailing impression regarding specific preventive and therapeutic measures in this disease. It says: "It is doubtful whether such measures exist and also whether they will be discovered in time to demonstrate their virtues in connection with the present conditions. This is especially true when we consider that the bacteriology of these infections varies in different parts of the country and that different persons react in different ways to different bacteria." These statements, I believe, should be discussed more fully, as they have an important bearing on vaccine therapy and preventive measures in other diseases of known and questionable bacterial etiology.

Bacterial vaccines consist of suspensions of killed bacteria in salt solution, oil (lipovaccines) or water, usually with a small amount of preservative, phenol or tricresol, added. There are two kinds: "stock" and "autogenous."

Stock vaccines are those made from laboratory strains of bacteria isolated from patients some time previously. Many of these strains have been grown on artificial mediums for several years.

Autogenous vaccines contain the organisms isolated from the disease process present in the patient for whom the vaccine is made.

GENERAL POINTS ABOUT VACCINES

1. A vaccine is never an emergency form of treatment: it is not indicated in acute, generalized infections.

2. Autogenous are undoubtedly better than stock vaccines for therapeutic purposes:

(a) They contain a growth of the strain of organisms causing or at least associated with the trouble.

(b) They are freshly prepared.

(c) Their antigenic properties are greater.

(d) Their toxic properties are less.

(e) Organisms isolated and made into a vaccine as soon as possible after being removed from the human body usually have greater immunizing properties.

3. As a rule, vaccines prepared four months or more prior to the time when needed should not be used:

(a) Their antigenic or immunizing properties are low.

(b) Their toxic properties are high (a and b can best be demonstrated in *B. coli* and *B. typhosus* vaccines).

(c) They may split up even to the point at which they are devoid of either antigenic or toxic properties and are practically inert.

4. There is a question as to their specificity. Many authorities and clinicians believe that bacterial vaccines are specific

in their action, that is, they cure the disease in question by the production of specific immune bodies. There are also those who go to the other extreme and believe that vaccines are absolutely valueless as therapeutic agents. Some of the former use vaccines for every disease caused by bacteria. It is probable that neither of these groups is wholly correct, since there is sufficient proof that certain diseases of bacterial origin are markedly improved following the injection of some protein material foreign to the particular specific bacteria in question. On the other hand, there is ample evidence that specific bacterial antigens in a limited number of sub-acute and chronic infections are valuable and do yield excellent results.

5. Vaccines when indicated should not be used to the exclusion of other forms of medical, surgical or general management. It is a mistaken idea that a vaccine used alone is a cure. A vaccine should be considered as an adjuvant and used always in addition to other forms of therapy and management indicated in the case in question.

6. According to my experience, vaccines are of value in the treatment of: (a) furunculosis and localized abscesses; (b) acne vulgaris; (c) colon bacillus pyelitis and cystitis; (d) chronic gonorrhea and gonorrheal rheumatism; (e) chronic bronchitis, and (f) bronchial asthma of bacterial origin.

7. Vaccines have very little value if any in: (a) infections of bone and rigid walled cavities; (b) intestinal tract infection, or (c) infections of the uterus and adnexa.

8. They are contraindicated in (a) acute infections and infectious diseases; (b) septicemia and pyemia during acute stages; (c) malignant endocarditis, etc.

PERTINENT QUESTIONS ON VACCINES

It is necessary, then, to ask oneself several pertinent questions:

1. *By what method or through what channels does a given vaccine produce results?* It is supposed, and to some extent known, that foreign protein substances or cells introduced into the body of an animal will be destroyed by something within the fluids, tissues or leukocytes of that animal. Undoubtedly this substance is of the nature of a ferment. It is known that repeated injections of certain of these bodies, as certain types of bacteria, will raise the power of the animal's resistance to this particular type or cell so that large numbers may be introduced without harmful results. Furthermore, these substances seem to be specific for this particular organism. Such an animal is then considered to be immune to this type of infection.

2. *Does immunization against one organism increase the resistance to other types of infection?* There is evidence in the literature of such an occurrence, more particularly in respect to closely related organisms, as in the colon-typhoid group. This, however, varies so greatly in different persons that a positive statement cannot be made.

3. *Can all persons be so immunized?* They cannot, and this is one reason for the development of bacterial disease at a time when, according to our present knowledge, resistance should be greatest.

4. *Are all strains and types of bacteria suitable for immunizing purposes?* They are not, because many bacteria are incapable of producing any reaction on the part of the host to produce specific bodies capable of destroying these organisms. The Pfeiffer bacillus (according to Victor C. Vaughan) is one example of such an organism.

5. *How long does it take immunity or increased resistance to certain organisms to develop?* It takes from eight to ten days to several weeks and sometimes longer.

6. *How long does a given increased resistance last?* This is known to vary within very wide limits from a few weeks to years. In the streptococcus and pneumococcus group, certainly, increased resistance is of very short duration and of a low degree.

TREATMENT WITH VACCINES

In the treatment of conditions in which vaccines are indicated, a good rule to follow is to begin with a dose small enough to avoid a generalized reaction, and gradually increase

this dose to the point at which perhaps only a slight local reaction occurs. At first one may give the injections every day to determine what is the proper dose for the patient being treated. When this point is determined, one should continue to give increasing doses at three or four day intervals until one is giving at each injection not more than one billion organisms. Massive doses of killed organisms are likely to be quite toxic and produce harmful rather than beneficial results. As a matter of fact, under such conditions it is possible to lower greatly the normal resistance of the person treated.

It must be remembered also that the body cells of persons with acute infections are quite sensitive to foreign protein injections. This is important, and physicians using vaccine therapy should bear it in mind and treat such patients with caution.

In prophylactic immunization, especially against typhoid, persons with chronic malaria, tuberculosis, bronchitis, nephritis, etc., are quite likely to react so severely to the ordinary injection that harmful results not infrequently follow.

SUMMARY

Vaccines undoubtedly are of value in increasing resistance against the development of certain diseases. They have curative properties in some chronic conditions, which have been enumerated. Before applying this method, the physician should be sure that the organism used is the actual cause of the condition in question. Immunity against the majority of bacterial diseases at best develops rather slowly, is rarely great, and is usually of short duration. Vaccine therapy is never an emergency form of treatment and therefore should not be used during an epidemic.

5 South Wabash Avenue.

THE DIAGNOSIS OF PRIMARY SYPHILIS BY CULTURE

FRED W. BAESLACK, M.D., AND WILLIAM E. KEANE, M.D., DETROIT
Pathologist and Urologist, Respectively, St. Mary's Hospital

The physician engaged in extensive venereal practice is at times confronted by patients presenting a lesion of the fore-skin or penis which, on account of previous medication, such as the use of calomel ointment, calomel dusting powder, burning with acids or escharotics, or the use of antiseptics, no longer presents the typical appearance of a chancre.

An attempt to make a diagnosis by means of the dark field usually fails, as the employment of the agents indicated above eliminates *Spirochaeta pallida* from the superficial tissues of the chancre, so that even the application of a suction cup does not yield serum which discloses the spirochete on dark-field examination.

In the course of study on the cultivation of *Spirochaeta pallida*, it was found that this organism can be grown from human tissue directly, when small pieces of such tissue are planted on horse serum medium. This medium consists of normal horse serum, free from preservatives, diluted with sterile distilled water in the proportion of 3:1. The diluted serum is put into ordinary test tubes, which are closed with rubber stoppers, previously sterilized. The tubes are filled to within an inch of the top, stoppered, and heated to 60 C. for one hour in a water-bath. The following day the temperature is brought to 70 C. for one hour, and the next day the medium is heated at 70 C. until it takes on the consistency of syrup. The tubes are then stored in the refrigerator. The heating on the three successive days not only gives the medium a semi-solid consistency, but also drives the air from the medium, so that it is under a partial vacuum.

Whenever the location of the suspected sore permits, the tissue is removed by circumcision; otherwise a thin slice of tissue is removed with a razor from the edge of the lesion. The tissue is then planted, and is pushed into the medium from one half to two thirds of the length of the tube.

The tube, if taken from the refrigerator, should be warmed to body temperature before the implantation is made.

If the lips of the tube are thoroughly heated so that the surface of the medium begins to boil, the air above the

medium is sufficiently rarefied to permit replacing the rubber stopper without difficulty after inoculation.

The inoculated tubes are incubated at 37 C. from three to five days, when a few drops of the medium near the tissue are removed with a pipet to a slide for dark-field examination.

Owing to the action of other organisms introduced with the tissue, the serum above the tissue may become liquefied, and the stopper blown out because of gas production by some of the bacteria. Nevertheless the spirochetes will be found in large numbers in symbiosis with these organisms, and can be detected under the dark field by their characteristic motility.

Tissues from such doubtful cases have been planted as late as twenty-four hours after removal. These tissues had been kept, wrapped in gauze, in the ice box for that length of time, and yielded positive cultures, when repeated dark-field examination of the scrapings of the fresh tissue itself were negative.

While the occasion for the procedure outlined may be rare, it will be found worthy of trial, especially since *Spirochaeta pallida* seems to remain in a viable state in the tissues for at least twenty-four hours after removal. The observation of patients, with late developments of syphilis, who never had specific treatment because the initial lesion was removed by circumcision without being recognized as specific, led us to the procedure outlined above.

Such tissues, placed in a small quantity of bouillon and the tube sealed, could no doubt be forwarded to laboratories equipped to do the necessary bacteriologic work.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Continued from page 325)

PURGATIVE PILLS

ALOES

When prescribing a purgative pill, all that is really necessary is to order a sufficient dose of aloes. On account of its reliability, the fact that it does not lose its efficiency on prolonged use, and the relative smallness of its dose, aloes is the practically universal ingredient of cathartic pills. It is, therefore, worth while to study the peculiarities of this drug somewhat more closely.

As the odor is repulsive and the taste intensely bitter, aloes is unsuitable for administration other than in pill form. Its liquid preparations are therefore of no practical importance. Because of their nauseous odor, even its pills are disagreeable unless coated. When extemporaneous pills are prescribed, the mass should always be put into gelatine capsules.

Mode of Action.—It is a curious fact that the glucosids of which aloes is composed are inactive until they become decomposed into sugar and anthraquinon bodies, such as emodin, on which the activity of aloes depends. It is evidently because of the necessity for this change, which occurs in the intestine, that aloes is so slowly acting a purge. From eight to twenty-four hours may elapse before the effect occurs. Hence, it is generally administered at bedtime; though, as the active ingredient of so-called "dinner-pills," it is sometimes given with meals, whether before or after probably does not matter.

* This is the seventeenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

The conversion of the glucosids of aloes into the active bodies is favored by alkalis, including soap, and probably also by bile. This is the reason for the presence of an equal amount of finely powdered soap in the official pills of aloes, which contain 0.13 gm. (2 grains) of each of these ingredients. It is also believed that the activity of aloes is increased by iron salts; this is ascribed to their oxidizing tendency. Aloes is frequently prescribed in combination with iron in the treatment of anemia, as it at one and the same time antagonizes the constipating tendency of the iron and the tendency to constipation in the anemic patient. For this purpose a small dose of aloes, say from 0.005 to 0.010 gm. ($\frac{1}{12}$ to $\frac{1}{6}$ grain) might be added to each one of Bland's pills (pills of ferrous carbonate).

Aloes is a peristaltic stimulant acting chiefly on the colon. It is capable of producing purgation, when applied to raw surfaces or when given hypodermically. However, being a local irritant, it produces too much pain and inflammation to be useful as a hypodermic cathartic. When taken by a nursing woman, it may act as a purge to the babe.

Aloes has the reputation of causing collateral pelvic congestion, for which reason some consider it unsuitable for patients with hemorrhoids. However, this contraindication is certainly not absolute. Many persons who have hemorrhoids take it not only without harm but with actual benefit in the prevention of acute inflammatory disturbances by securing regular and sufficient bowel evacuation. Constipation and violent purgation must alike be avoided by the person with hemorrhoids. Patients suffering from an acute inflammatory complication of hemorrhoids are distressed by any bowel evacuation, and this distress is the greater as the evacuation is more profuse. Such patients do not tolerate active purgation of any kind, and perhaps least all that produced by aloes.

On account of the pelvic congestion which aloes is assumed to cause, aloes is believed to be of value in menorrhoea, and to be shunned in excessive menstruation, tendency to uterine or other genital hemorrhage, and in pregnancy. While ordinary doses of aloetic pills are used as abortifacients, it is advisable to bow to popular prejudice, and to use for pregnant women some other cathartic, such as cascara sagrada or sodium phosphate.

Dose and Administration.—When aloes is to be used for the purpose of increasing colonic irritability in a case that is not considered one of hopelessly incurable constipation, it is best given as a "dinner pill," with meals. When it is thus given, the unit pill of aloes of 0.10 gm. (practically 2 grains, the size of the official pills) is likely to be larger than necessary, and half a dose or less may suffice. Such pills might, for instance, be thus prescribed:

	Gm.	
R. Powdered aloes	1/50	gr. xxiii
Powdered soap	1/50	gr. xxiii
Mix. Make a mass, and divide into 30 capsules.		
Label: One three times a day after meals.		

If this daily dose be insufficient, the patient may be directed to use two or three of these pills, as required, and to return for another prescription when the quantity prescribed has been consumed. After regularity of bowel evacuation has been secured by means of such pills for a week or two, one dose a day is dropped weekly or monthly, as the case may permit, provided the desired effect continues; and, in this way, the cathartic habit may be avoided.

When failure of faithful and repeated trial renders apparent that the patient seems incurably constipated,

then it is best to give him a prescription for pills of sufficient size to secure a thorough evacuation when one daily dose is taken. Such a pill is to be administered at bedtime on the day the patient has been without bowel movement. The patient may be encouraged to make an attempt at stool daily after breakfast. This, as will be seen, makes for economy in pill consumption, and expresses, at the same time, our reluctance to permit the patient to rely entirely on the action of the pills. The patient, however, should also understand that a thorough bowel evacuation every other day is entirely sufficient for most individuals.

There is little actual need for concentrated aloes preparations, as the dose of aloes usually required is sufficiently small to permit the preparation of pills of proper size. This is evidently the reason why purified aloes and the extract of aloes (which has twice the strength of aloes) were deleted from the present pharmacopeia. *Aloin*, which is a mixture of pentosids, is often active in so small a dose, average 0.015 gm. ($\frac{1}{4}$ grain), that inert powder has to be added to it to make a pill of proper size. In such a case, aloin is obviously of no advantage, as we must pay the manufacturer for removal and waste of perhaps 90 per cent. of material from aloes, most of which is far from being inert. Aloin presents advantage only in a case that would require an aloetic pill of excessive size. For such a one, a pill of aloin of 0.1, 0.2, or even 0.3 gm. may have to be prescribed.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

ANTIRABIC VACCINE (see N. N. R., 1920, p. 272).

The Gilliland Laboratories, Ambler, Pa.

Pasteur Anti-Rabic Vaccine.—The virus is prepared in accordance with the general method of the U. S. Public Health Service. One-fifth of an inch of dried cord, emulsified in 0.6 Cc. of 60 per cent. glycerine containing 0.3 per cent. trikresol is supplied. This is diluted with 2.5 Cc. of sterile physiological solution of sodium chloride which is supplied at the time of injection. The treatment consists of twenty-one to twenty-four doses, and are sent separately each day by Special Delivery. The first day dose is cord, dried 8, 7 and 6 days respectively; the second day is cord, dried 5 and 4 days respectively, and daily afterward, cords, dried 3, 5, 4, 3, 3, 2, 5, 5, 4, 4, 3, 3, 2, 2, 4, 3, 2, 2 days to completion of treatment.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 286).

The Gilliland Laboratories, Ambler, Pa.

Pneumococcus Vaccine Immunizing.—Contains Types I, II and III, respectively, in equal proportions, preserved by three cresols 0.25 per cent. Marketed in packages of four syringes containing 250, 500, 1,000 and 2,000 million killed pneumococci per Cc.; also in packages of four ampules containing 250, 500, 1,000 and 2,000 million killed pneumococci per Cc.

STAPHYLOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 288).

The Gilliland Laboratories, Ambler, Pa.

Staphylococcus Vaccine (Albus and Aureus).—A suspension of *Staphylococcus albus* and *Staphylococcus aureus* in equal proportions, in physiological solution of sodium chloride and preserved with 0.25 per cent. three cresols. Marketed in packages of four syringes containing, respectively, 250, 500, 1,000 and 2,000 million killed bacteria in 1 Cc.; also marketed in packages of four ampules containing, respectively, 250, 500, 1,000 and 2,000 million killed bacteria in 1 Cc.

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SATURDAY, FEBRUARY 7, 1920

LIFE, DEATH—AND BACTERIA

The desire to prolong human life requires no defense, nor is it difficult to understand. Death is rarely a welcomed visitor in the human household; and it is quite natural that thinking minds should have occupied themselves with the possibility of averting death. As Jacques Loeb has remarked, the efforts to prolong life have resulted merely in a diminution of the chances of premature death. Modern preventive medicine has succeeded in warding off many menaces to life by conquering some of the dangerous infectious diseases and even threatening contagions. At best, however, by such accomplishments each person is merely guaranteed with greater degree of probability that he may enjoy the full usual duration of life. Death is not averted.

The students of some of the lower forms of animal life have found much encouragement for the belief that protoplasm is, in a sense, immortal. The biologist Maupas¹ had come to the conclusion, thirty years ago, that the unicellular organisms which he investigated could not continue to multiply endlessly by the method of fission which represents a common mode of reproduction in these forms. They reach a certain size, then divide in two, whereupon each fragment continues to grow to full size and then divides again. Maupas asserted that the race ran out after a time unless by the sexual process of conjugation some new strain of protoplasm was introduced into the organism. The observations of Woodruff² at Yale University indicate, however, that if the food and environmental conditions are suitable, reproduction may proceed an indefinitely long time without conjugation. Beginning in 1907, this American biologist has patiently followed the development of isolated infusoria through literally thousands of generations which have developed with the usual regularity without any protoplasmic contribution from other individuals of the species. Similar experiences have recently been

reported by Metalnikow,³ who conducted his experiments in Russia. The evidence from such sources suggests that fundamentally the living cell has an inherent capacity for renewal and multiplication indefinitely. In this sense, protoplasm appears to be immortal.

For higher forms of life, comparable results also have been reported suggesting, as was indicated recently in *THE JOURNAL*,⁴ that elemental death might be postponed indefinitely if a suitable nutrition could be attained continuously for the cells. Carrel's prolonged growth of connective tissue fragments outside of the body indicates this. Are we to assume from these diverse facts that, in the words of Loeb, death is not inherent in the individual cell, but is only the fate of more complicated organisms in which different types of cells or tissues are dependent on each other? Metchnikoff was responsible for the widespread impression that foreign organisms in the guise of certain intestinal bacteria are responsible for premature senility and death. The hope of averting old age has been encouraged by the advice to exclude the alimentary offenders from the body through a suitable regimen. Until recently the question as to whether life without bacteria is actually possible might have been seriously debated; but Loeb and Northrup⁵ have succeeded in raising aseptically nearly a hundred successive generations of fruit flies grown on sterilized food and themselves free from bacteria. Yet these animals all arrived at old age—and died.

Can it be that the metabolism itself of a complex organism determines the ultimate onset of death? Do the chemical processes in some groups of cells produce compounds detrimental to others, or does the transformation of materials gradually consume some essential substance which is not replaced? The scientist knows that the rate of a chemical reaction ordinarily is hastened when the temperature is raised, and decreased when it is lowered. Accordingly, Loeb⁵ has reasoned that if the duration of life is the time required for the completion of certain chemical reactions in the body, the duration of life may be doubled or trebled when the environmental temperature is lowered. The test of the hypothesis has been made on the aseptic flies in which the danger of accidental death by infection is excluded. The results show that the influence of temperature on the duration of life of the fly is the same as the influence of temperature on the velocity of a chemical reaction, since a lowering of the temperature by ten degrees results in an increase in the duration of life by two or three hundred per cent., and the same figure would be obtained if we investigated the effect of temperature on the time required to complete a chemical reaction.

1. Maupas, E.: Recherches expérimentales sur la multiplication des infusoires ciliés, *Arch. de zool. expér.* **6**, 1889; Le rajeunissement karyogamique chez les ciliés, *ibid.* **7**: 1889.

2. Woodruff, L. L.: A Five-Year Pedigreed Race of *Paramecium* Without Conjugation, *Proc. Soc. Exper. Biol. & Med.* **9**: 121, 1912; On So-Called Conjugating and Nonconjugating Races of *Paramecium*, *Jour. Exper. Zool.* **16**, 1914.

3. Metalnikow, S.: L'immortalité des organismes unicellulaires, *Ann. de l'Inst. Pasteur*, **33**: 817 (Nov.) 1919.

4. The Death of Tissues and the Life of Protoplasm, editorial, *J. A. M. A.* **74**: 327 (Jan. 31) 1920.

5. Loeb, J.: Natural Death and the Duration of Life, *Scient. Month.* **9**: 578 (Dec.) 1919.

Such are the facts. Fortunately or unfortunately, higher organisms cannot endure a lowered temperature; hence this device for prolonging existence cannot be requisitioned by man. In any event, death appears as the natural result of life if the latter is to be conceived as the time required for the completion of a chemical reaction or series of such reactions. The problem of prolonging life thus appears to consist either in finding an antidote to the harmful products that gradually accumulate as the result of the body's metabolism, or in replacing that substance possible for youthful condition and gradually destroyed in growth—or in both. At any rate, the bacteria no longer have the odious distinction of being the sole enemies of human longevity.

THE VOLUME OF THE BLOOD

The old practice of bloodletting was based, in many instances, on a desire to relieve what was supposed to be a condition of plethora. Even at the beginning of the Christian era in the days of Celsus, however, it was recognized that venesection should not be practiced indiscriminately. Precisely what criteria should be employed is not very clear; yet it is stated in *Arte Medica, Libri Octo*:

The determining factor (i. e., in bloodletting) is neither the age nor the pregnant state of the patient, but rather the degree of physical strength. . . . There may arise, in connection with the operation of venesection, a number of questions which are likely to puzzle an inexperienced physician and perhaps lead him into error. . . . Is it not the very essence of our art, not merely to consider the factors of age and the pregnant state, but also to form an estimate of the other and more important factor, viz., the patient's strength, and then to decide whether it is, or is not, great enough to bear the loss of blood?¹

Strictly speaking, the assumed plethora which gave occasion for venesection assumed an increased amount of blood in the body. Modern research has indicated, however, that the volume of the circulating fluid tends to be maintained fairly constant in spite of influences tending to alter it. Pearce² has remarked that the "plethoric" conditions formerly thought to be appropriate for bloodletting were presumably in many instances cases of chronic hypertension in which there is so far as is now known, no actual increase in blood volume.

There are, nevertheless, circumstances in which variations in the quantity of the circulating medium actually occur. The regulatory and compensatory reactions of the organism whereby the exchange of fluids between blood and tissues should lead to an altered equilibrium is not always perfect. Thus the assertion that the effective volume of the blood is

reduced in shock has been made frequently of late.³ The treatment of hemorrhage involves consideration of the restoration of blood volume. The methods for estimating the volume have been indirect and difficult for clinical application. Many years ago, Bischoff⁴ applied Welcker's method of direct determination of the hemoglobin extracted from the entire body of two decapitated criminals, thereby concluding that the blood volume constitutes one thirteenth of the body weight. Such postmortem methods would obviously not carry us far in the study of the changing conditions of disease and therapy. Today one may still find values ranging from one twenty-first to one eighth of the body weight given for the blood volume of man.

Owing to the efforts of Van Slyke and Salvesen,⁵ a technic has been simplified to bring it more conveniently within the range of clinical possibility. With this, Salvesen⁶ found in experiments conducted in the Hospital of the Rockefeller Institute for Medical Research, New York, an average blood volume of 3,888 c.c. in six healthy persons ranging in age from 23 to 37 years. The extreme values represented one fourteenth and one nineteenth of the body weight, with an average of 5.95 c.c. per hundred grams. It will be interesting to learn the results of applications of this technic to the study of blood volume variations in disease. The data already obtained give some indications of what may be involved in current modes of venesection, of the limits of transfusion and infusion, and of other factors concerned in the modification of the circulating medium of man.

SPREAD OF THE SPIROCHETE OF INFECTIOUS JAUNDICE

Modern medicine has taught the importance of knowing the parasites of the animals that live in close contact with man. The louse, the flea, the mosquito and the rat are not merely disagreeable pests which disturb our comfort or damage our property; they are the often unsuspected carriers of harm—the hosts of invisible foes of mankind. Scarcely five years have elapsed since the Japanese investigator Inada and his colleagues discovered that *Spirochaeta icterohaemorrhagiae* is the cause of Weil's disease, to which the name "spirochetel jaundice" may now properly be applied. This discovery was made opportunely, as epidemic jaundice became prevalent among some of the troops of the allied nations early in the war. The rat was found to be a carrier of the parasite; and as the disease reported among soldiers of practically all nations engaged in combat was found most frequently

3. Improved Methods of Treatment of Shock, editorial, J. A. M. A. **74**: 106 (Jan. 10) 1920.

4. Bischoff, T. W. L.: Ztschr. wissensch. Zool. **7**: 331, 1856; **9**: 65, 1858.

5. Van Slyke, D. D., and Salvesen, H. A.: The Determination of Carbon Monoxid in Blood, J. Biol. Chem. **40**: 103 (Nov.) 1919.

6. Salvesen, H. A.: The Determination of Blood Volume by the Carbon Monoxid Method, J. Biol. Chem. **40**: 109 (Nov.) 1919.

¹. Quoted from Védrenes' version (Paris, 1876) of Celsus, in Buck, L.: The Growth of Medicine, New Haven, Conn., Yale University Press, 1917, p. 152.

². Pearce, R. G., cited by Macleod, J. J. R.: Physiology and Biochemistry in Modern Medicine, St. Louis, C. V. Mosby Company, 1917, p. 86.

at the front, the rat-infested environment permitted an interpretation of the probable etiologic factors.

Spirochetal jaundice is not confined to Japan or to the fields of Flanders. As might be expected, the rat in other parts of the world has given evidence of infestation with the spirochete of this disease. Lyons, Marseilles, Barcelona, Tunis, Algiers and New York have already given scientific proofs of the same danger in their midst. London is the latest city to furnish new evidence of the widespread occurrence of the parasite in wild rats. Foulerton¹ has examined more than a hundred of these rodents at the Department of Hygiene in University College, and found at least 4 per cent. infected with the spirochete of jaundice.

The worldwide distribution of reservoirs of this spirochetal disease must now be recognized. This makes it more imperative than ever to learn the mode of transmission to man. Although spirochetal jaundice in man has been caused by rat-bite, direct infection in this manner can be excluded in practically all instances, in contrast with what happens in the genesis of rat-bite fever due to *Spirocheta morsus-muris*.² Foulerton has pointed out that although it is not quite certain whether the spirochete of jaundice has been identified in the intestinal contents of the healthy rat, it has been found in the feces of infected guinea-pigs; and its presence in the feces in cases of spirochetal jaundice in man may be assumed. He adds that the presence of the spirochetes in considerable numbers in the urine of rat-carriers is quite sufficient to insure a wide distribution in rat-infested areas. The possible rôle of insects as accessory or alternative factors in spreading infection cannot be excluded. However, as Noguchi³ has recorded a case in which the urine was actively pathogenic as late as four weeks after the onset of the disease, the convalescent stage of which commences usually at about the fourteenth day, the urine of human patients must still be looked on as a source of possible danger.

PHYSICAL DEFECTS AS REVEALED BY THE WAR

In the history of nations there are few instances in which an exhaustive survey of "the physical, mental and temperamental health" of a large group of the population has been made without selection. The medical examination made necessary by the drafting of millions of young men for the exigencies of the recent war has furnished statistics of a unique value which will afford an opportunity for an evaluation of the physique of mankind on a scale never approximated in any comparable degree. We have heard much of

late regarding the imperfections of the new race of young citizens and the large incidence of defects which have been revealed by the war-time medical examinations. It should be remembered, however, that many of the shortcomings were of minor importance to the well-being or working capacity of the individuals concerned. The army regulations have presented a standard of physical perfection far beyond that necessitated by the requirements of comfortable and useful existence. Many recorded defects were noteworthy from a military standpoint alone.

Against the criticisms of the national health and physique of American boys we may now cite the outcome of the study made of the records of about 2,500,000 men by Major Davenport and Lieutenant-Colonel Love for the Medical Department of the United States Army.¹ In the total population examined there were found 468 men defective per thousand examined. This means that over half of the men were found to be without any physical or mental blemish significant enough to be recorded. About two fifths of all the defects were of a mechanical sort, involving bones and joints. The second place is taken by sense organs, followed by tuberculosis and venereal disease. Many of the defects were remediable; some of the diseases were curable. The army experts assert that fully 90 per cent. of the defects found were not of such a nature as to interfere seriously with the man's performing services of the highest order in civil life.

It is to be regretted that the various countries in which recruits were examined under the draft could not have adopted some uniform system of examination and classification. Recently Comrie² analyzed the defects exhibited by 10,000 recruits in a district in Scotland which contained both rural and urban population. The most striking facts brought out are that approximately 50 per cent. of the recruits examined were qualified for the most strenuous kind of physical work. Among the other 50 per cent., about two fifths were capable of fairly strenuous work, a little less than this proportion were capable only of clerical duty, and about one sixth were either postponed or rejected. Although the system of classification adopted by the United States differed materially from that adopted in Great Britain and it is difficult to make an accurate comparison of the two countries as to the relative efficiency of their man power, certain points may be discussed to advantage.

A comparison of the cause of the rejections among the Scottish and American draft registrants is difficult not only on account of the different systems used but also because American statistics show extraordinary variations in different states. It is true, of course, that Comrie's figures are probably not applicable to the entire United Kingdom, though it is doubtful whether the great divergence would exist there that exists in a

1. Foulerton, A. G. R.: The Protozoal Parasites of the Rat, with Special Reference to the Rat as a Natural Reservoir of *Spirochaeta Icterohaemorrhagiae*, J. Path. & Bacteriol. **23**:78 (Oct.) 1919.

2. Spirochete Transmission in Rat-Bite Fever, editorial, J. A. M. A. **74**:250 (Jan. 24) 1920.

3. Noguchi, Hideyo: The Survival of *Leptospira* (*Spirochaeta*) *Icterohaemorrhagiae* in Nature, Observations Concerning Microchemical Reactions and Intermediary Hosts, J. Exper. Med. **27**:609 (May) 1918.

1. Davenport, C. B., and Love, A. G.: Defects Found in Drafted Men, Scient. Month. **10**:1 (Jan.) 1920.

2. Comrie, J. D.: Lancet **2**:957 (Nov. 29) 1919; abstr. J. A. M. A. **74**:61 (Jan. 3) 1920.

country with the extent and climatic variations of the United States. There would doubtless be material differences in the causes of disability in different parts of the United Kingdom as there are here. Taking diseases of the thyroid gland as an instance, it is noted that among Comrie's Scottish recruits only 0.5 per cent. were rejected on account of goiter. These figures are comparable to those from some of our states. Indeed, in Maine only 0.3 per cent. of the recruits were rejected for thyroid disease. On the other hand, 6.2 per cent. were rejected in the District of Columbia; and in other states, Missouri and Wisconsin, for example, the percentage rejected for disease of the thyroid is high. Great discrepancies are found in connection with other diseases. It is hard to understand, for example, why only 1.07 per cent. of the Scottish recruits were rejected for pulmonary tuberculosis, while in one American state 23 per cent. of the recruits were rejected for this reason. One is forced to the conclusion that such an enormous difference in such a prevalent disease cannot be due to local variations in the incidence of the disease but must be due to variations in the methods of examination and in the interpretation of physical findings.

These figures of Comrie serve to call our attention once more to the fact that a considerable proportion of the male population is suffering from defects, many of which are preventable. Comrie's figures show that the proportion of men capable of the more strenuous demands of military duty progressively diminishes from 100 per cent. at the age of 18 to 30 per cent. at the age of 40. The American figures published so far do not touch on this particular aspect of the situation, but there is no special reason to believe that the general principle is any different in the United States than it is in Scotland. There is always danger, particularly if this country does not adopt some form of conscription, of forgetting the valuable lessons which were learned from the result of the wholesale examinations made by the draft boards and by the boards of medical officers in the camps. The particular point of view that is emphasized by these results is the necessity for a much wider application of individual preventive medicine than has heretofore been deemed necessary. The day has passed when preventive medicine consisted merely in attention to water supplies, sewerage and general sanitation. The education of the public in the principles of correct living and the periodic examination of supposedly healthy individuals must become part of our program as physicians if any great progress is to be made in the prevention of disease. While the necessity for community hygiene continues and still needs developing in many quarters, it has been clearly demonstrated that general sanitation will carry us only so far, and that the preventive medicine of the future must be concerned with the individual much more than has the preventive medicine of the past. The nineteenth century was the century of communal hygiene; the twentieth must be the century of individual hygiene.

Current Comment

SOME PUBLIC HEALTH PROBLEMS IN CENTRAL EUROPE

Only he who is blind to the tendencies of the times will fail to see the progress being achieved by that movement for public health which has been described in a measure as the socialization of medicine. Comparatively few of the long desired activities in the direction of preventive medicine have received governmental support in an authoritative way. The public health agencies carefully guard us as a nation against the attack of many infectious diseases, but most of the efforts to advance human welfare receive their initiative in the work of the individual or groups of persons organized for the common good. The war has been an impetus to put into operation many health projects that were making only slow advance in the self-satisfied days of peace. Nation-wide plans for health betterment and the conservation of human life have been launched. In England a ministry of health has at length been made a reality. It is interesting to learn, from the words of an expert, what the pressing problems of public health are in the reconstruction period of the defeated countries. In an address before the new Prussian parliament of which he has become a valued member, Professor Abderhalden¹ of Halle, widely known in this country as an energetic physiologist, has discussed the current needs with great frankness. Foremost is the desirability of improving the physiologic status of the child population. It has been undernourished physically and mentally. The mortality in childhood has increased greatly, and this ordinarily happy period of life has been robbed of its joys. One of the new plans proposed to counteract the situation aims to send children away to tolerant neutral countries for recuperation—a novel suggestion. The transport of curable tuberculous children to Switzerland, where milk is available, is included in the suggestion of a medically supervised adolescence. The improvement of the living conditions, and in particular the dietary, of the working people is likewise urgently recommended to the governmental authorities. In some regions the lack of abundant rations of a suitable sort has led to decreased output. The campaign against venereal disease seems to be needed as never before in central Europe. The freedom from governmental restraint which comes to all incipient revolutionary democracies is always liable to be attended with license of conduct. Our own national dangers from the venereal menace are by no means trivial; but, added to tuberculosis and undernutrition, the venereal diseases furnish an exceptionally serious problem. The worst features of alcoholism are expected to disappear in the United States with the establishment of permanent, nation-wide prohibition. A few months under the new regimen ought to furnish indisputable evidence as to its hygienic worth. Abderhalden sees a threat of great harm ahead for his country when once the routes of

1. An account of the address is given in the *Münchener medizinische Wochenschrift*, Oct. 3, 1919, No. 40, p. 1156.

trade are restored so that alcoholic drink can be imported or the possibility of its manufacture restored. How temperance is to be instituted in the midst of a nation which craves the return of alcohol will prove to be a problem of singular difficulty for legislatures and ministries to solve.

UNIVERSAL MILITARY TRAINING

The Wadsworth army bill, having been reported from committee, now approaches final consideration and action by the senate. Great interest has developed in the universal training feature of this bill, on which we commented last week.¹ Physicians are interested in this feature from two points of view: first, as it concerns the creation of an active medical reserve corps, and second, in its relation to the physical development of the young men of the nation. If we are to give actual field training to all of the young men of our country in future years, it will be necessary that they be physically examined before going into active training, that their health be guarded during the period of training, and that they receive periodic examination during subsequent years, so as to determine their fitness for service if need demands. At the same time as these young men are trained, it will be necessary to train the medical reserve officers who are to take care of them under military conditions. From the general point of view, the matter is one that affects the health of the entire nation. In the first place, physical examination of these young men will disclose certain defects which may be corrected, thus prolonging their lives. The period of physical training in the field will bring about increased physical stamina, which will mean a better type of man. Those who saw the results of military training on the physical condition of our selective service army need no argument as to the beneficial effects of such training. Increased stature, more erect carriage, greater muscular ability and elimination of superfluous adipose tissue were distinguishing signs of those who had had even brief periods of such training.

THE RELATION OF DIABETES INSIPIDUS TO DISEASE OF THE HYPOPHYSIS

The etiology of diabetes insipidus was for a long time shrouded in mystery. It was known that the disease was associated in many instances with injuries involving the base of the brain and with pathologic lesions occurring in that region. It was a notable fact that syphilitic lesions involving the basal region were particularly likely to be associated with diabetes insipidus. It is only in recent years, however, that a relationship between this disease and disturbances of the function of the pituitary body has been seriously considered. As studies of pituitary disease have progressed, it has been noted that polyuria is a not infrequent symptom. In dystrophia adiposogenitalis, this symptom may be pronounced; in acromegaly, both polyuria and glycosuria may be present, and in certain types of infantilism associated with pituitary disease, the passage of large quantities of urine may be an

outstanding feature. It has been noted, too, that tumors in the neighborhood of the hypophysis which exert pressure on this gland can be associated with the clinical picture of diabetes insipidus. As Pagniez¹ points out, it was only in 1913 that it was first demonstrated that the administration of pituitary extract has a decided effect in controlling the urinary output in some of these cases. Since that time a number of observers have confirmed this observation, although the administration of pituitary extract has not invariably been successful in this regard. In many of the cases the effect has been of a more or less temporary nature. Experimental work, such as that done by Harvey Cushing in this country, has likewise shown a relationship between the pituitary gland and the excretion of urine. Damage to the pituitary gland during operative procedures may result in polyuria, and ablation of the gland in animals likewise results in polyuria. These observations all tend to show that there is a definite relationship between the syndrome that we call diabetes insipidus and disease of the hypophysis, particularly the posterior lobe. The exact mechanism of the process is not yet clear. The importance of such a relationship, however, has a bearing on diagnosis, and suggests the careful roentgenographic examination of the skull in cases of this nature. Therapeutically, it suggests the administration of pituitary extract as a curative measure.

YEARS AND POWERS

The recent death of Field Marshal Sir Evelyn Wood at the age of nearly 82 recalls that the great war has furnished many contradictions of the prevalent impression that men who are subjected to severe strains and stresses in life, under a heavy burden of responsibility, are likely to break down and either suffer from nervous exhaustion or else die when comparatively young. Sir Evelyn Wood was a veteran of the Crimea; he was wounded in the assault on the Redan some sixty-five years ago, yet he took an active part in the organization of the British army during the recent war. He had served through the Indian mutiny with great distinction, receiving the Victoria Cross for bravery, served through the Ashanti war in South Africa as well as the Kaffir war and then the Zulu war, spent six years in Egypt in the strenuous post of commander of the forces in the lines of communication under Lord Wolseley, and after his retirement from the army as field marshal was active as the chairman of the Association of the City of London for organizing a territorial force. A great many distinguished military leaders have been noted for longevity. Von Moltke, who went through the strain and stress of the Franco-Prussian War fifty years ago, lived, like Sir Evelyn Wood, to be well beyond 80. Though Lord Roberts, the great English general, had been so disabled that his life was despaired of as a young man, he obtained the Victoria Cross for bravery, had been wounded a number of times, went through the Boer war, and yet was so far from exhaustion at 80 that the English government entrusted to him a large measure of responsibility for the mobiliza-

1. Universal Military Training, Current Comment, J. A. M. A. 74: 329 (Jan. 31) 1920.

1. Pagniez: Presse méd. 27:746, 1919.

tion and organization of the fighting forces on the western front. He died of pneumonia not far behind the lines in France, quite as any younger man might have done. Among the French, Clemenceau and Foch are conspicuous examples of what older men accomplished in the great emergency. The idea of exhaustion as a source of pathologic development and especially of such lack of nervous control as has been called nervous breakdown has not, therefore, been wholly confirmed by the war's experiences. It might confidently have been expected that the demands made on the human organism would surely cause collapse. However, unless there was definite predisposition, personal or hereditary, to the occurrence of serious nervous symptoms, these do not seem to have developed either in military or civil conditions in spite of the intense strain to which the war subjected many people. This was particularly true with regard to men who were well on in years when the war broke out. The war has shown that both men and women can stand more than was believed possible. It has also demonstrated that the powers of men are maintained to a greater age than has usually been conceded.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

New Officers.—Washington County Medical Association at its annual meeting in Springdale, January 17, elected Dr. Richard T. Henry, Springdale, president; Dr. Ephraim G. McCormick, Prairie Grove, vice president; Dr. Nina V. Hardin, Fayetteville, of the University of Arkansas Infirmary, secretary, and Dr. William H. Mock, Prairie Grove, treasurer.—Sebastian County Medical Society at its annual meeting in Fort Smith, January 17, elected Dr. William R. Brooksher, Fort Smith, president; Dr. Dred R. Corente, Fort Smith, secretary, and Dr. Rufus F. Parks, Bonanza, treasurer.

COLORADO

Cancer Campaign.—Dr. Charles A. Powers, Denver, chairman of the Colorado committee of the American Society for the Control of Cancer, states that the committee has privately secured funds which will enable them to send the little booklet called "What We Know About Cancer" to the physicians of the state.

Course in Public Health Nursing.—The University of Colorado announces a four months' course in public health nursing under the joint auspices of the University of Colorado extension division, and the Colorado Fuel and Iron Company, to be held in Minnequa steel works and hospital, with field work in Pueblo and mining camps, from March 1 to June 21. The course consists of lectures and class recitations and field work. The tuition fee is \$25 for the course.

CONNECTICUT

Personal.—Dr. Thomas Eben Reeks, New Britain, has resigned as deputy commissioner of public health and director of the bureau of preventable diseases.

Society Meetings.—Waterbury Medical Association at its annual meeting, January 12, elected Dr. Edward W. Goodenough, president; Dr. Michael J. Lawlor, vice president; Dr. George A. Gosselin, secretary, and Dr. George O. Robins, treasurer.—New Britain Medical Society recently gave a dinner in honor of its members who served in the United States Army or Navy during the war.

Mental Hygiene Division Established.—The department of health of Connecticut has established a division of mental hygiene and has appointed Dr. William B. Terhune, New Haven, director of that division. The Connecticut state department of health is the first in the United States to establish a division for the supervision of the care, and the enforcement of the laws, relative to the mentally afflicted.

Sanatorium Opened.—The state tuberculosis commission has issued a statement that the sanatorium at Crescent Beach for the treatment of bone and glandular troubles is opened for the receiving of patients. There are accommodations for fifty-eight patients. With a view to having every patient examined on admission, the state has been divided into districts and a physician designated to make examinations in each district. Dr. William M. Stockwell, Hartford, will make examinations for Hartford County, Dr. Cole B. Gibson, Meriden, for New Haven County, and Dr. Hugh B. Campbell, Norwich, for the eastern part of the state. Dr. Edward J. Lynch, Shelton, will have charge of Fairfield County. The examinations in Litchfield County will be conducted by Drs. Lynch, Stockwell and Gibson.

IDAHO

Health Progress.—More than \$400,000 will be expended in the next biennium for improvements at the various state institutions. Two department hospitals will be erected at a cost of \$140,000, one in the northern and the other in the southern part of the state.

Smallpox.—The state bureau of public health on January 7 asked the municipal and county officers to pass regulations requiring all children who attend school to be vaccinated for smallpox. The disease is present in twenty-six of the forty-four counties of the state.

ILLINOIS

Personal.—Dr. E. Bruce Godfrey, Springfield, has accepted a position in the Red Cross service, and expects soon to leave for his new field of work in Roumania.

Influenza.—February 1 and 2, only fifty-three influenza and six pneumonia cases were admitted to the hospital at Great Lakes, and no deaths were reported, February 2. This brings the total number of cases up to 1,403.

Sanatorium Burns.—Fire destroyed the main building of the Edwards Sanatorium, Naperville, February 1. The patients were removed to other buildings of the institution without casualty or panic. The loss is covered by insurance.

Grant for Therapeutic Research Work.—Northwestern University Department of Chemistry has received a grant of \$3,500 from the interdepartmental social hygiene fund of the United States government for the purpose of supporting research leading to the development of new metallo-organic compounds which may prove of therapeutic value in the treatment of syphilis of the central nervous system. A plan of cooperation has been worked out between the Universities of Wisconsin, Minnesota, Illinois and Northwestern whereby all pharmacologic work will be done by the first named institution and the synthesis of new compounds by Minnesota, Illinois and Northwestern in cooperation.

Illegal Practitioners Fined.—James A. Savage of Danville was arrested by the Department of Registration and Education of the State of Illinois, for practicing medicine without a license. He was found guilty by a jury and given a jail sentence of ninety days and fined \$50, the jail sentence to be suspended provided Savage secures a state license or quits practicing. In passing sentence, Judge Partlow stated that the people had a right to ask any man practicing medicine or healing to secure a state license; that the law required it and, therefore, there was no other way around it.—Mrs. Antoinetta Bolstepa of 2929 South Shields Avenue, Chicago, was arrested by the Department of Registration and Education of the State of Illinois for practicing midwifery without a license and was fined \$25 and costs. She promised to discontinue practicing in the future.—Frances Wesolowski of Blue Island was also arrested by the department and fined the minimum amount for practicing midwifery without a license.

Chicago

Influenza.—During the twenty-four hours ended February 2, only 802 cases of influenza were reported, with eighty-nine deaths from influenza and sixty-nine from pneumonia.

Vienna Thanks Chicago.—Dr. Carl Beck, secretary and manager of the Vienna Relief Fund, has received from Dr.

Adolph Lorenz, Vienna, a letter acknowledging the receipt of 250,000 crowns, to be distributed for food and clothing. Since the date of that letter, \$35,000 have been cabled to Vienna from Chicago.

Drive for Augustana Hospital.—Final arrangements for a campaign to raise \$700,000 for the Augustana Hospital between February 16 and 26 were provided at a meeting of the executive committee, January 30. Chief Justice Harry Olson is chairman, and Mrs. John A. Christianson vice chairman of the committee.

Postponement of Meeting.—Owing to the epidemic of influenza, the joint meeting of the Minneapolis Academy of Ophthalmology and Otology the Milwaukee Oto-Laryngological Club, the Chicago Oto-Laryngological Society, and the Chicago Ophthalmological Society planned for this month has been indefinitely postponed.

Visiting Nurse Association.—The thirtieth annual meeting of the Visiting Nurse Association of Chicago was held, January 30, under the presidency of Mrs. Joseph M. Cudahy. The treasurer reported a balance of \$30,317 in the treasury. During the year ten new nurses were added to the staff. Mrs. Cudahy was reelected president.

Institute of Medicine.—At the meeting of the Institute of Medicine of Chicago, January 30, at the City Club, Dr. Victor C. Vaughan of the University of Michigan, Ann Arbor, presented a paper on "Remarks on the Chemistry of the Protein Molecule in Relation to Infection," and Dr. Karl K. Koessler spoke on "The Relations of Proteinogenous Amins to Medicine."

Robert Koch Society Meeting.—The thirty-seventh meeting of the Robert Koch Society for the Study of Tuberculosis was held, January 29, under the presidency of Dr. Ethan A. Gray at the City Club. Dr. Edwin B. Tuteur spoke on "Neglected Opportunities in the Therapy of Tuberculosis;" Dr. James A. Britton on "Tuberculosis and Occupation," and Dr. Wilson Ruffin Abbott on the "Value of the Diagnostic Clinic to a Community."

Cook County Staff Appoints.—The following appointments are announced to the attending staff of the Cook County Hospital as a result of the competitive examination given by the Cook County Civil Service Commission: Diseases of children, Drs. Julius H. Hess, M. L. Blatt, Stanley Gibson, Walter F. Winholt, August Strauch and May Michael; laryngology, Dr. Samuel Salinger; ophthalmology, Drs. E. Findlay, G. F. Suker and C. G. Darling; gynecology, Drs. C. Culbertson, C. W. Barrett, H. Schmitz and W. J. Woolston; nervous and mental diseases, Drs. G. B. Hassin, L. J. Pollock, S. Krumholz and I. L. Meyers; obstetrics, Drs. D. S. Hillis, F. H. Falls, H. F. Lewis and W. G. Lee; pathology, Drs. H. G. Wells, E. R. LeCount, D. J. Davis and J. P. Simonds; skin and venereal diseases, Drs. J. S. Eisenstaedt, E. J. Zeisler, E. A. Oliver and A. W. Stillians; surgery, Drs. D. C. Straus, R. T. Vaughan, D. N. Eisendrath, V. C. David, R. W. McNealy, P. Oliver, K. Speed, H. Jackson, K. A. Meyer, W. R. Cubbins, G. L. Davenport, F. G. Dyas, F. A. Besley, G. G. Davis, H. McKenna, H. M. Richter.

INDIANA

Smallpox.—During the first twenty-four days of the year, 133 new cases of smallpox were reported to the Evansville board of health.—The state board of health is supporting the local health board of Evansville in its action taken in excluding from school those children who have not been vaccinated against smallpox.

Personal.—Dr. Lewis R. Thompson, Lafayette, who recently accepted a position in the Public Health Service in the Philippine Islands, has been selected to establish and superintend the new marine hospital in Manila.—Dr. Carleton B. McCulloch, Indianapolis, has announced his candidacy for the democratic nomination for governor.

Admits Illegal Practice.—A. W. Van Bysterweld, Warsaw, appeared in Circuit Court, January 19, and pleaded guilty to the charge of illegal practice of medicine and was fined \$25 and costs, and released on his promise to leave the state. He contended that he was not a physician but a chemist. It is said that he has been convicted on several occasions on similar charges.

Health Board Operates at Loss.—The Indianapolis board of health operated during 1919 with a deficit of approximately \$75,000, or \$3,000 greater than the deficit in 1918. This deficit was due principally to increased salaries and cost of supplies. During the year the hospital handled more than

10,000 patients. The appropriation available to the health board during 1920 is about \$327,000, and the budget will be revised in an endeavor to keep the expenditure within the appropriation.

War Service Gives Credits.—The treasurer of the Indiana State Board of Medical Registration and Examination announced, January 23, that hereafter service in the medical department of the Army, Navy or Marine Corps may be accepted as time credits for the examination to practice medicine in the state. The first examination under the new ruling will be held at the state house, Indianapolis, February 10, 11 and 12.

Influenza.—The city of South Bend has appropriated \$1,000 for use of the Visiting Nurses Association in combating influenza. The crest of the epidemic seems to have passed, as less than 100 new cases were reported, January 27.—Mishawaka is said to have had seventeen deaths due to influenza since January 1.—The total number of cases of influenza in South Bend is reported to have been about 2,100, with forty-seven deaths from influenza and pneumonia.—The city council of Fort Wayne, January 23, appropriated \$10,000 to be used in the fight against influenza.

New Health Divisions.—Plans for the working of the two new divisions of the state board of health include the holding in each congressional district of public meetings at which the work of the divisions will be discussed. The tuberculosis division will have a director, assistant to the director, and two nurses, who will hold meetings throughout the state aiming at prevention rather than care and cure of patients suffering from the disease. The infant hygiene division will be similarly organized and will hold similar meetings; it will deal only with children of 5 years of age or younger, and will endeavor to encourage knowledge of prenatal hygiene.

MASSACHUSETTS

Home for Incurables.—The Northwestern Deaconess Association has assumed control of the Cullis Home in Roxbury and will conduct the institution exclusively for the care of persons afflicted with cancer and other incurable diseases. The institution will be known hereafter as the Palmer Home.

Out-Patient Medical Society.—At the first clinical meeting of the Out-Patient Medical Society of Massachusetts General Hospital, Boston, held January 22, Dr. Paul D. White discussed "Practical and Modern Teaching of Heart Disease," and Dr. Richard H. Miller spoke on "Errors and Shortcomings in Diagnosis."

Campaign Against Cancer.—In the campaign against cancer free diagnosis of pathologic specimens is offered to the profession of the state by Harvard Commission for Cancer Research through the commissioner of health. Pathologic specimens should be sent to the director of the state diagnosis service, Cancer Commission, Medical School of Harvard University, Boston.

Tuberculosis League.—The Massachusetts Tuberculosis League is reorganizing to carry through a more intensive campaign for the prevention of tuberculosis. This is in accordance with the plans of the National Tuberculosis Association, which is planning to raise more than \$7,000,000 throughout the country for financing the greatest drive for health education undertaken in the world's history.

Personal.—Dr. William R. P. Emerson, Boston, lectured on child nutrition in eight schools in Chicago and at the Art Institute in that city on January 22, 23 and 24.—Dr. Sylvester E. Ryan, Springfield, has been nominated by the governor as a member of the state public health council, succeeding Dr. William J. Gallivan, Boston, resigned to accept the position of director of the tuberculosis sanatoriums of the state.—Dr. Richard C. Cabot, Boston, has been appointed professor of social ethics in Harvard University.

Free Medical Lectures.—The annual course of free public lectures given at the Harvard Medical School, Longwood Avenue, at 4 p. m., on Sunday afternoons was inaugurated, February 1. The following is the schedule of lectures:

- Feb. 1—Dr. Richard M. Smith, Boston. Child welfare.
- 8—Edwin H. Place, Boston. Smallpox and vaccination.
- 15—Dr. Harold C. Ernst, Boston. Protection against infection in diseases other than smallpox.
- 22—Dr. Kurt H. Thoma. Diseases of the teeth in relation to systemic disturbances.
- 29—Dr. Frederick T. Lord, Boston. Pneumonia.
- Mar. 7—Dr. Percy G. Sales, Boston. Some aspects of alcohol.
- 14—Dr. W. T. Boyle. New conceptions of the structure of matter.
- 21—Dr. Cecil K. Drinker, Cambridge. Health and industry.
- 28—Dr. Channing Frothingham, Boston. Some points of interest to the public in regard to medical education as brought out by the recent war.

Plainfield Health Clinic.—A few years ago a summer resident of Plainfield conceived the idea that an annual lecture and demonstration on some health topic by a representative of the state department of health would assist in teaching certain fundamentals necessary to personal and community health. This plan has developed into a midsummer health clinic to which children, no age limit, may be brought for physical examination and for advice. Troublesome temporary teeth are extracted, children are vaccinated on request of a parent, mothers are instructed in the proper care and feeding of infants and growing children and concerning the correction of physical defects. Following the clinic session, those children requiring further examination and treatment are transported to a hospital for necessary special advice and treatment.

MARYLAND

Election.—At the regular meeting of the Baltimore County Medical Association, January 21, the following officers were elected: president, Dr. John W. Harrison, Middle River, and secretary, Dr. George S. M. Kieffer, Morrell Park.

Personal.—Dr. William H. H. Campbell, Owings Mills, was injured recently by falling on the ice.—Dr. John M. T. Finney, Baltimore, has declined the offer made him by Harvard University and will continue his connection with the Johns Hopkins Hospital and Medical School.

Typhoid Rate Low.—Despite the fact that conditions in the new annex of Baltimore city are more favorable to the spread of typhoid fever than in the older part of the city, Baltimore during the year just passed, had the lowest death rate from typhoid fever in its history. There were sixty deaths during the year from this disease, and of these fifty were among white persons and the remainder among negroes.

Eudowood Sanatorium to Expand.—Extensive improvements will be made during the present year to Eudowood Sanatorium, Towson, according to reports of the officers submitted at the annual meeting of directors in Baltimore, January 26. The greatest need is a nurses' home, which the woman's board will erect at a cost of from \$25,000 to \$30,000. Plans also will be considered for additional private rooms to the Victor G. Bloede Hospital, for an additional medical building, supplied with roentgen-ray laboratory, dental equipment and a medical library, for an additional infirmary and other improvements. Work on these will be begun as soon as weather permits. Dr. Henry Barton Jacobs, Baltimore, president of the board of directors, told of the excellent work accomplished since the institution was established, and emphasized the need for more beds for advanced cases.

Influenza on Increase.—During the week ending January 31, influenza has increased rapidly in Baltimore. January 30 the greatest number of new cases developed, 452 being reported for a period of twenty-four hours, making 1,386 cases reported to the city health department since the beginning of the present outbreak. The cases are well scattered, virtually every section of the city being affected. The severe symptoms of the outbreak of 1918 are absent, the death rate continues low, and many of the cases reported as influenza are nothing more than "ordinary colds." Pneumonia also continues on the increase, the new cases reported in one day being lobar pneumonia, twenty-three; bronchopneumonia, twenty-one; with eight deaths from lobar pneumonia and one from bronchopneumonia.—The state board of health received reports of 516 new cases in the counties for a period of twenty-four hours on the same date. Montgomery County took the lead reporting 324 cases; Prince George's County had 153, and Frederick County, eighty-three cases.—From Camp Meade came reports of 122 cases. Camp officers reported fourteen new cases for the day. Twelve cases have been reported from Fort McHenry Hospital. A small epidemic of influenza has broken out at Edgewood Arsenal, the disease having been brought to the reservation by chemical warfare troops.

MISSISSIPPI

Physician Found Guilty.—In the case of Dr. Fletcher E. Lee, Petal, charged with manslaughter as the result of performing a criminal operation, the jury is reported to have brought in a verdict of guilty, January 27.

New Officers.—At the annual meeting of the Lauderdale County Medical Association held at Meridian, January 10, Dr. Julian T. Bailey, Meridian, was elected president; Dr. Thomas G. Cleveland, Meridian, vice president, and Dr. Hiram C. Sheffield, Meridian, secretary.

Work of State Laboratory.—In the annual report of the work of the state hygienic laboratory for the biennium ended June 30, 1919, it is shown that 30,707 specimens were examined, thirty-eight patients who had been bitten by rabid dogs were treated free of charge, and 101,243 c.c. of anti-typhoid vaccine were distributed to the people of the state.

Need of Home for Feeble-minded.—The Mississippi Society for Mental Hygiene in a recent bulletin urges the need of an institution for the feeble-minded, as an economic proposition to save lives and property destroyed by feeble-minded when allowed to be at large. The hospital mental efficiency bill to be considered by the next legislature establishes a Mississippi school and colony for the feeble-minded and provides a plan for a chancery court to commit feeble-minded individuals to this institution. The bill carries an appropriation of \$200,000.—In two orphanages in Mississippi with a population of 2,080, forty-one children were found so defective mentally that they could never be made self-supporting citizens.

NEW YORK

Influenza.—Madison Barracks at Sacketts Harbor has been quarantined against influenza. The measure is precautionary, as only one case of the disease has thus far developed.—Influenza has broken out among the inmates of Sing Sing prison, and so many are ill that the prison schoolrooms have been turned into an auxiliary hospital to care for the patients. The prison is in need of nurses and special facilities.

New York City

Fire in Hospital.—A fire recently occurred in the administrative part of the Lenox Hill Hospital, but was promptly controlled. The loss is estimated at \$5,000.

Influenza on Liner.—The Cunard Line S. S. *Kaiserin Auguste Victoria*, sailing from New York, January 17, arrived in Plymouth, England, with sixty cases of influenza aboard and reported one death from the disease during the passage.

Red Cross Starts Health Service.—The New York County chapter of the American Red Cross has organized within the chapter a new department of health service the object of which is to strengthen existing public health agencies. George R. Bedinger is acting director of the new department.

Personal.—Dr. Jacques Loeb of the Rockefeller Institute for Medical Research has been elected president of the American Society of Naturalists.—Dr. Abraham Jablons has been appointed medical inspector in the bureau of hygiene of the department of health.—Dr. James MacFarlane Winfield, for many years professor of dermatology in the Long Island College Hospital, has resigned.—Dr. Rudolph Matas, professor of general and clinical surgery at Tulane University, New Orleans, was elected an honorary member of the New York Academy of Medicine at the annual meeting, January 15.—Dr. Sigmund Pollitzer has been elected a corresponding member of the French Society for Dermatology and Syphilis.—Dr. William Golden Mortimer has been elected director of the ophthalmologic department of the new throat, nose and lung hospital, and designated special surgeon to the throat, nose and ear department.

The Influenza Epidemic.—January 30, the health department reported 5,532 new cases of influenza and 831 cases of pneumonia, an increase of 831 cases of influenza and a slight increase in the number of cases of pneumonia over the preceding day. From the onset of the epidemic there have been recorded 30,000 cases of influenza and 6,031 cases of pneumonia, with 545 deaths from influenza and 1,696 from pneumonia. It is believed that the epidemic has not yet reached the peak. The disease is, however, manifestly milder than in 1918. To meet the acute shortage of nurses, the health department is opening an emergency training school for nurses at 505 Pearl Street, where no charge will be made for the training. The police department, cooperating with the sanitary squad of the health department, has placed officers in the elevated and subway stations to serve summonses on those who spit or carry lighted cigars in forbidden places.

Death Rate for 1919.—The death rate of New York City last year reached the lowest level ever recorded since the establishment of accurate vital statistics fifty years ago. The rate for the year was 12.39 per thousand as compared to 16.71 in 1918, and 13.94 for the five year period 1913 to 1917, inclusive. Generally speaking, where two persons died fifty years ago out of every thousand population, only one

died during 1919. This tremendous reduction in the death rate is the direct result of preventive measures on the part of the sanitary officials. The diseases in which the rate was lowered were typhoid, malaria, smallpox, measles, scarlet fever, whooping cough, diphtheria, tuberculosis and diarrheal diseases of children. The lowest annual infant mortality rate recorded in the history of the city of New York was in 1917, when the rate was 88.8 per thousand children born. The second lowest rate was in 1918, when, with a birth registration of 138,046, there were 12,657 infant deaths and an infant mortality rate of 91.7 per thousand children born. For the first forty-five weeks of 1919, the infant mortality rate, based on a thousand births, was 86 as against 91 for the corresponding period in 1918, and 89 in 1917.

NORTH CAROLINA

New Officers.—At the annual meeting of the Wake County Medical Society held in Raleigh, January 8, Dr. Clarence A. Shore, Raleigh, was elected president; Dr. James M. Harper, vice president, and Dr. William C. Horton, Raleigh, secretary-treasurer.

Hospital Items.—The North Carolina General Hospital has been incorporated and has let the contract for a \$40,000 five-story building to be located at Wilson.—The new Carpenter-Davis Hospital, Statesville, was opened, January 9, by Drs. Forest A. Carpenter and James W. Davis, Statesville.

County Health Work.—At present twenty-two counties, which include 38 per cent. of the population of the state, have provided for whole-time health officers. Of these fourteen have county health departments conducted in cooperation with the state board of health, and in addition to these, Bertie, Vance, Beaufort, Union and Harnett counties have made appropriations and asked for cooperation from the state board of health. There are also eight counties with whole-time health officers or health departments conducted independently and without cooperation or coordination with the state board of health.

OHIO

County Health Board Activities.—Seventeen of the eighty-eight counties of the state have already filed health budgets with the state department of health. Eight of these districts have reported the appointment of health commissioners and have the new health machinery in operation under the Griswold laws.

Hospital Items.—The erection of a new state hospital for the insane to be located on a farm of 1,000 acres in northeast Ohio, and the sale of the present Cleveland State Hospital, have been recommended by the state board of administration to the governor.—Bids for the erection of a municipal hospital in Youngstown have been received by the municipal hospital commission.

Personal.—Dr. Roy L. Pierce, Mount Gilead, has been selected health commissioner of Morrow County.—Dr. Fred W. Upson, Conneaut, was operated on for intestinal obstruction at Mount Sinai Hospital, Cleveland, January 17.—Dr. John A. Burnett, Hamilton, has been appointed physician for the public schools of Hamilton.—Dr. J. Milton O'Neal, New Concord, has been elected health commissioner for Muskingum County.

Summer Course in Medicine.—The school of medicine of Western Reserve University has announced that it will institute for graduates a summer course in medicine. A two months' course will be given in medicine and surgery. The facilities of the medical school, of Lakeside, St. Vincent's, City and Mount Sinai hospitals will be utilized, the latter by special arrangement. The courses have been planned to occupy all of the time of those in attendance, and will be largely clinical in character.

Emerson Addresses Academy.—Dr. Haven Emerson, New York City, who is conducting a survey of hospital facilities in Cleveland for the hospital council, delivered an address at the meeting of the Cleveland Academy of Medicine, January 16, on "The Cleveland Hospital and Health Survey—Its Object and Scope." The report of the special committee recommending the employment of a full-time executive secretary for the academy with an increase in the scope of activities of the organization was presented by Dr. George E. Follansbee, Cleveland.

Fighting Trachoma.—By recent action of the general assembly, the state department of health has been provided

with funds to support an extended campaign against trachoma. The work will be done in cooperation with the U. S. Public Health Service and local health authorities. The tentative program calls for a series of intensive campaigns in individual counties, rather than for a general effort in all sections at once. Clinics will be established, schoolchildren will be examined and treated if necessary and educational measures will be undertaken.

Cincinnati

List Goes to Minneapolis.—Dr. Walter E. List, assistant superintendent of the Cincinnati General Hospital resigned, December 22, to accept the superintendency of Minneapolis City hospitals. He left for his new position, January 15.

New Officers.—At the annual meeting of the Cincinnati Academy of Medicine, January 5, the following officers were elected: president, Dr. H. Kennon Dunham; vice presidents, Dr. Arthur L. Knight and Clement C. Fihe; secretary, Dr. Otto J. Seibert; treasurer, Dr. Alex G. Drury.

Provision for Medical Journal.—Provision for the establishment of a journal for the medical department of the University of Cincinnati was made by the will of Dr. Christian R. Holmes, which sets aside a fund of \$25,000 for this purpose, payable to the trustees of the university in annual instalments of \$5,000. If the publication of the journal is not commenced within a year of Dr. Holmes' death the bequest is void.

Fund for Medical Research.—As a permanent memorial of Dr. Christian R. Holmes, his friends have inaugurated plans to raise a fund of \$1,000,000 for medical research, the endowment to be known as the Christian R. Holmes Medical Research Fund.—The Carnegie Corporation has made a gift of \$250,000 to the medical college of the University of Cincinnati, as a tribute to Dr. Holmes' services to humanity and to endow a chair in his memory.

PENNSYLVANIA

Personal.—Dr. Robert B. Mackey, Waverly, has been commissioned major, M. C., Pa. N. G., and assigned to duty with the Thirteenth Infantry.—The commission of Capt. Robert F. Trainer, M. C., Pa. N. G., Williamsport, expired, Dec. 19, 1919.

Public Health Nurses Organize.—At a meeting of the public health nurses at the state dispensary, Williamsport, January 5, organization was effected of the Public Health Nursing Association, whose membership includes the state nurses located in the city, the nurses from the various industrial plants, the school nurses and others.

Influenza in the State.—Director Charles W. Sheldon, Tioga, district supervisor and medical director of the state department of health, reports a total of 1,500 cases in Williamsport and outlying districts. The death rate has been small, but an appeal for nurses has been sent to Harrisburg.—In Scranton, thirty cases of influenza and one death were reported, January 29.—More than sixty cases of influenza, with several deaths, have been reported at York.

Society Meeting.—The ninety-fifth annual meeting of the Franklin County Medical Society was held in Chambersburg, January 20, and the following officers were elected: president, Dr. Joseph P. Maclay, Chambersburg; vice presidents, Drs. Samuel B. Thomas, Waynesboro, and William E. Holland, Fayetteville; secretary, Dr. John J. Coffman, Scotland (reelected); assistant secretary, Dr. Samuel D. Shull, Chambersburg, and treasurer, Dr. Frank N. Emmert, Chambersburg.

Philadelphia

Personal.—Dr. J. Blair Spencer, lieutenant in the naval reserve force during the war, has been appointed chief physician in the bureau of charities and correction in the department of welfare.—Dr. Henry N. Speer has been commissioned first lieutenant, M. C., Pennsylvania Reserve Militia, and assigned to duty with the First Infantry.

Health Clown Lectures.—Cho-Cho, the health clown who entertained Philadelphia schoolchildren several months ago with health talks, gave four lectures in the city, January 28 and 29, under the auspices of the Woman's Medical College of Pennsylvania. These were arranged to give the students and nurses an opportunity to study his methods.

Influenza.—While there is no fear of a grip epidemic, every precaution is being taken. One hundred and six new cases of mild influenza were reported, January 29. Since

the beginning of the year there have been only twenty-three deaths from pneumonia. Of the forty patients at the Philadelphia Hospital, many were discharged as convalescents, January 29, and only four new cases brought in. Of the deaths since the first of the year, two occurred during the week ending January 2; two in the week ending January 9; five in the week ending January 16; three in the week ending January 23, and eleven in the week ending January 30. There has been a slight drop in the number of daily cases reported.

RHODE ISLAND

Health Officer Reelected.—Dr. Charles V. Chapin, who has served the city of Providence for thirty-six years has been reelected superintendent of health for a three-year term.

New Officers.—At the annual meeting of the Kent County Medical Society, December 4, Dr. Frank B. Smith, Washington, was elected president and treasurer; Dr. Benjamin F. Tefft, Jr., Anthony, vice president, and Dr. J. Fulgence Archambault, Arctic, secretary.

Society Honors Associate.—The Kent County Medical Society gave a reception and banquet, December 4, in honor of Lieut. Philip C. Means, Apponaug, who recently was discharged from the military service, and is about to move to California. Dr. H. Barton Bryer, Natick, presided as toastmaster.

Physician Surrenders for Jail Term.—Dr. Frederick O. Balcom, Providence, convicted in the United States District Court in November, 1918, of violation of the espionage act, surrendered, December 2, to the United States marshal and was taken to the Providence County Jail to serve a sentence of one year. It is said the violation consisted in speaking privately against the sale of Liberty Bonds and the enforcement of the draft act.

Low Death Rate.—Figures recently published show that the death rate in Providence in 1919 was 13.22 per thousand. Notwithstanding the fact that there were in the early part of the year, 230 deaths from influenza and quite an excess from pneumonia, the death rate for the year was considerably lower than that of any year since registration began in 1856. Nearly every cause except diphtheria, cancer and Bright's disease showed a decrease. The death rate from pulmonary tuberculosis was the lowest ever recorded and that for pneumonia the lowest since 1877. The deaths from summer diarrhea and other causes of infant mortality were far lower than ever before. Typhoid fever caused only nine deaths.

WISCONSIN

Personal.—Dr. Otto A. Fiedler, Sheboygan, has been reappointed a member of the state board of health.—Dr. John B. MacLaren, Appleton, has been appointed a member of the federal committee on sanitation of the Wisconsin Industrial Commission.

State Health Board Meeting.—At the annual meeting of the state board of health in Madison, January 20, the following officers were reelected: president, Dr. William F. Whyte, Madison; secretary and state health officer, Dr. Cornelius A. Harper, Madison; assistant secretary, L. W. Hutchcroft, Madison; and the appointment of Dr. Frank F. Bowman, Madison, as deputy state health officer for the Southern Wisconsin District was confirmed.

New Officers.—At the annual meeting of the Brown-Cewaunee County Medical Society held at Green Bay, January 7, Dr. William E. Fairfield was elected president, Dr. Henry P. Rhode, vice president, and Dr. Arthur J. McCarey, secretary-treasurer, all of Green Bay.—Milwaukee County Medical Society at its annual meeting, January 13, elected the following officers: president, Dr. Alfred W. Gray, Milwaukee; vice presidents, Drs. Wilbur L. LeCron, Milwaukee, and Charles A. Fidler; secretary, Dr. Oscar S. Lotz, Milwaukee, and treasurer, Dr. Joseph P. McMahon, Milwaukee.

Physician Not Fined.—Dr. Francis W. Starr, Stanley, who was chronicled in THE JOURNAL, January 3, as having been fined \$25 for having broken the rules of the state board of health regarding public funerals over remains of persons dying from contagious disease, writes that he was not fined; that an overzealous district health officer had him arrested on technicality; that he pleaded guilty and the court did not see fit to fine him; furthermore, that the court was so thoroughly convinced that the arrest was unwarranted that it did not impose court costs; that the district attorney asked

that no costs be assessed on his account, and finally that the county sheriff put in no claim for costs.

CANADA

Personal.—Dr. Frederick E. Watts, Toronto, has returned from overseas and resumed the practice of surgery.—Col. David W. McPherson, Toronto, commanding the Ontario Military Hospital, England, has returned to Toronto.

University News.—The county of Middlesex, in which is situated the city of London, is being asked by the Western University, London, Ont., for financial assistance. Somewhere between \$60,000 and \$80,000 is expected and will be applied to either the arts building or for dormitories.

Hospital News.—The city hospital governors of Hamilton and St. Catharines, Ont., will ask the Ontario government to increase their governmental grant from 7 cents a day for children and 30 cents a day for adults to 30 and 75 cents, respectively. It costs on an average \$2.87 a day per patient to run these hospitals.—Representatives of all hospitals in Ontario receiving government grants met in Toronto the past week, the object being to seek increased grants from municipalities and the government. They will endeavor to secure a sliding scale of grants which will go up or down as the cost of maintenance rises or falls.

GENERAL

New Academy Officers.—At the annual meeting of the Sioux Valley Eye and Ear Academy held in Sioux City, January 20, the following officers were elected: president, Dr. James E. Reeder, Sioux City, Iowa; vice president, Dr. Frank I. Putman, Sioux Falls, S. D., and secretary-treasurer, Dr. Lorenzo N. Grosvenor, Huron, S. D.

Mortality in 1918.—According to the mortality statistics of the census bureau for 1918, issued February 2, the death rate in the United States for that year was the highest on record, showing 1,471,367 deaths for the year, representing a rate of 18 per thousand population in the registration area with an estimated population of 81,868,104. Of the total deaths, 477,467, or more than 32 per cent., were due to influenza and pneumonia.

Red Cross Bureau of Disaster Preparedness.—This bureau was created by the American Red Cross for the purpose of mobilizing the resources of community, state and nation, for immediate relief in the event of disaster. The record of one disaster a month for every month of fourteen years makes preparedness an imperative need. A loose leaf disaster relief guide book is being issued, and plans have been outlined for instituting a vigorous campaign for disaster preparedness in every locality, so that when an emergency comes the Red Cross will be ready on the instant to meet the situation.

American Red Cross Special Reserve Fund.—At a meeting held Nov. 19, 1919, the executive committee of the American Red Cross voted to set apart from the securities donated to the Red Cross war fund a sum representing \$10,000,000 in market value of those securities on this date as a special reserve, subject to such reinvestment as may be determined by the executive committee from time to time, and the income from which shall be available for the general purposes of the Red Cross. The principal sum is to be maintained always up to the full amount of \$10,000,000, and it is not to be drawn on except to meet an emergency for which the other resources of the Red Cross at the time are inadequate.

Personal.—It is reported that Dr. William H. Kingston, Hogsburg, N. Y., and Joseph N. Meddill, Jaroso, Colo., who have been working with the American Red Cross in Siberia, were captured by bolsheviks, January 25.—Drs. George C. Shattuck, Boston, chief medical secretary and Thomas R. Brown, Baltimore, chief of medical information and medical publication of the League of Red Cross Societies, have gone to Geneva.—Dr. Edouard Rist, physician in chief of the department of tuberculosis at the Laennec Hospital, Paris, has been appointed chief of the division of tuberculosis of the League of Red Cross Societies.—Lieut.-Com. Joel T. Boone, M. C., U. S. Navy, has been assigned to duty as director of the bureau of naval affairs at headquarters of the American Red Cross.

Fraternity Election.—At the annual convention of the Phi Delta Epsilon fraternity which has twenty-five chapters among class "A" medical schools, held in Philadelphia, the following officers were elected: grand consul, Dr. Nathan

Blumberg, Philadelphia; deputy grand consul, Dr. David W. Kramer, Philadelphia; vice grand consuls, Drs. Leo. S. Schwartz, New York City, Frank M. Chesner, Philadelphia, Samuel Nadel, Boston, Jacob Greenberg, Baltimore, Louis Bothman, Chicago, and George Piness, Los Angeles; grand chancellor, Dr. Benjamin E. Spiegel, New York City; grand scribe, Dr. Monroe E. Greenberger, New York City; grand historian, Dr. Murray B. Gordon, New York City; grand marshall, Dr. August C. Schwenk, New York City, and editor, Dr. Aaron Brown, New York City.

Bequests and Donations.—The following bequests and donations have recently been announced:

Methodist Episcopal Hospital, Philadelphia, \$25,000, the income of which is to be used in the establishment and maintenance of five free beds by the will of Thomas Bradley.

Georgia Medical Society \$1,000 for the establishment of the William Mears Library Fund in memory of an ancestor who came from England to Savannah in 1735, by the will of Dr. J. Ewing Mears, Philadelphia.

Bryn Mawr, Pa., Hospital, \$50,000, by the will of Mrs. A. J. Cassatt, Home for Incurables, Philadelphia, \$10,000; Methodist Hospital, Philadelphia, \$5,000; Frankford, Pa., Hospital, \$500, by the will of Marian L. Eltit.

Episcopal Hospital, Philadelphia, \$1,000 by the will of Florence W. Holbrook.

Hospital for Crippled Children, Baltimore, \$1,000 by the will of Mrs. Joseph L. Johnston.

Reinstatement of War Risk Insurance.—Announcement is made by Director R. G. Chohmeley-Jones of the Bureau of War Risk Insurance that the provisions still apply for reinstatement of lapsed or canceled insurance, within eighteen months from date of discharge, on payment of only two months' premiums provided the insured is in as good health as at the date of discharge or expiration of the grace period, whichever is the later date, and so states in his application. The provision that discharged service men are permitted to reinstate at any time within three calendar months following the month of discharge by merely paying the two months' premiums, without making a formal application or a statement as to health is also still in force. The provisions for reinstatement do not protect a man until he actually reinstates. If he waits, he may not be in as good health as he was at the time of discharge and consequently may not be able to secure reinstatement.

Appropriation for National Research Council.—The Carnegie Corporation of New York has announced its purpose of giving \$5,000,000 for the use of the National Academy of Science, and the National Research Council. It is understood that a portion of the money will be used to erect in Washington a suitable home for the two beneficiary organizations, and that the remainder will be placed in the hands of the academy to be used as a permanent endowment for the council. The council was organized in 1916, as a measure of national preparedness and during the war its efforts were confined chiefly to assist the government in the solution of pressing war-time problems which involved scientific investigations. Since the war it has attempted to stimulate and promote scientific research in agriculture, medicine, industry and in every field of pure science. The council is based on forty of the great scientific and engineering societies of the country which elect delegates to its constituent divisions.

Appropriation to Public Health Service.—Congress has met the urgent need for additional hospital accommodation and equipment in the Public Health Service by appropriating \$4,000,000 available for immediate use. These funds will be used in hospitals occupied by war risk insurance patients. An additional \$500,000 is appropriated for expenditure at government hospitals located as follows:

Deming, New Mexico	\$20 000
Alexandria, La.	25,000
Houston, Texas	10,000
Perryville, Maryland	75,000
Greenville, S. C.	75,000
Cape May, N. J.	10,000
Hoboken, N. J.	10,000
Dansville, N. Y.	10,000
St. Louis, Mo.	5,000
New Haven, Conn.	25,000
West Roxbury, Mass.	50,000
Helena, Mont.	100,000
Boise, Idaho	75,000
East Norfolk, Mass.	10,000

The sum of \$15,000 is provided for the propagation and sale of viruses, toxins and analogous products. This same appropriation bill forbids the Public Health Service to use any of its funds for advertising in newspapers or magazines hereafter.

FOREIGN

New Year Honors.—The list of British new year honors includes the elevation of Sir Bertrand Dawson, physician-in-ordinary to the king and dean of the medical faculty of the University of London, to a peerage.

Defective Children in England.—The chief medical officer of the board of education reported that of 533,400 children outside of London physically examined in 1918, 259,000, or 48.5 per cent., were found to be defective.

Physicians in Egypt Raise Their Fees.—The *Presse médicale d'Egypte* is a fortnightly journal published at Cairo, now in its eleventh year. A recent issue states that the physicians of Cairo recently voted at a meeting, called by Dr. Comanchos Pacha, to advance the fees to twice that of the figure before the war. About sixty physicians attended, and the resolution stated that the time had come for physicians in Cairo to follow the example in this respect of their confrères in Alexandria and in Europe.

Italian Orthopedics Congress.—Our Italian exchanges mention that the X Congresso di Ortopedia was held recently at the Rizzoli Orthopedic Institute at Bologna, and great interest was aroused by Albee's description of his bone-grafting operation in Pott's disease, with demonstration. The main themes appointed for discussion were prostheses and treatment of pseudarthrosis, introduced by Dalla Vedova and Palagi. Prof. V. Putti presided at the meeting, and Francioni delivered an address on the morphologic evolution of the human organism during the first years of life.

Health Congress in Brussels.—The Royal Institute of Public Health announces that it will hold a congress in Brussels from May 20 to 24, inclusive, under the patronage of the king of the Belgians. The council has invited delegates from the British universities, municipal corporations, and other bodies interested in public health, and has taken steps through the British division of the American University Union in Europe to extend a like invitation to the universities, municipal corporations and public health associations of the United States.

Typhus Fever.—To aid in combating the serious outbreak of typhus fever in Esthonia, where 15,000 cases have been reported, Col. Edward J. Ryan of the American Red Cross has obtained the services of twenty physicians of the French health service for a period of two months.—Typhus fever is reported to be making increased ravages in eastern Galicia, where it is said there are more than 100,000 cases of the disease, with a mortality of about 10 per cent.—The Swedish consul at Reval reports that there are 4,600 cases of typhus fever among Russian soldiers at Narva, 3,500 cases at Wesenberg, and 2,000 cases at Ziegelkoppel.

Medical Congress in Palestine.—The *Nederlandsch Tijdschrift* relates that the first large conference of the Jewish physicians in Palestine was held recently at Jaffa. Out of the seventy Jewish physicians in the country, forty were in attendance. The medical problems of Palestine were the main topics for discussion. The meeting was presided over by Dr. Mase of Jerusalem, and Dr. Puchowsky delivered the opening address. A resolution was adopted urging the necessity for nationalization of the medical service, and a committee of five was appointed, including Drs. Beham, Goldberg and Norman, to collect data and outline plans. A greeting was sent by telegram to Dr. Max Nordau, who was elected an honorary member of the Palestine Medical Association.

Near East Relief.—The Near East Relief is a body incorporated by act of Congress to provide relief and to assist in the repatriation, rehabilitation and reestablishment of suffering and dependent people of the Near East and vicinity, to provide for the care of orphans and widows, and to promote the social, economic and industrial welfare of those who have been rendered destitute or dependent by the vicissitudes of war. At present 168 orphanages are being operated in Armenia by this organization, and there are more than 82,000 workers in the industrial establishment. About 500 workers are now in the field, including 26 physicians, 76 nurses, 7 mechanics, 15 industrial experts, 16 agriculturists, 197 relief workers, 19 teachers, 34 secretaries, 7 engineers and 45 army officers. The principal centers of activities are Aintab, Adana, Konia, Smyrna, Marsivan, and Samsun, in Asia Minor; Aleppo and Beirut in Syria; Jerusalem in Palestine; Bagdad and Moussoul in Mesopotamia; Erivan, Batum, Tiflis, Alexandropol and Baku in the Caucasus; Tabriz and Teheran in Persia, and Constantinople in Turkey.

Government Services

Disease Conditions in the Army

During the week ending January 23, influenza and pneumonia prevailed to some extent in nearly all the camps and stations in the United States. In most of the camps the epidemic had reached its peak and was beginning to decline. Among the American forces in Germany, influenza and measles continue to be reported, but there also the number of deaths from pneumonia shows a marked decrease. Conditions in the American forces in Siberia are reported excellent.

Increased Pay Under New Army Bill

Medical officers of the Army, Navy and Public Health Service are given a 10 per cent. annual increase in the Army-Navy Pay Bill which is being urged for passage in the Senate by Chairman Wadsworth of the Senate Committee on Military Affairs. The bill gives a 20 per cent. increase to members of the female Nurse Corps of the Army and Navy. The bill also contains a special provision whereby the federal government furnishes transportation for the wife, children and dependents of officers when ordered to make a permanent change of station. Heretofore it has always been the custom to furnish transportation to officers and enlisted men but not to their families.

Foreign Correspondence

LONDON

Jan. 10, 1920.

Notification of Epitheliomatous and Chrome Ulceration

A physician attending a patient whom he believes to be suffering from poisoning by lead, phosphorus, arsenic or mercury, or anthrax, or toxic jaundice, contracted in a factory or workshop, is already required to notify the case to the chief inspector of factories. An order has now been made extending the obligation to (a) epitheliomatous ulceration due to tar, pitch, bitumen, crude oil, paraffin, or any compound, duct or residue of these substances, and to (b) chrome ulceration, due to chromic acid or ammonium, sodium or potassium bichromate or any preparation of these substances, occurring in a factory or workshop. The following explanatory statement is added by the factory department of the Home Office (the department of the government which deals with home affairs):

Epitheliomatous Ulceration: In general ulceration of the skin, this term is used to define a raw surface forming on the skin, which in industrial employment is not infrequently set up by the substances handled. Under appropriate treatment, at no matter what age, such ulceration usually heals quickly and, should it recur, will again heal with rest and treatment. In the case of those handling the substances named, however, especially when over 35 years of age and having worked for about ten years or more in operations exposing them to dust or liquids, the ulceration may not heal, spread over the skin and extend downward. This form of ulceration occurs with relative frequency on the scrotum. It is then to be regarded as epitheliomatous and to be notified. The only treatment is operation, which should be performed as early as possible.

Chrome Ulceration: If chrome compounds and their preparations remain in contact with the broken skin (and sometimes, with a very sensitive skin, in the absence of an obvious broken surface), they give rise to either a general eczematous ulceration or a circumscribed ulcer known as a "chrome ulcer." Both these conditions when definitely ulcerative are reportable. Recurring attacks of epitheliomatous and of chrome ulceration should be reported when they appear in a dangerous place.

Conflict Between the Friendly Societies and the British Medical Association in Australia

A struggle has been going on for many years between the friendly societies of Victoria and the physicians. The conditions under which lodge physicians worked were considered unsatisfactory, particularly as to remuneration, which averaged

aged yearly per member (including wife and children) about \$3.25, and sometimes was as low as \$1.50. There was no income limit, and some of the richest men availed themselves of this low rate. To ameliorate these conditions, the profession organized until more than 90 per cent. became members of the Victoria branch of the British Medical Association. In December, 1913, a conference was held between the physicians and lodge representatives, and in July, 1914, another conference at which a subcommittee was chosen; but war broke out, and the matter was postponed. In March, 1917, the matter was revived, and various conferences were held without reaching any agreement. The lodge physicians, therefore, to the number of 98 per cent., tendered resignations taking effect from Jan. 31, 1918. During this year various efforts were made by the state government to effect a settlement on behalf of the Friendly Societies Association by proposals of arbitration. But the council of the British Medical Association contended that the rate to which they agreed—\$5 in the town and \$6.25 in the country—was a concession to the less remunerated classes, and that the physicians themselves were the only persons to decide what the concession should be and to whom it should be granted. Consequently the council refused all proposals to arbitrate, in spite of threats of the state parliament. The parliament appointed a royal commissioner to investigate the dispute. In his finding he granted virtually all that the physicians had asked. Both sides offered to accept this finding, but the council insisted that the medical institutes, which had been established since the resignations had been submitted in order to supply medical attendance, should be abolished. This the friendly societies refused on the grounds that it would be an interference with their legal rights to establish institutes and that their members are bound by legal agreement to support the institutes for three years. Thus a deadlock was reached. The medical attendance furnished by the institutes does not appear to be satisfactory to the societies. Nineteen have recently agreed to turn down the institutes and to accept only British Medical Association physicians for their medical officers. The societies have requested parliament to appoint whole-time state health officers to whose duties shall be added attendance on friendly society members. They have also resolved to send a representative to England to secure 100 physicians to act as medical officers with a tempting offer of \$5,000 a year, with extras for midwifery and surgery. The council has written to the *British Medical Journal* asking it to assist them in preventing an influx of physicians from England. The *Journal* has responded by an article to this effect.

PARIS

Dec. 31, 1919.

Personal

The Académie de médecine has recently reorganized its bureau. Following the usual custom, Professor Laveran, formerly vice president, has assumed the duties of president for the year 1920. Dr. L. G. Richelot, hospital surgeon and agrégé professor of the Faculté de médecine of Paris, was chosen vice president for the year 1920, and Dr. Achard, also of the Faculté de médecine of Paris, was elected secretary for the year.

Dr. F. Lejars, professor of clinical surgery of the Faculté de médecine of Paris, has been elected president of the Société de chirurgie for the year 1920.

The Next International Conference of the Red Cross

The International Committee of the Red Cross has settled on Sept. 1, 1920, as the date for opening the tenth international conference of the Red Cross, which will hold its meetings in Geneva. It is planned to have a ten day conference. Among the subjects that will be brought up for discussion are: the experience gained during the late war; the mutual relationship of the Red Cross societies, and the extended development of the Red Cross societies in their peace and war activities. An executive committee has been put in charge of the preparations for the conference.

The Antagonism Between Epinephrin and Quinin

Drs. A. Clerc and G. Pezzi recently communicated to the Académie des sciences the results of their researches, which go to prove that there is an antagonism between the action of quinin and that of epinephrin, but that nevertheless there is no absolute opposition in the different modes of action of the two substances. There is complete antagonism in the cells of the bulbar center of the pneumogastric nerve, for epinephrin stimulates and quinin paralyzes this nerve. There is also antagonism with respect to cardiac action, epinephrin

having a stimulating and accelerative effect and quinin acting as an inhibitor and depressant. There is even antagonism in regard to arterial pressure: epinephrin produces hypertension and quinin hypotension. But epinephrin causes hypertension by a cardiac and vascular action combined, whereas quinin produces hypotension by overcoming the vasoconstrictive action common to the two substances, although in a different degree.

Even allowing for the vasoconstrictive mode of action which is common to the two substances, the antagonism between them is nevertheless noteworthy. While epinephrin acts as a stimulant of the sympathetic nervous system, quinin must be accorded a sedative action, which makes possible new therapeutic applications.

The Reorganized Strasbourg Faculty of Medicine

In a previous letter (THE JOURNAL, Nov. 8, 1919, p. 1456), I gave some general information concerning the University of Strasbourg. I can now add a list of the names of those who have been appointed on the new medical faculty:

Professor of embryology, Dr. Ancel (of the Faculté de médecine of Nancy); professor of histology, Dr. Bouin (of the Faculté de médecine of Nancy); professor of pathologic anatomy, Dr. Masson (of the Institut Pasteur of Paris); professor of biophysics, Dr. G. Weiss (of the Faculté de médecine of Paris); professor of physiologic chemistry, Dr. Nicloux (of the Faculté de médecine of Paris); professor of pharmacology and experimental medicine, Dr. Ambard (of the Faculté de médecine of Paris); professor of clinical surgery, Dr. Sencert (of the Faculté de médecine of Nancy); professor of clinical dermatology, Dr. Pautrier; professor of neurology, Dr. Barré; professor of otorhinolaryngology, Dr. Baldenweck; professor of clinical ophthalmology, Dr. Duverger (of the Ecole de médecine of Limoges); professor of legal medicine, Dr. Chavigny (of the Ecole d'application de médecine et de pharmacie militaires du Val-de-Grâce); professor of anatomy, Dr. Forster (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of clinical medicine, Dr. L. Bard (of the Faculté de médecine of Geneva); professor of clinical medicine, Dr. Blum (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of clinical surgery, Dr. Stolz (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of clinical psychiatry, Dr. Pfersdorff (of the Faculté de médecine of Strasbourg); professor of gynecology and obstetrics, Dr. Schickele (formerly privat-docent of the Faculté de médecine of Strasbourg); professor of hygiene and bacteriology, Dr. Borrel (of the Institut Pasteur of Paris).

Apartments for Large Families

The municipal council of Paris has recently asked the administration to take up with the national government and with the Sociétés d'habitations à bon marché the question of according certain special privileges to families having more than four children; namely, the right of priority in the matter of securing low-priced apartments, and a reduction in rent in proportion to the number of children, it being understood that the national government, the department or the commune is to bear the burden of such reduction.

LIMA

Dec. 31, 1919.

Sanitary Victory

The yellow fever epidemic which began about the middle of this year, in the northern part of Peru, has just been officially declared as having come to an end. An active sanitary campaign directed at first by Mr. H. Hanson and afterward by Drs. Gastiaturú, Quirós and Almenara deserves the credit for its eradication. Some interesting studies have been made about *Leptospira icteroides*, which may throw new light on the etiology of this disease. Cultures of *Leptospira icteroides* have been made at the hygienic laboratory of Lima. The number of cases during the epidemic amounted to more than 200, with a mortality rate of 40 per cent.

Infant Welfare

There has been organized during this month the Sociedad protectora de la Infancia, under the presidency of Mr. Miguel Echenique, a well-known philanthropist, and Dr. Rodolfo Neuhaus, a pediatrician. In order to secure public support there was organized a "child and flower day" which produced several thousand soles (a sol is about half a dollar). This will be employed to install the association headquarters in addition to an office of public assistance for children.

People interested in this society can obtain further data from the secretary, Lima, Peru, Apartado 987.

University Changes

During the whole second semester of this year there has taken place a true university revolution caused by the desire of the students to introduce reforms in the methods of teaching. This conflict has become so serious in the School of Medicine that it was necessary to discontinue the classes during the present year with the natural loss to those coming up for examination. As a result of the support rendered by the government to the justified demands of the students there have been changes affecting about one third of the personnel. Among the new professors in the School of Medicine are included Drs. Anibal Corvetto, Edmundo Escomel, Constantino Carvallo, Jr., Carlos Monge, Carlos Morales Macedo, Enrique León García, and Carlos Enrique Paz Soldán. In addition, the students will be represented directly in the directing council of the university, having elected as their representatives Drs. Enrique Paz Soldán and José Antonio Encinas.

Important Visit

Active preparations are being made to welcome Dr. W. J. Mayo and his associates. The Society of Surgery and the Faculty of Medicine have appointed commissions to receive them and attend to their comfort. This visit will be very important from the standpoint of better scientific relations between North and South America.

LIÉGE

DEC. 15, 1919.

The Technic of Appendectomy

Referring to the various objections that can be made to the numerous incisions proposed for appendectomy, and especially to the Jalaguier and the Lennander incision, R. Danis described at the recent meeting of the Société belge de chirurgie certain recent modifications of the McBurney incision, with a view to securing more solid and less visible cicatrization, and, at the same time, more constantly direct access to the appendix, no matter what its position may be. He discussed in detail the question of the direction and the localization of the skin incision.

The end of the appendix is located on a line drawn from the right iliac spine to the left pubic spine, at a point about 3 cm. external to the former. An incision made at the level of this line gives regular access to the cecum. Whether the meso-appendix is long or short, the cecum can easily be made to appear in the wound, and the appendix will always be in the field if its position is normal (laterocecal or retrocecal), the base appearing first, at the moment the head of the cecum is drawn up through the wound.

The author made the following remarks in connection with the location of the incision: The vertical incision comes in contact with a great many nerve fibers, for example, the ends of the lower dorsal nerves, which are directed obliquely downward and inward, and thus produces a large area of anesthesia between the cicatrix and the median line, which lasts for several months and causes the patient great discomfort. The more obliquely the incision is made, the less extended the area of anesthesia becomes. Danis gave an illustration of the good effects of rotating the incision by referring to a cardboard, which, when held perpendicularly to the rays of light, casts a broad shadow, but as it is held less and less perpendicularly the shadow grows smaller and smaller until it becomes a mere line. The suppression of the anesthetic shadow, that is to say, the gradual decrease of the zone of anesthesia, is the indication for the direction of the incision. In short, the author advises a very oblique incision, inclined toward the horizontal, and located much lower than the McBurney incision.

The Treatment of Pleural Suppurations

At the same meeting of the Société belge de chirurgie, Janssen reported the good results that he had secured in cases of chronic pleural suppuration by pleurectomy, either with or without thoracotomy. He communicated seven interesting observations, and drew the conclusion that every pleural suppuration of from two to three months' standing requires an operation. Fistulous sequelae, he finds, relate back to various causes: (1) an osteitis of the ribs; (2) the persistence of pleural or pulmonary projectiles, or (3) a pus pouch formed by the pleura itself. In decortication of the lung, the author adopts the technic recommended by

Delorme. He has found it to give perfect end-results. Pulmonary function is restored to almost its normal value. Roentgenography is sometimes serviceable in order to determine before the operation the factors on which a good functional result may be based, namely, as to how far advanced the sclerosis of the lung is; what the thickness of the encapsulating membrane may be, and what the prospects are for an easy removal. The general principles that should guide the operator during the course of intervention are as follows: 1. Any adhesions that bind down the lung, and also the parietal layer of the pleura should be completely removed—a total pleurectomy. 2. Intervention should be by a route that will cause the least possible mutilation: resection of one or two ribs, the trap-door incision as recommended by Delorme. 3. Account should be taken as to whether the pulmonary sclerosis is too far advanced. If such is the case, in addition to the pleurectomy a more or less extended resection of the chest wall should be done. 4. At the end of the operation, the thoracic cavity should be closed by a tight suture, only one drain being left to assure irreversible drainage, that is to say, allowing fluids from within to pass out but preventing the entrance of air into the thoracic cavity. As for postoperative treatment, drainage should not be kept up longer than is necessary, and early active mobilization of the lung should be carried out, the patient being required to take breathing exercises on the second or third day after surgical intervention.

The Venereal Peril

As in all countries that took part in the war, the enormous increase in venereal disease is causing considerable anxiety in Belgium. On account of the spread of syphilis, more especially, the Société médico-chirurgicale du Brabant has addressed a communication to the department of hygiene with a view to realizing three desiderata: 1. An increase in the number of laboratories placed gratuitously at the disposal of the medical corps, for example, the location of a laboratory in each canton for the purpose of carrying on, in aid of physicians, such researches as should prove indispensable for the correct treatment of syphilis. The laboratories might later extend their field of activity so as to include gonorrhea, tuberculosis and all diseases caused by micro-organisms, and thus become valuable scientific centers accessible to all practicing physicians. In this way they would contribute much toward raising the standard of medical efficiency and would inure to the advantage of public health in general. 2. The appointment of syphilologists to be placed at the disposal of the physicians of each canton for such time as should be deemed necessary, with a view to having these specialists examine into and elucidate the difficult cases, in order that the local physicians might gain a thorough knowledge of modern therapeutics as applied to venereal disease. 3. The gratuitous distribution to physicians for the use of patients in straitened circumstances of all specific remedies needed for the treatment of venereal disease on the sole condition that twice a year they should send in a statistical report of the patients treated.

The society also passed a resolution to the effect that a law should be drafted prohibiting the publication in other than scientific journals of advertisements dealing with venereal diseases.

The Etiology of Arthritis

At the meeting of the Société belge de biologie, Cohen introduced an interesting communication on the subject of the pathogenic agent in arthritis. In the blood of a patient afflicted with a very severe type of arthritis to which he succumbed shortly afterward, he found, in 1916, a diplococcus resembling a gonococcus and a meningococcus but differentiating itself from these by the fact that it grew exclusively on a blood medium. In the complement-fixation test the blood serum of this patient was strongly positive for this microbe, and also for the gonococcus and certain meningococci. This microbe has not been found since in the latest researches bearing on the blood of rheumatic patients; but in twenty-eight cases of arthritis presenting no acute or recent gonococcal infection he found that the blood serum of twelve patients was strongly positive for this microbe, the gonococcus and certain meningococci.

Industrial Diseases Among Coal Miners

At a recent meeting of the Académie royale de médecine, Herman presented an important communication on the subject of an industrial disease that it has been decided to call "maladie du brai," or pitch disease. Among workmen engaged

in the manufacture of coal dust briquets, for which pitch is used as a binding material, certain cutaneous and ocular symptoms have been discovered that are sufficiently characteristic to give to the disease a definite industrial stamp. In such factories there is one place that is especially dangerous on account of the air being so heavily laden with dust. That is where the pitch is broken up, pulverized and mixed with the coal dust. In the room in which the malaxation of the "dough" takes place and where the briquets are molded and subsequent operations are performed, the workmen are not exposed to any danger, for here the work is done within closed vessels and with dampened material, so that the dust is thus kept down.

Prophylaxis of the affection must look toward the suppression of the dust, which can be accomplished only by substituting a machine method for the present hand method of breaking up the pitch and transporting it in wheelbarrows to the pulverizer. The best way would be to transfer the contents of the railway car to the mixer, raising as little dust as possible, from which point on the manufacture of coal dust products would be harmless. Keeping down the dust by means of fans and spraying does not seem practicable.

Until a radical solution is found, it behooves the individual workmen to take such precautions as they can: 1. Clothing should be worn that is tight fitting at the neck, the wrists and the ankles. Tight-fitting goggles might well be worn over the eyes, and protecting ointments might be used on the exposed portions of the body. 2. Daily shower baths and careful attention paid to the skin would help. 3. Workmen who have already been affected should be temporarily removed from the dust zone. 4. The work day, eight hours at the most, should be divided into two parts, with long enough time between to allow the workmen plenty of time to wash up thoroughly and get rested after their trying and wearisome toil.

Bayet, also, has been making a study of arsenical poisoning in coal miners. He finds that this is much more widespread than is commonly supposed. He has shown that this form of poisoning menaces and afflicts thousands of workmen that were not thought of as being exposed. This finding is all the more significant since the arsenic that is the cause of these accidents comes from a substance that is universally used—perhaps the most universally used of any substance in industrial labor—namely, coal. The workmen most exposed are those who handle tar and its derivatives, distillers of tar, tarrers of bolts and crossbars, workmen who manufacture tarred paper, lamp black, crayons and various composites; those who handle oils and greases, crude paraffin, asphalt and bitumen; those employed in coke furnaces and in gas plants, and, we may probably add, workmen engaged in the manufacture of anilin dyes. In this connection, we may take a retrospective look and recall the cancer found so frequently among the chimney sweeps in England when they used to climb down into the chimneys. This was a typical form of cancer, which in the light of present discoveries may be regarded as of arsenical origin. This special pathology of the coal industry, the symptoms of which were known although the etiology remained obscure (the coal poisoning of Manouvrier), may henceforth be classified among the industrial diseases against which we are thus forearmed. We owe it to the important studies of Bayet that this has been brought about.

These studies deserve to be brought to the attention of all those who are interested in social medicine. The difficulties that are encountered in every country when attempts are made to introduce prophylactic measures against epithelial cancer among workers in pitch are well known. In England, where, since 1910, the question has been carefully considered, the results obtained are still unsatisfactory, as may be seen by the increased incidence of epithelial cancer noted during the period from 1914 to 1918.

Marriages

GEORGE HERMAN ANDERSON, Seattle, to Miss Ruth Weisdorfer of Burlington, Kan., at Chicago, January 10.

PAUL WEGEFORTH, Coronado, Calif., to Mrs. Lillie Holbrook, at San Diego, Calif., January 19.

THURMAN GILLESPIE, Wheeling, W. Va., to Elizabeth Pyatt Bonsted of Philadelphia, December 24.

HARRY JULIUS ISAACS to Miss Edith Lippert, both of Chicago, recently.

Deaths

B. Holly Smith, Baltimore; College of Physicians and Surgeons, Baltimore, 1883; aged 61; a graduate of the Baltimore College of Dental Surgery in 1881; president of the Faculty and professor of oral surgery in the Baltimore College of Dental Surgery; chairman of the oral hygiene council of Maryland; chairman of the executive council of the National Association of Dental Faculties; once president of the Baltimore Dental Club; an extensive contributor to the literature of oral surgery; died, January 22, from heart disease.

Lewis White Callan ⊕ New York City; University of Pennsylvania, Philadelphia, 1901; aged 42; captain, M. C., U. S. Army, and in charge of the ophthalmic department of the base hospital at Fort McHenry, Md., and discharged, April 6, 1919; a member of the American Ophthalmological Society, and New York Academy of Medicine; ophthalmic surgeon to the New York Eye and Ear Infirmary, and St. Bartholomew's and Lying-In hospitals; died, January 21, from pneumonia.

John Donnington Bartlett ⊕ Major, M. R. C., U. S. Army, Grass Range, Mont., formerly of Galesburg, Ill.; Rush Medical College, 1905; aged 39; at one time health officer of Galesburg; who became of unsound mind while serving with the Expeditionary Forces in France; was brought home, placed under treatment at U. S. General Hospital No. 28, Fort Sheridan, Ill., and then committed to the Watertown State Hospital; committed suicide by strangulation, January 12.

Benjamin Pitcher Brodie ⊕ San Francisco; Michigan College of Medicine, Detroit, 1884; aged 60; for many years a surgeon of Detroit; physician to St. Mary's Hospital; attending surgeon to Harper Hospital and Consulting surgeon to the Woman's and Solvay hospitals; chief surgeon of the Grand Trunk system, and Detroit United and Detroit Shore Line railways; died in the Southern Pacific Station, San Francisco, January 23.

George Brown Beach, Scranton, Pa.; Jefferson Medical College, 1886; aged 54; a member of the Medical Society of the State of Pennsylvania; captain, M. R. C., U. S. Army, with service in France, where he obtained the Croix de Guerre, and a citation from the commanding general, and was discharged, June 2, 1919; died in the West Side Hospital, Scranton, December 31, from meningitis.

Albert Woelfel ⊕ Chicago; University of Leipzig, Germany, 1902; aged 48; for several years instructor in physiology, and for a time in charge of the physiological laboratory in the University of Chicago; managing director of the Physicians Radium Association of Chicago; died, January 31, from pneumonia following influenza.

Charles Shivers Heritage ⊕ Glassboro, N. J.; University of Pennsylvania, Philadelphia, 1893; aged 48; president of the Gloucester County Medical Society in 1917; a specialist in diseases of the eye, ear, nose and throat; president of the Glassboro Loan and Building Association; died, January 4, from nephritis.

Luella M. Schneck, Indianapolis; Medical College of Indiana, Indianapolis, 1895; aged 52; a member of the Indiana State Medical Association; for five years a member of the staff of the Fletcher Sanitarium, and physician to the Indiana Girls' School, Clermont; died, January 21, from heart disease.

Norris Cameron, Indiana, Pa.; Jefferson Medical College, 1880; aged 63; formerly local surgeon of the Pennsylvania system, at Pitcairn, Pa.; burgess of Pitcairn from 1894 to 1897, from 1910 to 1913; for several years director and president of the First National Bank of Pitcairn; died, January 11.

Leander Erastus Maddox, Montpelier, Ind.; University of Michigan, Ann Arbor, 1875; aged 68; for several years a druggist; president, cashier and director of the First National Bank of Montpelier; at one time a member of the local school board; died, January 15, from valvular heart disease.

Curtis Elmer Kelso ⊕ Lieut., M. R. C., U. S. Army, Thomasboro, Ill.; University of Illinois, Chicago, 1905; aged 38; on duty at Fort Oglethorpe, Ga.; died in the Post Hospital, Fort Oglethorpe, January 8, from narcotic poisoning.

Justin F. Simonds, Riverdale, Md.; Castleton (Vt.) Medical College, 1851; aged 93; a pioneer practitioner of Iowa; surgeon of United States Volunteers during the Civil War, and from 1902 to 1904 examiner in the United States Pension Bureau, Washington, D. C.; died, January 3.

Thomas Francis Conneen ⊕ Portland, Me.; Bowdoin Medical School, Brunswick and Portland, Me., 1901; aged 45; city physician of Portland in 1907, and then appointed medical examiner (coroner) of Cumberland County; died, about January 22, from cerebral hemorrhage.

Alexander H. Koerner, Woodsfield, Ohio; University of Maryland, Baltimore, 1886; aged 61; a member of the Ohio State Medical Association; president of the Monroe County Medical Society; died in the State Hospital, Columbus, Ohio, January 6, from septicemia.

Albert Earl McCallin ⊕ Wisconsin Veteran's Home, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1906; aged 53; head surgeon at the Wisconsin Veteran's Home; died from thrombosis, January 17, after operation for duodenal ulcer.

Estes Paine ⊕ Major, M. C., U. S. Army; University of Texas, Galveston, 1906; aged 39; formerly surgeon of the Norfolk and Western Railroad; at Bassetts, Va.; died in the Walter Reed General Hospital, Takoma Park, D. C., December 9.

Charles Milton Buchanan ⊕ Tulalip, Wash.; National University, Washington, D. C., 1890; aged 51; a physician in the United States Indian Service and a worker among the Puget Sound Indians for twenty-four years; died in Seattle, January 18.

Robert Samuel Bentley ⊕ Chicago; Northwestern University Medical School, Chicago, 1899; aged 44; a member of the Illinois State Medical Society; was shot and killed, January 27, by a patient, who claims that the shooting was accidental.

David S. McConnaughey, Wayland, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1867; aged 82; a veteran of the Civil War; president of the Henry County Medical Society in 1914; died, January 7, from senile debility.

Daniel Webster Hopkins, Havre de Grace, Md.; University of Maryland, Baltimore, 1877; aged 65; for several terms a member of the city council, and at the time of his death public health officer; died, January 16, from heart disease.

Charles Milton Lenhart, Zanesville, Ohio; Miami Medical College, Cincinnati, 1886; aged 56; a member of the Ohio State Medical Association; surgeon to the City and Good Samaritan hospitals, Zanesville; died, January 17.

Stanley Nelson Insley ⊕ Grayling, Mich.; Trinity Medical College, Toronto, 1894; aged 49; president of the county society; division surgeon for the Michigan Central Railroad; died, January 7, from pernicious anemia.

Michael Washington Hurst, Talmage, Pa.; University of Pennsylvania, Philadelphia, 1861; aged 81; a member of the Medical Society of the State of Pennsylvania; died in the General Hospital, Lancaster, Pa., January 13.

Adam E. Focht, Great Bend, Kan.; Hahnemann Medical College, Chicago, 1885; St. Louis College of Physicians and Surgeons, 1896; aged 60; a member of the Kansas Medical Society; died, January 8, from heart disease.

Isaac C. Smith, Peel Tree, W. Va.; Kentucky School of Medicine, Louisville, 1876; aged 67; a member of the West Virginia State Medical Association; died from heart disease, January 15, while making a professional call.

Miles Clinton Bristol ⊕ Bay City, Mich.; Long Island College Hospital, Brooklyn, 1894; aged 52; for two terms health officer of Bay City and coroner of Bay County; died, January 21, from carcinoma of the larynx.

John G. Koch, Petersville, Pa.; Jefferson Medical College, 1865; aged 77; a member of the Medical Society of the State of Pennsylvania; died, January 8, from the effects of a fracture of the hip two weeks before.

Benjamin W. Cabell, Hampton, Va.; College of Physicians and Surgeons, Baltimore, 1891; aged 55; a member of the Medical Society of Virginia; died in the Dixie Hospital, Hampton, January 13, from nephritis.

Thomas J. Harcourt, Somerville, Ohio; American Eclectic Medical College, Cincinnati, 1889; aged 82; for more than fifty years a practitioner of Tusculum, Cincinnati; a veteran of the Civil War; died, January 15.

Henry A. Minor, Macon, Miss.; University of Virginia, Charlottesville, 1857; aged 83; once president of the Missis-

⊕ Indicates "Fellow" of the American Medical Association.

Mississippi State Medical Association; died in an infirmary in Hattiesburg, Miss., January 19.

LeRoy J. Beebe, Yakima, Wash.; University Medical College of Kansas City, Mo., 1909; aged 38; house physician at St. Elizabeth's Hospital; died, December 29, four days after an operation for appendicitis.

Robert Pooler Myers, Claremont, Calif.; Savannah, Ga., Medical College, 1860; aged 80; a member of the Medical Society of Hawaii, and for several years a resident of Honolulu; died, January 1.

Agnes Mary Browne, Oakland, Calif.; College of Physicians and Surgeons, San Francisco, 1918; aged 46; died in St. Luke's Hospital, San Francisco, January 13, from myocarditis after a laparotomy.

Alonzo F. Kramps ♂ Chicago; Rush Medical College, 1895; aged 54; for many years a member of the staff of the St. Elizabeth's Hospital; died, January 30, from pneumonia following influenza.

John Austin Kane ♂ Brooklyn; Harvard University Medical School, 1902; aged 41; attending physician to the Angel Guardian Home; a specialist in pediatrics; died, January 23, from pneumonia.

Henry Hopson Wilcox, Montague, Mass.; Cornell University, New York City, 1906; aged 38; a member of the Massachusetts Medical Society; died in Des Moines, Iowa, December 23.

Andres Buckham MacLean, Centralia, Wash.; University of Toronto, 1906; aged 45; a member of the Washington State Medical Association; coroner of Lewis County; died, January 12.

Russel Ross Marble, Hastings, Neb.; University of Michigan, Ann Arbor, 1902; aged 48; died in the Mary Lanning Hospital, Lincoln, January 16, from pneumonia complicating diabetes.

William Pell Ballance, Los Angeles Harbor, Calif.; Washington University, Baltimore, 1873; aged 67; for several years a practitioner of Alaska; died, January 5, from heart disease.

Daniel Kuhn ♂ St. Louis; Washington University, St. Louis, 1865; aged 82; for more than half a century a practitioner of St. Louis; a specialist in pediatrics; died, January 14.

John Clark Patterson, Batavia, Ill.; Northwestern University Medical School, Chicago, 1872; aged 70; died in the Presbyterian Hospital, Chicago, January 11, from pneumonia.

William Cicero Sessoms, Brewton, Ga.; Atlanta (Ga.) Medical College, 1892; aged 53; died at the home of his father in Stedman, Ga., January 8, from cerebral hemorrhage.

Daniel W. Maxson, Galveston, Texas (license, Kansas, 1901); aged 82; for many years a practitioner of Toronto, Kan.; died, January 14, at the home of his son in Galveston.

Oliver Harrison Martin, De Pere, Wis.; Rush Medical College, 1874; aged 85; for more than thirty years a practitioner of Kewaunee, Wis.; also a druggist; died, January 8.

William H. Wagner, York, Pa.; Jefferson Medical College, 1881; aged 67; director of health during the smallpox epidemic in 1900; died, January 3, from aneurysm of the aorta.

Albert William Knott, Montrose, Colo.; Washington University, St. Louis, 1906; aged 43; a member of the Colorado State Medical Society; died, January 2, from tuberculosis.

George Henry Sanborn, Shawnee, Okla.; University of Vermont, Burlington, 1899; aged 46; a member of the Oklahoma State Medical Association; died, about January 7.

Henry William Morgan, Nashville, Tenn.; Vanderbilt University, Nashville, 1875; aged 66; formerly dean of the dental department of his alma mater; died, January 17.

James Ramsay Flood, Momence, Ill.; Jefferson Medical College, 1866; aged 81; for many years a practitioner of Chicago; died, January 9, from valvular heart disease.

Charlotta Yhlen Olsen, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1873; aged about 70; died in Pasadena, Calif., January 14, from heart disease.

Edward Morris Price, Brooklyn, L.R.C.P., London; L.R.C.S., England, and M.R.C.S., England, 1879; University of Brussels, Belgium, 1884; aged 62; died, January 13.

George Nelson Vail, Parker, Kan.; University of Michigan, Ann Arbor, 1869; aged 79; a member of the Kansas Medical Society; died, January 6, from cerebral hemorrhage.

George Harvey McMichael ♂ Buffalo; Niagara University, Buffalo, 1888; aged 63; a specialist in the treatment of alcoholism; died, January 18, from angina pectoris.

Edward L. Blanding, Chicago; Jenner Medical College, Chicago, 1906; aged 55; also a pharmacist; died in Lakeside Hospital, Chicago, January 25, from pneumonia.

John Whiten Merry, Mount Ayr, Ind.; University of Michigan, Ann Arbor, 1869; aged 76; died in the Jasper County Hospital, Rensselaer, Ind., January 1.

Joseph J. McKinney, Rifle, Colo.; St. Louis College of Physicians and Surgeons, 1909; aged 48; died in Pueblo, Colo., January 2, from pernicious anemia.

William S. Brabham, St. Louis; Meharry Medical College, Nashville, Tenn., 1898; aged 50; a colored practitioner; died, November 14, from cerebral hemorrhage.

Milton Hall Leonard, New Bedford, Mass.; University of the City of New York, 1879; aged 63; visiting physician to St. Luke's Hospital; died, January 14.

Josephus S. Graham ♂ Tuckerman, Ark.; Bellevue Hospital Medical College, 1889; aged 54; died in Hot Springs, Ark., January 16, from angina pectoris.

Arthur F. Schulz, Chicago; Dearborn Medical College, Chicago, 1907; aged 41; was found dead in a hotel in Milwaukee, February 1, from pneumonia.

Robert Kells Hackett ♂ Major, M. C., U. S. Army, Los Angeles; Tulane University, New Orleans, 1899; aged 49; died in San Francisco, January 1.

William A. Pease, Otsego, Wis.; (license, Wisconsin, 1899); aged 83; a member of the State Medical Society of Wisconsin; died, January 6.

Orlando S. Wood, Omaha; Hahnemann Medical College, Philadelphia, 1860; aged 87; died at the Home of Hope, Florence, Neb., January 10.

Bruce Frary Halsey, Medina, N. Y.; University of Louisville, Ky., 1901; aged 43; died, January 5, from pneumonia, at a sanatorium in Buffalo.

John Devin Kelly, New Haven; University of the City of New York, 1880; aged 73; died in Hamden, Conn., January 9, from angina pectoris.

John Joseph Walsh, Scranton, Pa.; Jefferson Medical College, 1886; aged 58; died, December 31, as the result of an automobile accident.

Willard Channing Brown ♂ Detroit; University of the City of New York, 1881; aged 62; died, October 18, from acute nephritis.

William P. Sydnor, Burgess Store, Va.; Washington University, Baltimore, 1874; aged 78; died, September 19, from senile debility.

Samuel Freeman ♂ Trenton, N. J.; University of Pennsylvania, Philadelphia, 1899; aged 43; died, January 13, from pneumonia.

John Henry Gifford ♂ Fall River, Mass.; Harvard University Medical School, 1884; aged 61; died, December 14, from myocarditis.

Henry K. Cunningham, La Plata, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1874; aged 84; died, January 7.

Thomas Walter Clarke, Philadelphia; Hahnemann Medical College, Philadelphia, 1896; aged 46; died, January 8, from nephritis.

Alfred Hall Perrie ♂ McKendree, Md.; Baltimore Medical College, 1895; aged 48; died, January 14, from heart disease.

Steven H. Hurst, Laconia, Ind.; University of Louisville, Ky., 1889; aged 63; died, January 13, from heart disease.

William Clarence Benjamin ♂ Hornell, N. Y.; University of the City of New York; 1887; aged 60; died, January 9.

William Lawton Evers, New York City; Bellevue Hospital Medical College, 1892; aged 74; died, January 17.

George Augustus Sigler, Indianapolis; Bellevue Hospital Medical College, 1879; aged 73; died, January 18.

Pasquale Monaco, Chicago; University of Naples, Italy, 1910; aged 59; died, January 22, from influenza.

Orson Hyde Crandall, Quincy, Ill.; Eclectic Medical Institute, Cincinnati, 1867; aged 93; died, January 17.

Lamont H. Ross, Lewisburg, Pa.; University of Buffalo, N. Y., 1892; aged 53; died, January 9.

John Hood, Baltimore; University of Michigan, Ann Arbor, 1858; aged 81; died, December 26.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

GRALE'S FRUIT LAXATIVE

"Grale's Fruit Laxative" put out by the Grale Packing Co., Roselle, N. J., is advertised under the claim that it contains no drugs:

"Grale's Fruit Laxative contains only figs, dates, raisins and prunes, a few simple herbs and bran. NO DRUGS AT ALL."
". . . this is a food—not a drug. . . ."

The preparation was submitted to the A. M. A. Chemical Laboratory for the purpose of determining whether or not the claim that the stuff contained no drugs was justifiable. The laboratory report follows:

"Grale's Fruit Laxative" is a soft, brown solid with an odor and taste suggestive of figs and prunes. Chemical examination indicated the presence of an emodin-bearing drug, or its extractives, in considerable amounts. This was shown by further tests to be neither aloes, cascara nor rhubarb. Microscopic examination revealed the presence of ground senna in the mass. Since senna is a well known drug of recognized therapeutic activity, the declaration on the label of Grale's Fruit Laxative that the preparation contains no drugs is false.



DIONOL—THE GLORIFIED PETROLATUM

An Indiana physician sends us in a batch of leaflets detailing the marvels of "Dionol" and thus comments:

"I received the enclosed in the mail today and I am puzzled, perplexed and astounded. I had formed the opinion that the profession was getting better; that it was more scholarly than formerly when the two course school was still in existence and any one could matriculate; that it was no longer possible for a 'patent medicine' manufacturer to palm off his wares on us. After reading this stuff and realizing that such methods must be remunerative, I am deeply humiliated. Is it possible that educated physicians respond to this kind of advertising? Or has some one perpetrated a joke on me? If the profession can be thus successfully exploited one can no longer wonder at the following which every new 'ic' and 'ism' acquires."

It is a pity that the medical profession generally does not react to the Dionol and similar advertising as does our correspondent. As the concern continues to do business, the presumption is that at least some physicians are using Dionol. As was pointed out in THE JOURNAL of Jan. 26, 1918, Dionol seems to be a glorified and esoteric form of petrolatum. The exploitation of Dionol is based on the following theory: (1) The brain is a generator of neuro-electricity, (2) the nerves are the conductors of this electricity, (3) the nerve sheaths are the insulators, (4) wherever there is local inflammation the nerves are short circuited, due to a breaking down of the insulation resistance of the nerve sheaths, (5) this results in "an escape of neuro-electricity," (6) Dionol coats the nerve sheaths with a nonconducting layer and this restores the insulation and "stops the leak."

Whether this ingenious theory was invented to lend an air of verisimilitude to an otherwise bald and unconvincing tale and give a "reason for being" for Dionol or whether Dionol was first invented and it became necessary to evolve a theory that would give some plausibility to the claims made for this

etherealized petrolatum, we are unable to say. In any case the theory and the product are exploited together.

Among the material sent in by a correspondent are some "Dionol Case Reports." Neither the names nor the addresses of the physicians making these reports are given, but the company states that they may be had "on request." One special "report" is featured under the heading "Infected Wound. Striking Results After United States and French Government Army Surgeons Failed" is signed "Dr. W." It is dated July 19, 1919. A few months ago the Dionol Company was sending out this same testimonial with the full name and address of the "doctor" giving it. Investigation showed that the "doctor" in question was an osteopath whose specialties, according to his advertisement in his local newspaper are "Catarrhal Deafness and Hay Fever, Acute and Chronic Diseases"! In this connection it is worth noting that investigation of some of the earlier testimonials sent out by the Dionol concern and alleged to have been given by "doctors" showed that the gentlemen in question were "drugless healers."

As a "true indication of the value which the medical profession is placing on Dionol" the Dionol Company has published the names of some physicians who, it is alleged, have used the preparation. Here, arranged geographically, are some of the "prominent physicians throughout the country" who are said to have had "remarkable success" with Dionol:

BALTIMORE, Md., Dr. O. N. Duvall.
BOSTON, Mass., Dr. A. H. Flower.
CHICAGO, Ill., Dr. Frank W. Klocke.
DETROIT, Mich., Dr. B. A. Bullock.
DETROIT, Mich., Dr. P. L. Lathrop.
DETROIT, Mich., Dr. C. G. Morris.
DETROIT, Mich., Dr. E. A. McCosh.
DURAND, Wis., Dr. R. G. Healy.
DRYDEN, N. Y., Dr. M. L. Briggs.
GOSHEN, Ind., Dr. R. L. Starkweather.
GRAND RAPIDS, Mich., Dr. L. R. McCready.
MINERAL WELLS, Texas, Dr. R. H. Lindley.
MOUNDVILLE, Mo., Dr. G. Schaff.
MUSCOGEE, Fla., Dr. A. J. Johnson.
OKLAHOMA CITY, Okla., Dr. G. S. Pettit.
PITTSBURG, Pa., Dr. H. J. Dorrance.
PITTSBURG, Pa., Dr. J. E. Johnston.
SEDAN, Kans., Dr. F. W. Wells.
SOUTH BEND, Ind., Dr. H. A. Fink.
SPRINGFIELD, Ill., Dr. Emery Ennis.
WILMAR, Minn., Dr. Oscar Zaher.

HYPNO-BROMIC COMPOUND

A physician in Vermont writes:

"This is simply a word of inquiry—and of possible warning to other practitioners—regarding a preparation known as Hypno-Bromic Compound manufactured by H. K. Wainpole & Co. This compound is dispensed by druggists without prescription and contains in each ounce:

"Cannabis indica	1	gr.
"Morphin	¼	gr.
"Potassium bromid	48	gr.
"Hyoscyamus	1	gr.
"Chloral hydrate	96	gr.

"I have at the present time three young women who are addicts to this preparation as the result of thoughtless prescriptions from physicians. This mixture evades the working of the Harrison Act and may be dispensed freely at the discretion of the druggist and, as a result, these three cases of mine have been able, by visiting the various drug stores in town, to keep an ample supply on hand at all times."

"Hypno-Bromic Compound" is more than an unscientific mixture; it is a dangerous product and should not be sold indiscriminately over the drug counter. Before the Harrison Narcotic Law went into effect, "Hypno-Bromic Compound" contained half a grain of morphin sulphate to the ounce instead of its present one-fourth grain. Physicians remember that Section 6 of the Harrison law contains a joker—put over by the "patent medicine" interests—that exempts proprietary remedies containing one-fourth of a grain of morphin or less to the ounce from the restrictions of that Act. While it is illegal for a physician to write a prescription which contains morphin, no matter how small the amount, unless he conforms in all ways to the requirements of the Harrison Narcotic Law, "patent medicine" concerns can sell indiscriminately nostrums containing morphin up to this amount and the public can buy them without let or hin-

rance. No reputable druggist would sell a layman over even hundred grains of chloral hydrate or two grains of morphin or eight grains of extract of cannabis indica, without a prescription, yet, the druggist may hand over 8 ounce bottles of Hypno-Bromic Compound which contain 768 grains of chloral hydrate, 2 grains of morphin sulphate, 8 grains of extract of cannabis indica, 8 grains of hyoscyamus and 384 grains of potassium bromid! Physicians who prescribe such products as Hypno-Bromic Compound and druggists who indiscriminately sell such stuff are disgracing two honorable professions.

Correspondence

RECOGNITION OF A GREAT MEDICAL CAREER

To the Editor:—In our country there are few formal means for recognizing in any public way the services of a great physician or a great teacher. In the older countries such services have been recognized by the bestowal of honors, or nobility or grants of money, or by other official means which call attention to the services rendered. In our country no recognition through official orders may be given, and we are glad to have it so, because, admirable as such prizes are when worthily bestowed, they become too often the playthings of political favor or of personal privilege.

In the case of Dr. Christian R. Holmes, whose death the medical profession deplores, action has been taken by the Carnegie Corporation of New York to give notable recognition of his services to the science of medicine and to medical education. Immediately after his death the Carnegie Corporation appropriated \$250,000 to the University of Cincinnati for the endowment of a chair of clinical medicine to bear forever the name of the Christian R. Holmes Chair of Medicine. The information concerning this action was conveyed to the University of Cincinnati in the following telegram signed by Hon. Elihu Root, chairman of the board:

The trustees of the Carnegie Corporation of New York at their meeting held this day have appropriated the sum of two hundred and fifty thousand dollars which they tender to the Medical Department of the University of Cincinnati to endow the chair of clinical medicine in honor of Christian R. Holmes and to bear his name. This action is in recognition of Dr. Holmes' great service to medical education.

Every man who is interested in the progress of the medical profession and who knows of the intelligence and devotion that Dr. Holmes gave to his work will feel a sense of satisfaction at this recognition. Philanthropists and endowed foundations that give money for the promotion of science and education generally attach to their gifts conditions which require the institution or individual to raise additional means. In this instance the Carnegie Corporation makes no conditions but tenders this money generously and heartily, to commemorate the service of a physician of Cincinnati to his city, to his state, and to the nation. It is a fine thing for a great foundation to make such a hearty and spontaneous tribute to the service of Dr. Holmes. In the opinion of the Corporation, he has rendered a notable service to medicine and to medical education. A dozen years ago, medical teaching in Cincinnati was in the same condition as in all our great cities; the work was carried on oftentimes unselfishly, sometimes from professional motives; but in the main, medical teaching was a by-product of medical practice. Dr. Holmes was a member of that group of American physicians and surgeons who helped to bring about a new conception of medical teaching and to lift our medical schools free from commercialism. Through his efforts and those of other men equally devoted, there is in Cincinnati a medical school, a part of a university, having high standards and scholarly outlook. There was built through Dr. Holmes' exertion one of the great public hospitals of the world, planned after a study of all the hospitals of Europe and America. This hospital, although a municipal hospital, is under the control of the University of Cincinnati College of Medicine, and politics has been completely eliminated from its management.

The medical school stands adjoining the hospital, and together they offer most admirable clinical opportunities for medical students. The University of Cincinnati College of Medicine promises to be one of the great medical schools of the world. To have wrought this work with such farsightedness, such scientific sincerity, and with such success as Dr. Holmes did, was to render a notable service to medicine and to medical teaching, and it is this service which the Carnegie Corporation desired to honor.

Other men in Cincinnati worked for the same ideals and contributed to the same purpose. Dr. Holmes would be the first to wish that they might receive full credit. His service would have been impossible without their support and cooperation, or without the consistent and able support of President Dabney of the University of Cincinnati. The Carnegie Corporation of New York forgets none of these things, but the trustees felt sure that every physician and every teacher who has wrought in the medical schools of Cincinnati will agree that there should be a special testimonial to him whose leadership and whose devotion have resulted in such fruitful results for his city and for his country.

HENRY S. PRITCHETT, New York.

President, Carnegie Foundation for the
Advancement of Teaching.

THE MEDICAL RESERVE OFFICER

To the Editor:—Referring to the interesting article by Dr. Louis J. Hirschman in THE JOURNAL, January 3:

Individual injustices regarding rank were inevitable in the rapid expansion of the Medical Corps to about fifty times its original number. Correction of errors was under way when the war ceased; but military machinery moves slowly, and deliberate action was necessary to avoid fresh errors.

So far as the limitation of medical rank to major and of line rank to colonel, the M. C. duties corresponding to higher rank are very different and require long military experience. A fairly adequate supply of experienced men was available in the regular establishment, and subordinate positions requiring mainly professional skill could be filled from civilian life. In the line, duties at least as far as colonel are a logical and fairly simple extension of those of lower ranks for which the regular army could not have provided without undue promotion of immature officers. An adequate supply was available among national guard officers of long experience, while civilian physicians who had had any kind of military experience fitting them, for example, to conduct a base hospital, were very few.

For raw material, trained at camps, the medical profession had a distinct advantage in rank compared with any other class. All entered at least as first lieutenants, while most line officers graduated as second lieutenants. Many of the former were captains and majors, while the few line officers who entered active duty as majors were instances of influence or native ability. So far as I can judge, even the rank on discharge at the end of war averaged higher for medical men than others, not even excluding national guardsmen of long antebellum experience.

The limitation of rank in the (reserve) medical corps was abrogated fairly early in the war, both in theory and in practice, and did not at the beginning apply to such national guard surgeons as were eligible to the rank of lieutenant colonel (division surgeon). The profession actually received a good many commissions higher than the majority, at least one brigadier-generalship; and in another year of war, a still better showing would have been made.

The implication that the reserve surgeon would have been better off either as to proficiency, efficiency or personal comfort under amateur superiors, is, so far as my experience and observation goes, entirely contrary to fact.

The general complaint of surgeons from civilian life who served in the war depends not on the matter of rank but on the essential differences between civilian and military regulations and customs. How far the latter can be modi-

fied to suit men from civil life in a great military emergency is a problem too complicated to discuss here, and I am rather inclined to believe that Mahomet will have to go to the mountain instead of trying to get the mountain to come to him.

The problem would have been solved to a large degree practically if, instead of thinking so much about rank, men who were only temporarily in military service had continued to think of themselves as physicians, had limited their conception of rank to necessary authority, and had not carried it into strictly professional matters, as the establishment of diagnoses, arbitrary regulation of therapeutics and claiming of right to operate, but had demanded and practiced the spirit of professional loyalty supposed to pertain to their life work.

A. L. BENEDICT, M.D., Buffalo.

COMPULSORY HEALTH INSURANCE

To the Editor:—In THE JOURNAL, Jan. 24, 1920, p. 271, Dr. E. M. Stanton opposed the principles of compulsory health insurance on the grounds that the burdens of such insurance cannot be borne by the insured. In so doing, in my opinion, he made a very good argument in favor of compulsory health insurance.

It is precisely because modern scientific medicine, as practiced today, is too expensive for any except the very rich that some system must be evolved to diminish the expense to the individual.

If Dr. Stanton seriously believes that the wage earner in general receives adequate medical attention under the present system he is, naturally, opposed to any form of health insurance. A few physicians who emphasize the fact that prolonged illness in persons of limited income almost universally leads to the support of the individual either by the state or by charitable institutions believe that health insurance will diminish the demands made on charity.

Health insurance will decrease the demands made on charity because it will cause: (1) the distribution of the economic loss due to enforced idleness as a result of illness, and (2) a diminution in preventable illness which will occur as a consequence of earlier diagnosis and treatment.

Unless it is believed that we are accomplishing everything possible toward the prevention of disease, there is no excuse for opposition to a measure which is proposed in the effort to afford earlier and better medical care for a large percentage of individuals in a given community. Criticism to health insurance should at least suggest the alternative.

Dr. Stanton quotes the General Electric Mutual Benefit Association as "one of the best sickness insurance policies ever offered," and prefers it to the Davenport bill. Unfortunately, not all workmen can be employed by the General Electric Company or by the Ford Motor Company, which also makes excellent provision for sick or injured employees. It is precisely because it is desirable to give every employee the protection that is now given by certain of the more progressive industrial corporations that compulsory health insurance has been advocated.

If the General Electric Company has the best plan of sickness insurance, by all means let us advocate such a plan. If universal care of the community by the state board of health is preferable to any form of insurance, then it should be favored. But let us not oppose constructive legislation for the benefit of the sick unless we can offer something better.

Private practice and organized charity, together with the excellent state organizations for public health, do not today solve the problem of medical care for the wage earner, as the records of any charitable organization will clearly demonstrate.

A. C. BURNHAM, M.D., New York.

The Public's Help.—No big step in social progress is possible without the active sympathy of large masses of the community, and in this respect the movement for improving the national health has the greatest support.—Brend.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SURRENDER OF WAR TERM INSURANCE

To the Editor:—I desire some information about war risk insurance. Will the Bureau of War Risk Insurance refund all or part of the premiums paid after discharge from the service to any one who wishes to discontinue his insurance? I wrote the bureau and asked this information, but received an evasive answer along with advice that I had better reconsider my decision on account of the numerous advantages, etc., etc. The letter was a "ready made" one, like all correspondence of the bureau, my name and address being merely inserted to fit the contents.

I was honorably discharged from service late in 1918, and hoping to be able to convert my policy into a standard government peace time policy, I paid my war time premiums regularly and faithfully each month as due, up to and including September, 1919. I was continually annoyed by notices from the bureau that my policy had lapsed, in spite of the fact that I had receipts for premiums and was paid up to date and continued to receive receipts month by month. I wrote the bureau three or four times asking an explanation, and each time had to wait from four to six weeks for a reply which, as usual, dodged my question and enumerated the many advantages of holding on to one's policy, etc., etc. Then the bureau sent five different premium receipt-notices, also a few lapse notices sprinkled in, to the address of my beneficiary, in a far away land across the sea. Note, I had already received, and was then receiving, correspondence from the bureau at my correct address in America. Their very latest stunt was to address me by my first and middle name only, making a surname out of my middle name, and reduplicating the initial of my middle name. By extraordinary intelligence on the part of the local post office, the letter reached me safely. I cannot think but that the Bureau of War Risk Insurance is a marvel of inefficiency. For this reason, and because I was financially unable to convert my policy, I became thoroughly disgusted, and wished I had dropped my insurance when I was discharged. So in October, 1919, instead of paying a premium as usual, I wrote and asked the bureau the question I have asked you. Under date of November 24, they answered as I described. Perhaps you can give me the information I desire, since I cannot get it from the bureau.

M.D., Ind.

ANSWER.—Our correspondent's letter was referred to the Bureau of War Risk Insurance, which replies: "A man who kept up his insurance after discharge has received full value for the premiums paid in that he has received protection for the time covered by his premiums. The war term insurance has no surrender value except an amount equivalent to the unearned premium paid in. A premium notice is sent to each policy holder as a reminder that the premium should be paid. If it has been paid already, the notice should be disregarded. In some instances, premium notices may be forwarded after the premium payment has been received, but before it has been posted to the insured's account." The director of the bureau states that he does not feel that a clerical error, even though annoying, should cause a man to demand his insurance policy or allow it to lapse. Government life insurance is backed by all the resources of the United States government, and is not only the safest but the cheapest insurance with similar benefits obtainable. Our correspondent is also requested to communicate directly with Mr. R. W. Emerson, Assistant Director of War Risk Insurance, who will make a special investigation of his case.

FILARIASIS—TROPICAL DISEASES

To the Editor:—1. Please let me know what is the latest treatment for filariasis.

2. What is the best book on tropical diseases?

A. C. VIEIRA DA CUNHA, M.D., Recife, Brazil.

ANSWER.—1. Drug treatment of filariasis, according to Manson and others, is uniformly disappointing. The drugs that have been recommended in the treatment of this disease are gallic acid or benzoic acid in large doses, glycerin, the tincture of ferric chlorid, decoction of mangrove bark, chromic acid, quinin, sodium salicylate, ichthyol, *Nigella sativa*, thymol, and methylene blue. R. G. Lee (*Crónica méd.-quir. de la Habana* 44:15 [Jan.] 1918) reported excellent results in eighteen cases of filarial hematuria treated with potassium iodid. Leonard Rogers (*Lancet* 2:604 [Oct. 4] 1919) found that repeated injections of safe doses of sodium antimonyl tartrate, 1:50 solution, produced diminution of filarial embryos in the peripheral blood. Jeanselme (*Bull. Acad. de méd.* 81:156 [Feb. 4] 1919) and Deschamps (*Bull.*

cad. de méd. 81:655 [May 20] 1919) have reported radical cures after intravenous injections of arsphenamin. Special treatment will naturally depend on the manifestations in a given case. Lymphangitis with fever requires rest, elevation of the affected part, ice or cooling lotions or warmomentations locally, opium or morphin when necessary to relieve pain, mild aperients, and if tension is great, pricking and scarifying of the swollen area. Lymph scrotum should be kept scrupulously clean, powdered, suspended and protected against irritation or injury. Chyluria demands absolute rest, elevation of pelvis, restriction of fluid and food—especially fats—and gentle purgation. In elephantiasis of the extremities, elastic bandages, massage and elevation of the part are indicated. Any or all of these conditions may necessitate surgical interference for the relief of an incapacitating amount of discomfort or frequent inflammatory attacks with fever.

2. There are several excellent texts on tropical medicine, among which are:

- Manson, Sir Patrick: *Tropical Diseases*, Ed. 5, Pp. xxiv+937, New York, William Wood & Co. 1914.
Castellani, Aldo, and Chalmers, A. J.: *Manual of Tropical Medicine*, Ed. 2, New York, William Wood & Co., 1913.
Stitt, E. R.: *The Diagnosis and Treatment of Tropical Diseases*, Ed. 2, pp. xiii+534, Philadelphia, P. Blakiston's Son & Co., 1917.
Handbuch der Tropenkrankheiten, herausgegeben von Prof. Dr. Carl Mense, Ed. 2, Leipzig, J. A. Barth, 1913.
Traité pratique de pathologie exotique, publiée en fascicules sous la direction de MM. C. Grall et A. Clarac, Paris, J. B. Baillière et fils, 1910-1913.

EUPAD AND EUSOL

To the Editor:—Please publish the formula for preparing eusol. This preparation was extensively used by the medical officers in the British Army in France.

F. P. SALLEY, M.D., Union, S. C.

ANSWER.—In 1915, Prof. Lorrain Smith and co-workers published a report on the "Antiseptic Action of Hypochlorous acid and Its Application to Wound Treatment" (*Brit. M. J.* 1:124 [July 24] 1915) wherein they described (1) a powder consisting of an intimate mixture of equal parts by weight of boric acid and chlorinated lime ("bleaching powder") to which was given the name "eupad"; (2) a solution prepared from the same ingredients as those of eupad, which was termed "eusol." This solution may be made in either of two ways:

- (a) Twenty-five grams of eupad are shaken with 1 liter of water, allowed to stand for a few hours, and then filtered through cloth or filter paper.
(b) To 1 liter of water add 12.5 gm. of chlorinated lime ("bleaching powder"), shake vigorously, then add 12.5 gm. boric acid powder and shake again. Allow to stand for some hours, preferably overnight, then filter, and the clear solution is ready for use.

In the foregoing formulas (of Smith et al.) for eusol, commercial chlorinated lime was employed, which contained about 25 per cent. available chlorin, whereas the official chlorinated lime is required to assay 30 per cent. in both Great Britain and the United States. Therefore when the official product is used a smaller quantity should be sufficient, namely, 10 gm. of chlorinated lime U. S. P., instead of 12.5 gm. of the commercial product. The name "eusol," we understand, is a contraction of the words "Edinburgh University solution."

LITERATURE ON ELECTRIC SHOCK

To the Editor:—Please give me the titles of literature bearing on unconsciousness, death, etc., from electric shock.

GLENN E. WRIGHT, M.D., Woodstock, Ill.

ANSWER.—References to the literature on electric shock were published in *THE JOURNAL*, March 15, 1913, p. 851, and Feb. 27, 1915, p. 763.

The following titles have since accumulated:

- Ingalls, H. A.: Remote Effects of Electric Shock, *New Mexico M. J.* 15:185 (Feb.) 1916.
Kirmisson, E.: Brulures multiples par l'électricité; hémoglobininurie; morte rapide à la suite de convulsions, *Bull. et mém. Soc. de chir. de Paris* 42:1887, 1916.
Bayliss, W. M.: The Dangers of Electrical Currents, *Nature* (London) 100:24, 1917.
Mieremet, C. W. G.: Death from Electric Shock from Incandescent Bulb, *Nederlandsch Tijdschr. v. Geneesk.* 2:1951 (Dec. 1) 1917; abstr. *THE JOURNAL*, March 2, 1918, p. 661.
Tornaghi, E.: Polyncuritis Following Electric Shock from Live Wire, *Brazil Med.* 31:175 (May 26) 1917; abstr. *THE JOURNAL*, July 28, 1917, p. 393.
Lewis, D.: Electric Burn Causing Necrosis of Skull, *Ann. Surg.* 67:149 (Feb.) 1918.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.
KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.
MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

NEW FEATURES IN SANATORIUM ARCHITECTURE

Hospital and sanatorium architecture is in a very fluid state, owing in part to the development of fresh air treatment of tuberculosis and to the rapid multiplication of sanatoriums

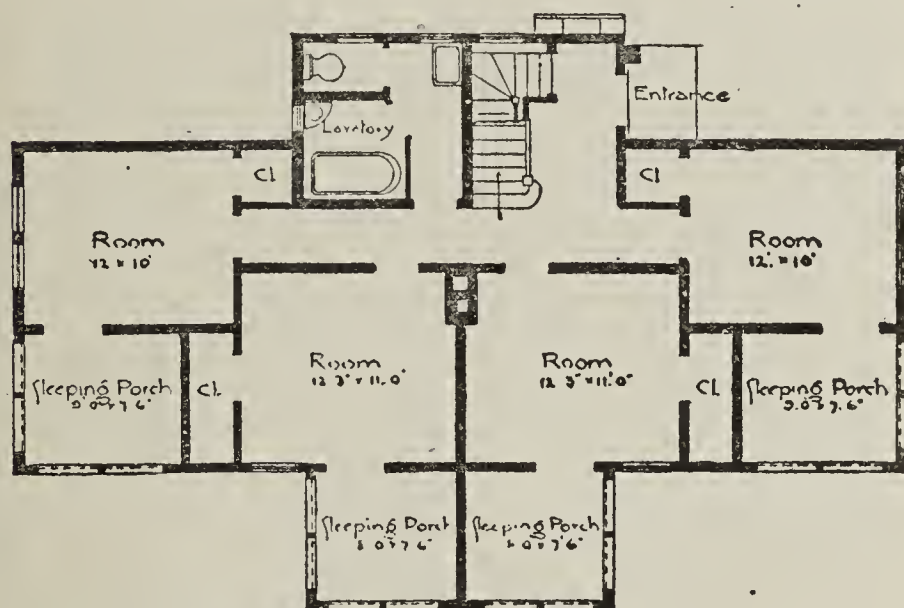


Fig. 1.—Typical floor plan of a two-story, eight-room cottage. There are a toilet and bath on each floor, and a closet and sleeping porch to each room.

and hospitals. The main point of recent advance is the recognition that while the grouping of patients in large wards promotes economy of administration, it lessens privacy and homelikeness. This is an important consideration, particularly in cases requiring treatment extending over long periods of time, and also in the handling of acute respiratory conditions. We have recognized that the old grouping *en masse* of patients was not best. The formation of cubicles by hanging sheets between beds will no doubt arouse the ingenuity of hospital architects to devise more permanent arrangements to produce the desired protection. The public and the profession have been educated as to the value of fresh air. It is a well recognized fact that the good accomplished for the consumptive patient by sanatorium treatment is directly to his general condition and only indirectly to his lesion. Many existing institutions appreciating this fact are opening windows, putting cubicles around certain patients, and using piazzas and roofs for convalescent patients.

It is in the architecture of new institutions, however, that we look for the greatest advance. Facilities must be furnished for providing patients with fresh, cool air, and also with warmth when they are fed, bathed or dressed. The sleeping porch, an American invention, has become practically universal in tuberculosis sanatoriums. Prior to 1900, the few existing tuberculosis institutions followed the hospital idea of rooms or wards; but with the development of the

kitchen. The new addition will be built 30 feet to the southwest of the existing building, and will be connected to it by a closed corridor 6 feet 6 inches wide. It will be three stories high. On the ground floor will be located the laboratory, roentgen-ray department, physician's offices and four patients' units. The center of the first floor is taken up by a large sitting room with closed porch, a diet kitchen and chart and service rooms. The second floor is composed exclusively of patients' units. Each unit consists of a room 12 feet by 10 feet 6 inches, a sleeping porch 10 feet 2 inches by 8 feet 9 inches, a bathroom, and a clothes closet. It is to be noted that the rooms are well ventilated and that each room has an individual sleeping porch open on two sides. The doors are amply wide to permit the beds being moved in and out. The sleeping porches are so arranged as not to overlook each other, thus insuring privacy. Each suite has its bathroom. The plan is an attempt to give patients the privacy and comfort they have in their homes, along with fresh air and the care and supervision that can be provided only in an institution.

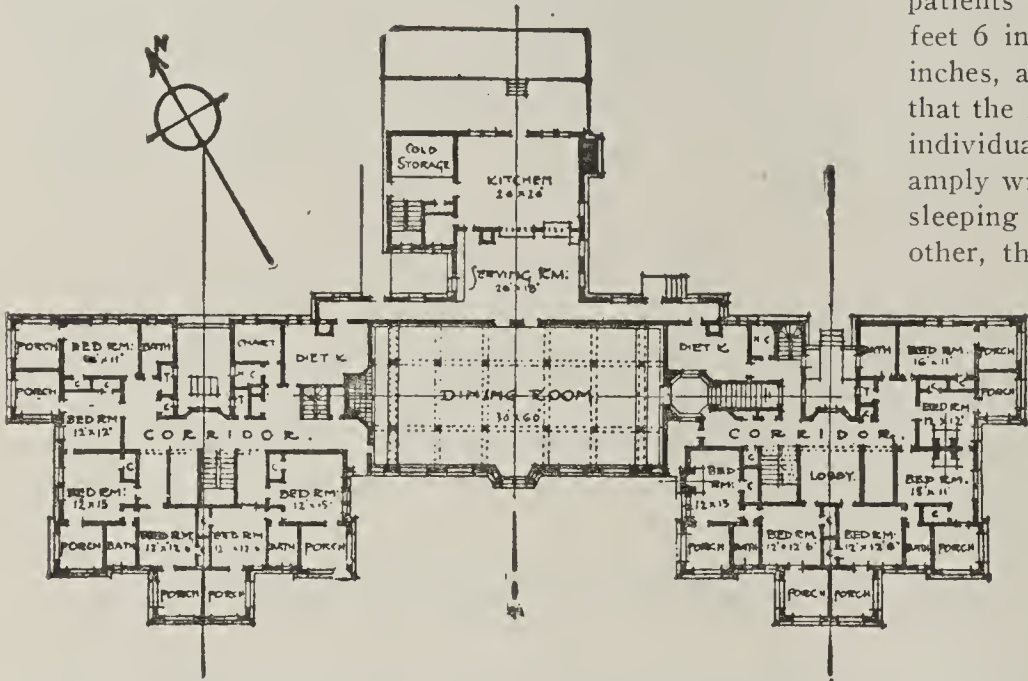


Fig. 2.—Plan of principal floor, main building; patients' suites grouped around dining room, office, kitchen, service room and storage. Each suite consists of bedroom, closet, sleeping porch and bathroom.

sleeping porch and cottage buildings at the Trudeau Sanatorium, sanatorium architecture became an entity. Following this, the nation-wide campaign against tuberculosis was organized and there was rapid development of local and state sanatoriums. The apparent necessity for lower cost of building and administration led to the adoption of the so-called "lean to" or King shack plan for ambulant patients.

In 1905, the idea of the individual room and sleeping porch was elaborated in the erection of several eight-room, two-story cottages at the Cragmor Sanatorium, Colorado Springs. A typical floor plan of these cottages is shown in Figure 1. It is quite simple as applied to a small building.

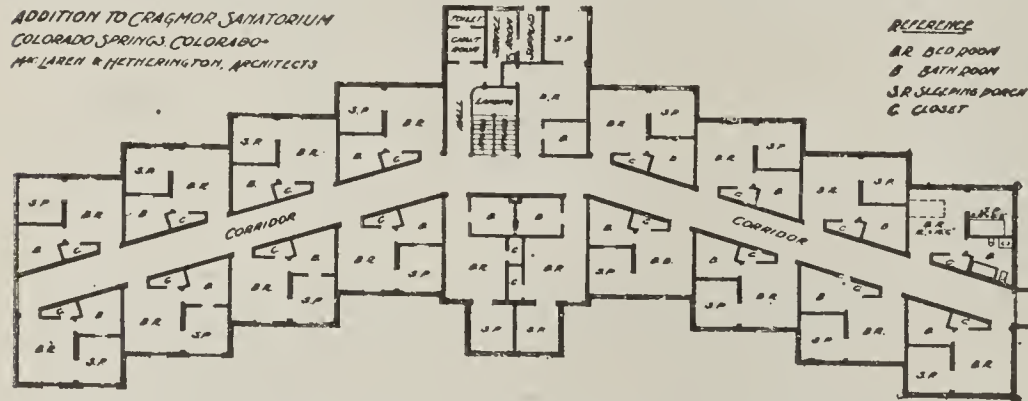


Fig. 3.—This addition will be connected with the existing building by a corridor so as to utilize the kitchen service. The jog in the wall gives each inside room two outside fronts and secures privacy for the sleeping porch. Each unit opens directly on the corridor.

The arrangement was satisfactory from an administrative standpoint as well as from that of the patient, and it was later carried into effect in a large three-story building, the principal floor of which is shown in Figure 2. This building, in addition to suites for patients, contains dining room, offices, kitchen, service room and storage. The arrangement provides for each room a bath, a closet and a sleeping porch that opens on two sides. As a still further development of this idea a new building, the ground floor plan of which is shown in Figure 3, is to be erected adjoining the main building (Fig. 2) in order to receive direct service from the

Wyoming June and October Examination

Dr. J. D. Shingle, secretary of the Wyoming State Board of Medical Examiners, reports the written examinations held at Cheyenne, June 23-25 and Oct. 6-8, 1919. The examinations covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 11, including 1 osteopath, passed, and 8 failed. Sixteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1906)	77
Chicago College of Medicine and Surgery	(1916) 75.7,	(1918) 78.6,	79.1
College of Physicians and Surgeons, Chicago	(1897)	83.6
Northwestern University	(1906)	81.2
College of Physicians and Surgeons, Keokuk	(1887)	75.3
Kansas City University of Physicians and Surgeons	..	(1919)	84.5
St. Louis University	(1914)	85.1
University of Nebraska	(1916)	85.4
FAILED			
Chicago Hospital College of Medicine	(1918)	66
Loyola University	(1917)	65.2
Barnes Medical College	(1903)*	73.2
Kansas City University of Physicians and Surgeons	..	(1919)	58.1
Marion-Sims College of Medicine	(1896)	64.6
St. Louis Coll. of P. & S.	(1918) 45,	(1919)*	68
St. Louis University	(1906)	63.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of California	(1910)	California
Bennett Med. Coll.	(1910) Minnesota	(1912)	Illinois
Hahnemann M. Coll. & Hosp., Chicago	(1909)		Illinois
Loyola University	(1916)	Illinois
Northwestern University	(1904)	Illinois
Rush Medical College	(1916)	Illinois
University of Kansas	(1917)	Kansas
Detroit Coll. Med. and Surg.	(1916)	Michigan
St. Louis Coll. Phys. & Surgs.	(1917)	Tennessee
University of Nebraska	(1918)	Nebraska
Eclectic Medical Institute	(1891)	Penn.
Homeopathic Hosp. Coll., Cleveland	(1883)	Nebraska
Western Reserve University	(1918)	Vermont
Medico-Chirurgical Coll. of Phila.	(1907)	Vermont
University of Virginia	(1911)	Michigan

* Failed at both June and October examinations.

New Hampshire September Examination

Dr. Charles Duncan, secretary of the New Hampshire State Medical Board, reports the written examination held at Concord, Sept. 11-12, 1919. The examination covered 11 subjects and included 80 questions. An average of 75 per cent. was required to pass. One candidate, an osteopath, took the physician's and surgeon's examination and passed. Ten candidates were licensed by reciprocity. The following colleges were represented.

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois	(1918)	Illinois
Medical School of Maine	(1895)	Mass.

Harvard University..(1910) Rhode Island, (1915, 2), (1916)	Mass.
Tufts College Medical School.....(1917), (1919)	Mass.
Cornell University.....(1917)	New York
University of Vermont.....(1915)	Vermont

Illinois September Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, Sept. 22-25, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 78 candidates examined, 53 passed and 25 failed. Twenty-eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
George Washington University	(1917)	1	1
Iowa University	(1915)	1	1
Bennett Medical College	(1910), (1914)	2	2
Chicago College of Medicine and Surgery.....	(1916)	1	1
Chicago Hospital Coll. of Med....(1915), (1918, 8), (1919, 3)		12	12
College of Phys. and Surgs., Chicago.....	(1904)	1	1
Loyola University.....(1916), (1917), (1919, 11)		13	13
Northwestern University.....(1915), (1918), (1919)		3	3
Rush Medical College.....(1914), (1919, 8)		*9	9
University of Illinois.....(1919)		1	1
Medical College of Indiana.....(1904)		1	1
Harvard University	(1919)	1	1
St. Louis University	(1919)	1	1
University and Bellevue Hospital Med. Coll.....	(1915)	1	1
University of Buffalo	(1919)	1	1
Leonard Medical College.....(1907)		1	1
Jefferson Medical College	(1919)	1	1
University of Pennsylvania.....(1918)		1	1
Deharry Medical College.....(1915)		1	1

College	FAILED	Year Grad.	No. Licensed
College of Phys. and Surgs., Chicago.....	(1901)	1	1
Chicago Hosp. Coll. of Med....(1915, 2), (1918, 4), (1919)		7	7
Benner Medical College.....(1910), (1917)		2	2
Loyola University	(1916)	1	1
Ensworth Medical College.....(1903)		1	1
Homeopathic Medical College of Missouri.....	(1904)	1	1
National University of Arts and Sciences....(1916), (1917)		2	2
Washington University	(1903)	1	1
Chattanooga Medical College.....(1909)		1	1
Deharry Med. Coll..(1915, 2), (1916), (1917), (1918, 2), (1919) 7.		1	1
Western University	(1913)	1	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College.....	(1912)		Nebraska
Chicago College of Medicine and Surgery.....	(1916)		Missouri
Indiana Medical College	(1907)		Indiana
Indiana University	(1911), (1914)		Indiana
Geokuk Medical College.....	(1901)		Iowa
University of Louisville.....	(1909) Indiana, (1917)		Kentucky
College of Phys. and Surgs., Baltimore.....	(1912)		W. Virginia
Johns Hopkins University	(1913)		Mass.
University of Maryland.....(1910), (1916)			Maryland
Detroit College of Medicine and Surgery.....	(1914)		Michigan
University of Michigan Medical School.....	(1908)		Michigan
University of Minnesota	(1915)		Minnesota
National University of Arts and Sciences.....	(1914)		Missouri
St. Louis University.....(1914), (1915), (1917, 2)			Missouri
Washington University	(1915), (1916), (1917)		Missouri
Columbia University	(1916)		New York
Eclectic Medical College, Cincinnati.....	(1917)		Ohio
Medical College of Ohio.....	(1896)		Ohio
Jefferson Medical College.....(1918)			Delaware
University of Pittsburgh	(1911)		Penna.

* Eight of these candidates received limited licenses, pending completion of their hospital internships.

Arizona October Examination

Dr. Ancil Martin, secretary of the Arizona State Board of Medical Examiners, reports the written examination held at Phoenix, Oct. 7, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 20 candidates examined, 17 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles.....	(1918)	82	82
Chicago Homeopathic Medical College	(1892)	86	86
College of Physicians and Surgeons, Chicago	(1908)	85.6, 87.6	85.6, 87.6
Northwestern University	(1900) 90.9, (1915)	84.8, 89.4	84.8, 89.4
Rush Medical College	(1914)	91.5	91.5
Indiana University	(1918)	87.7	87.7
Johns Hopkins University	(1914)	84.6	84.6
University of Maryland	(1917)	78.8	78.8
Harvard University	(1918)	82.7	82.7
Detroit College of Medicine	(1900)	84.	84.
University of Minnesota	(1913)	82.5	82.5
St. Louis University	(1911)	81.7	81.7
Eclectic Medical Institute	(1905)	81	81
University of Tennessee	(1915)	80.2	80.2

College	FAILED	Year Grad.	Per Cent.
American Medical College	(1892)	60.5	60.5
Albany Medical College	(1898)	62.8	62.8
Memphis Hospital Medical College	(1893)	69.1	69.1

Book Notices

THE FUTURE OF MEDICINE. By Sir James Mackenzie, F.R.S., M.D., F.R.C.P., Consulting Physician to the London Hospital. Cloth. Price, \$3.40. Pp. 238. New York: Oxford University Press, 1919.

Scattered through the numerous writings of Sir James Mackenzie are many opinions concerning various aspects of medical education and practice. These statements, most of them critical or suggestive, have been collected, amplified and arranged in orderly sequence and go to make up the present volume. The motif of the book is that the opportunities for investigative work in medicine of the future lie not with the hospital physician or the laboratory man but with the general practitioner. He alone, Mackenzie contends, can learn to appreciate at their true value the symptoms of disease; he is the one best qualified to study the effects of drugs and other remedial agents on sick human beings; he is the only one who by force of circumstances is permitted to observe disease in its incipience and to discover methods of prevention; he is the one who, relying not on instruments of precision or on supposedly accurate laboratory tests or reports of specialists but rather on his well-trained five senses and his judgment ripened by years of experience, learns to recognize such disease with a certainty and an acumen denied to others. Many illustrative examples are cited, drawn largely from Mackenzie's well-known productive investigations on diseases of the heart. There is so much of truth in what he says, so often with sure touch does he locate the disease spot in our system of education or of practice, so keenly does he lay bare our own personal weakness and so clearly does he point out the way of reform—for his criticisms are constructive as well as destructive—that one must perforce be stimulated and benefited by the reading of the book. But one cannot always agree with him. His condemnations of hospital physicians, bacteriologists and other specialists, laboratory experts, and instruments of precision are too sweeping. The truth of many statements, taken even with the context, may well be questioned; many should be viewed rather as expressions of opinion than as demonstrable facts. One gets the impression of a limitation of the field of vision in the author, a certain provincialism that might not have been had he had a wider acquaintance with the world's medical literature, a more extensive practical acquaintance with great medical men and methods in hospitals and laboratories in the metropolis and in lands other than his own, and if all this had happened early in his medical career. Was it not Samuel Johnson who said you might make a good deal out of a Scotchman if you caught him when he was young? We owe much to Sir James Mackenzie; he is deservedly a leader in British medicine; we welcome his advice and criticism; but we do wish he did not leave on us the impression that he feels that the whole medical world is out of joint and that he seems born to set it right.

THE CONDENSED CHEMICAL DICTIONARY. A reference volume for all requiring quick access to a large amount of essential data regarding chemicals, and other substances used in manufacturing and laboratory work. Compiled and Edited by The Editorial Staff of the Chemical Engineering Catalog. F. M. Turner, Jr., Technical Editor, D. D. Berolzheimer, W. P. Cutter, and John Helfrich, Assistant Editors. Cloth. Price, \$5. Pp. 525. New York: The Chemical Catalog Company, Inc., 1919.

This book is stated to be "a reference volume for all requiring quick access to a large amount of essential data regarding chemicals and other substances used in manufacturing and laboratory work." The book has evidently been compiled by engineers rather than by pharmaceutical chemists, since the information which might appeal to physicians is unreliable. As illustrations of the numerous misstatements found throughout the work, these may be instanced: The strength of the U. S. P. hydrocyanic acid is given as 10 per cent.—an unpardonable error; that of U. S. P. hydrobromic acid as 40 per cent.; the statement is made that cascara bark loses its cathartic properties on being kept for one year; that magnesium sulphate is soluble in alcohol; that monobasic

sodium phosphate is described in the U. S. Pharmacopeia; also the formula given for homatropin hydrobromid is not the generally accepted one. A number of substances well known in modern medicine, such as procain (novocain), stovain and arsphenamin (salvarsan) are not described, while substances that have no place in rational therapeutics, such as horseradish, tonga, sunflower and trailing arbutus, are described as medicines. The technical uses of barium sulphate are described, but its use in roentgenologic diagnosis is not mentioned. The book is of little value to physicians. It might have been of some value to them if it had been critically edited and if the pharmacologic actions of drugs had been briefly stated. In the tabulation of "uses" as printed, no extra space would have been required to insert such words as "emetic," "cathartic," "diuretic," etc., in addition to the single word "medicine."

THE ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE AND THEIR TREATMENT. A Handbook for Students. By Ernest Clarke, M.D., F.R.C.S., Ophthalmic Surgeon to the King George Hospital. Fourth edition. Cloth. Price \$2.50. Pp. 243, with 92 illustrations. New York: William Wood & Co., 1918.

This is the fourth edition of this admirable book, the first edition having been published fifteen years ago, based on lectures delivered at the Central London Ophthalmic Hospital and the Medical Graduates' College. For an established ophthalmologist the book is of little value, as without a knowledge of the fundamentals that it contains he would hardly be competent to practice this specialty. But for medical students preparing to practice ophthalmology, it is of very practical value. A thorough knowledge of the optical properties of the eye, the different forms of ametropia, the mechanism of accommodation, and the methods of refraction are the first essentials to be mastered before one should attempt to deal with the pathology and treatment of eye diseases. The author has arranged these various subjects in a logical way, and, omitting nonessentials, presents the subject matter clearly and concisely. There can be nothing essentially new or original in a treatise of this kind, so that the merit it deserves is due to the author's happy arrangement of the text and the clear elucidation of the subject, which makes it a work of real value to the student of ophthalmology.

WAR SURGERY FROM FIRING-LINE TO BASE. By Basil Hughes, D.S.O., M.A., M.B., and H. Stanley Banks, M.A., M.B., Ch.B., with Special Chapters by Lieut.-Colonel L. F. Smith, C.M.G., R.A.M.C., and Miss C. Bilton, R.R.C., Q.A.I.M.N.S., and an Introduction by Colonel Sir T. Crisp English, K.C.M.G., F.R.C.S., A.M.S., Consulting Surgeon to the British Forces in Italy. Cloth. Price, \$9. Pp. 623, with 373 illustrations. New York: William Wood & Co., 1919.

This is a brief description of the treatment of the wounded from the onset to the time they leave the base hospital. There are lengthy chapters on the bacteriology and pathology of war wounds and the newer methods of treatment, especially those developed by the British. There are several chapters devoted to regional surgery. General anesthesia is advocated for all head operations, instead of local anesthesia as introduced by Gray and extensively used by the British surgeons. Chest injuries were handled more conservatively than was the practice in the American service. Flap amputation is recommended in preference to the guillotine method in all cases, but the wounds are left open for delayed primary or secondary suture. Numerous photographic and roentgenographic illustrations have been included.

DER KROPF DER WEISSEN RATTE. Beitrag zur vergleichenden Kropfforschung. Von Prof. Dr. Th. Langhans und Prof. Dr. C. Wegelin. Paper. Price, 14 francs. Pp. 131, with 13 illustrations. Bern: Paul Haupt, 1919.

This publication is the outcome of one part of the work of the Swiss goiter commission, which has conducted extensive investigations in the attempt to explain the high goiter rate of Switzerland. Wilms and Bircher have reported that white rats which drink "goiter water" often show goiter comparable to that of man. Langhans and Wegelin find that white rats kept in goitrous districts often show hyperplasias of the thyroid, the histologic changes of which they describe in detail; but they were unable to establish that this change depends on "goiter water" or any other single factor. They

conclude that it is best explained "through the direct action of one or several goiter poisons on the thyroid;" but they do not determine the nature of these hypothetic "goiter poisons." They do find, however, that minute doses of iodids protect the rats from goiter.

Medicolegal

Legal Quarantine of Diseased Prostitute

(*Ex parte Brooks (Texas), 212 S. W. R. 956*)

The Court of Criminal Appeals of Texas dismisses a writ of habeas corpus, and remands to custody the relator, who sought to secure her release from custody under an order issued by the director of sanitation in the United States Public Health Service who was also the chief health officer of the city of Houston, which order stated that the relator had been examined and was infected with syphilis and was ordered into quarantine at the municipal farm, there to be detained until released by order of the health officer. The court holds wholly unsupported and negated by the facts the contention that the health officer had no right or power to act in the premises because he held two offices in derogation of the provisions of the state constitution. Nor was there anything suggested by the statement of facts which supported the contention that the farm was not a suitable place for such patients, was too remote from the city and transportation and the friends of the relator. Nor was anything presented for decision by the contention that there had been numerous tests given the relator since her confinement, and that some of them showed positive and some negative results. If she was free from syphilis or gonorrhea, she might present her application for a writ of habeas corpus to the local courts, and if free therefrom might be discharged. The courts will understand that the health officers have no right or power to hold in quarantine citizens who do not show the presence of some of the diseases named in Chapter 85 of the Acts of the Fourth Called Session of the Thirty-Fifth Legislature. It was claimed that the relator was denied treatment at the hands of other physicians than the city health officer, by the terms of the act; but the court finds nothing in the statute, or facts adduced and agreed to, to support such contention. The court has carefully examined all of the contentions of the relator, and holds them to be without merit.

The legislature has the power to declare that prostitution is a source of communicable diseases, and that its suppression is a public health measure, and to direct, by enactment, that reasonable steps be taken, in the manner, and with the latitude necessarily accorded to the enforcement of sanitary and health statutes, to suppress it. The discovery in patients of the diseases at which the provisions of Chapter 85 are directed is confided to the medical profession, and the care and treatment is of necessity in the hands of the members of the same noble fraternity. There is nothing in the act which prevents or forbids any suspect, or persons detained, from perfect freedom of treatment by any reputable physician while in the custody of the officials charged with the enforcement of the law; and nothing which deprives any persons so confined for treatment of a speedy hearing at the hands of the court if there is oppression or detention without cause. The object of the law is not punishment for the unfortunates who are afflicted with these maladies, so easily transmitted and so fearful in results, but the well-being of these and the remainder of the people.

In this case the relator was shown to be a married woman, with a hard-working husband and four children, the youngest being 18 months old; but she declined to live with them, stating that she preferred the life of the streets. Testimony was adduced showing numerous bestowals of carnal favors on soldiers and other persons, and also that the relator was afflicted with gonorrhea and syphilis. The court thinks the provision of the act that such patients should be confined

for treatment until declared cured by official pronouncement is not unreasonable, unjust or arbitrary. The court's attention was not called to any authorities holding this or other similar acts violative of any of the provisions of the state constitution, or discriminatory, arbitrary or unreasonable.

Communications Privileged and Not Privileged

(*Arnold v. Ft. Dodge, D. M. & S. R. Co. (Iowa), 173 N. W. R. 252*)

The Supreme Court of Iowa, in this personal injury case, holds that, where the defendant examined as a witness a physician who had aided another physician in the treatment of the plaintiff at the hospital immediately after his injury, questions which the defendant propounded to the witness as to what the plaintiff had told him as to the circumstances of the accident were properly excluded, on the ground of privilege under the statute, the physician being deemed to occupy at the time the relation of physician to the plaintiff as his patient. Nor was the privilege waived by the plaintiff by his testimony on cross-examination. Testimony thus given by the plaintiff on cross-examination is not deemed voluntary, and is therefore not a waiver. But it was different when inquiry was made of the witness as to conversations had with the plaintiff after the professional relation had ceased. Objection was made to this line of examination on the same ground as before, and this objection was also sustained. But the latter ruling cannot be approved. The defendant had a right to inquire into conversations had after the termination of the professional relation. These in the statutory sense were not confidential. The record, however, did not disclose in any way what the testimony of the witness would have been if the questions had been permitted; and the error therefore was not a reversible one.

Not Required to Keep Copy of Prescription

(*Friedman v. State (Tenn.), 213 S. W. R. 418*)

The Supreme Court of Tennessee reverses and dismisses this case in which defendant Friedman was convicted for the reason that he "did unlawfully distribute and dispense and prescribe morphin, without keeping a duplicate of the prescription as prescribed by law." The court says that he was not a salesman of the drug mentioned, but was a practicing physician. He prescribed morphin for a habitual user, after attending the patient, but kept no copy or duplicate of the prescription. A question to be decided was whether Acts 1913 (1st Ex. Sess.) Chapter 11, required him to do so. That portion of the act bearing on this subject reads:

"Physicians who shall dispense or distribute any of the aforesaid drugs provided by this act shall keep a duplicate of all prescriptions issued by them for a term of two years, and said duplicate shall be subject to inspection by any of the officers named in the preceding paragraph." Section 2.

It will be observed that it is not all physicians who are included within the provisions of this act. It is only physicians "who shall dispense or distribute any of the aforesaid drugs provided by this act, who shall keep a duplicate of all prescriptions issued by them for a term of two years." The act thus limits the number of physicians included within its terms. It is plain and unambiguous, and there is no room for construction. Therefore the court holds that the defendant did not violate this section of the act when he failed to keep a duplicate of the prescription, because he did not dispense or distribute the drug. The court is unable to comprehend how the defendant could be deemed a dispenser or distributor of the drug merely because he failed to preserve a duplicate of his prescription. The offense was not for issuing the prescription, because the defendant complied with every requirement of the law in that respect. The offense charged was failure on his part to keep a duplicate of the prescription, which he was not required to do under a proper construction of the act.

Counsel for the state ingeniously argued that the statute should be given the construction insisted on for the state, because of supposed conveniences to the agents of the state

who check up the sale of habit forming drugs. The court may well admit the conveniences suggested, but a sufficient answer in law is that the statute does not include them. Therefore it could not matter in this case what meaning was to be attributed to the words "dispense" and "distribute," because the defendant was in no sense a party to a dispensation or distribution of the drug because he failed to keep a duplicate of his prescription. It was the prescription furnished the druggist on which he acted, and not a duplicate in the hands of a physician.

The case of *Hyde v. State*, 131 Tenn. 208, 174 S. W. 1127, is in no sense in conflict with this opinion. In that case Dr. Hyde issued a prescription without attending the patient. It was held that the prescription made him an aider and abettor in the sale, although the alleged patient was not in existence.

Requirements in Action for Malicious Prosecution of Lunacy Proceeding

(*Barton v. Woodward et al. (Idaho), 182 Pac. R. 916*)

The Supreme Court of Idaho, in reversing a judgment that was rendered in favor of the plaintiff and in directing that a new trial be granted, in this action brought to recover damages for the alleged malicious prosecution of a lunacy proceeding, holds, to begin with, that such an action is not barred by the Idaho statute which limits to two years the time within which actions may be brought to recover damages for an injury to the person, or for libel, slander, assault, false imprisonment, etc. Then, taking up the contention that such an action would lie only where there had been a malicious prosecution of a criminal or civil action, the court says that, while there are authorities which go to the extent of so holding, the modern and better rule is to the effect that an action for malicious prosecution will lie against one who has maliciously and without probable cause instituted lunacy proceedings against another. But in a trial on the merits in a civil or criminal case, or in a lunacy proceeding, the question of probable cause is not passed on by the court, judge or jury; nor is it the criterion of the decision or verdict. The decision is on the merits and, if the defendant wins, it simply means that the plaintiff has not proved his case by the preponderance of the evidence or beyond a reasonable doubt. Therefore the verdict or decision has no logical bearing on the question of probable cause, and is not even admissible in evidence on that issue.

In this case it was shown that, prior to the making of the accusation, two reputable physicians, who had attended the plaintiff and thus had had recent opportunity to examine him and to judge of his mental condition, told one of the defendants, and he told the other, that the plaintiff was insane. It was also shown that, on an occasion when the plaintiff was before the Idaho state medical board, an applicant for a license to practice medicine and surgery, his conduct was such as to excite the suspicion of those who observed it, including one of the defendants, as to his mental balance; also, that shortly prior to his arrest on the insanity charge it came to the knowledge of the defendants that he had written prescriptions which were referred to in the record as "freakish," one of which was for strychnin in doses which, had one of them been taken by the patient for whom it was intended, would have proved fatal; another was for an eye wash which, had it been applied, would have ruined or destroyed the eyesight. On the lunacy hearing, the commission of physicians appointed to examine him reported that he was suffering from paranoia, but recommended that he be not restrained. The court concludes that the plaintiff did not sustain the burden of proof incumbent on him, and that no court or jury could reasonably find from the evidence that, in making the lunacy accusation against him, the defendants acted without probable cause. It was true that there was evidence which would justify a finding of malice, but want of probable cause cannot be inferred from malice.

The certificates of admission to practice medicine in other states, offered by the plaintiff and admitted in evidence by the trial court over the defendants' objection, were not admissible in the absence of evidence tending to show his

intention to engage in the practice there. They did not prove a right of the plaintiff to practice medicine in Idaho. They were not legitimate evidence of damage to his business; nor were they any evidence of damage to his reputation or his feelings. While not legally relevant or material, they were exceedingly prejudicial. They served to inject into the case a question of whether the refusal of the medical board to admit the plaintiff to practice in Idaho was right or wrong and prejudiced the defendants, as one of them was a member of the medical board and also filed a complaint against the plaintiff for practicing medicine without a license, acting under the orders of the medical board.

Not only does the court find no proof of want of probable cause in the evidence submitted by the plaintiff, but it holds that the defendants' motion for a nonsuit should have been sustained, though, since they did not rest on the motion, but introduced evidence, it was waived. And, since the defendants did not ask for a directed verdict at the close of the evidence, it was not incumbent on the supreme court to dispose finally of the case on this appeal. Costs were awarded to the defendants.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

December, 1919, 2, No. 12

- Treatment of Chronic Dacryocystitis. W. L. Benedict and R. A. Barlow, Rochester, Minn.—p. 843.
Six Meter Stereoscope. H. J. Howard, Peking, China.—p. 849.
Immediate Capsulotomy in Extraction of Senile Cataract. A. G. Bennett, Buffalo.—p. 854.
Paralysis of Accommodation Due to Focal Infections. C. A. Veasey, Spokane.—p. 858.
Accommodation in Lensless Eye. A. E. Davis, New York.—p. 860.
Assistants in Smith's Cataract Operation. A. E. Lister, London.—p. 865.
Tests for Determining the Sighting Eye. P. Dolman, Mineola, N. Y.—p. 867.

American Journal of Public Health, Boston

January, 1920, 10, No. 1

- Administrative Handling of Narcotic Addict: Its Benefit and Dangers. E. S. Bishop, New York.—p. 1.
New Specifications for Health Officers. M. Knowles and M. R. Scharif, Pittsburgh.—p. 8.
Public Health in Eastern Macedonia. P. D. White, Boston.—p. 14.
Preventive Medicine and War. M. P. Ravenel, Columbia, Mo.—p. 22.
Experimental Study of Efficacy of Gauze Face Masks. W. H. Kellogg, Sacramento, Calif.—p. 34.
Study of Toxicity of Diphtheria Bacilli Isolated from Immediate Contacts. F. W. Hachtel and M. S. Bailey, Baltimore.—p. 42.
Privy as Public Health Problem. L. L. Lumsden, Washington, D. C.—p. 45.
Development of State Departments of Health in Relation to Health Insurance and Industrial Hygiene. A. B. Wadsworth, Albany, N. Y.—p. 53.
Health Hazards of Nonpoisonous Dusts: Résumé of Recent Investigations. E. R. Hayhurst, Columbus, Ohio.—p. 60.
*Relative Importance of Milk Infection in Transmission of Certain Communicable Diseases of Man. E. K. Kelley and S. H. Osborn, Boston.—p. 66.

Importance of Milk Infection in Disease Transmission.—These studies are based on investigations by the district health office of the Massachusetts State Department of Health from 1915 to 1918, inclusive. Many of the conclusions tentatively formulated in a study by one of the authors (Kelley) three years ago are strengthened by this study, based on more complete epidemiologic data. It is believed that when the total aggregate of cases reported is considered, milk, while a dangerous factor and one of potential significance, does not assume any great quantitative factor as a channel of infection, provided prompt investigations are instituted as a routine procedure of all cases occurring on milk producing and milk handling premises. Milk, as a source of diphtheria, is practically negligible. Scarlet fever, though much more frequently transmitted by milk than is diphtheria, is milk borne in only a very small percentage of instances, as compared with other sources of infection. Milk

borne typhoid is a more serious epidemiologic problem, 496 cases out of a total of 6,331 typhoid cases being attributed to this cause, or 7.7 per cent. Increased pasteurization ought to greatly decrease the percentage of frequency of milk borne cases. Although pasteurization plants have greatly increased in Massachusetts during the past four years, the relative proportion of total cases traced to milk, compared to the total cases reported, has remained about the same.

Boston Medical and Surgical Journal

Jan. 22, 1920, 182, No. 4

- Prostatism. F. L. Keyes, New York.—p. 79.
Difficulties in Diagnosis of Meningitis. H. W. Dana, Boston.—p. 84.
*Blood Plasma Chlorids versus Renal Function. W. C. Rappelye, San Francisco.—p. 89.
Institutional Control of Diphtheria. F. A. Finnegan, Boston.—p. 93.
*Two Cases of Fetal Asphyxia. C. J. Kickham, Boston.—p. 94.

Blood Plasma Chlorids versus Renal Function.—The blood plasma chlorids were determined by Rappelye in 104 patients showing no obvious evidence of compromising physical disease, the blood being drawn twelve hours after the preceding meal. No relationship could be established between the chlorid values and the blood urea nitrogen, rate of elimination of phenolsulphonephthalein, blood pressure readings or urine specific gravity. A small group of cases of so-called essential vascular hypertension seemed to show an elevated renal threshold for sodium chlorid. Attempts to lower the threshold have given no conclusive results.

Fetal Asphyxia.—In one of the cases reported by Kickham, the patient was on her way to the bathroom when she "felt something." This proved to be the new-born child, but the head had remained in the vagina. The infant was in a state of pallid asphyxia but with the fetal heart still audible. Efforts at resuscitation proved futile. The child died without breathing. In the second case, the woman had a precipitate birth of twins, having had only one sharp pain. One fetus was still within its amniotic sac, which had not ruptured, although the entire sac was outside of the vulva. The sac was ruptured at once, attempts were made to resuscitate the baby, but it died without breathing.

Canadian Medical Association Journal, Toronto

January, 1920, 10, No. 1

- Scope of Federal Department of Health. P. H. Bryce, Ottawa.—p. 1.
Constitutional Symptoms and Focal Infections of Genito-Urinary Tract. D. W. MacKenzie, Montreal.—p. 11.
Tuberculosis of Kidney and Ureter. W. Jones and R. Pearce, Toronto.—p. 28.
Indications for and Results of Transfusion. E. C. Levine, Montreal.—p. 34.
Spasmophilia (Infantile Tetany). L. M. Lindsay, Montreal.—p. 43.
Wounds of Chest. N. B. Gwynn and H. E. MacDermot.—p. 50.
Problem of Mentally Defective in Province of Quebec. G. S. Mundie, Quebec.—p. 63.

Colorado Medicine, Denver

January, 1920, 17, No. 1

- Workings and Improvements of Harrison Antinarcotic Law. A. G. Dingley, Denver.—p. 4.
Indications for Operative Treatment in Cranial Fractures. O. M. Shere, Denver.—p. 9.
*Splenic Anemia in Children. J. W. Ames, Denver.—p. 12.

Splenic Anemia in Children.—A case of Banti's disease is reported by Ames, occurring in a boy, aged 6 years. A splenectomy was done and the boy recovered. He has gained 20 pounds in weight, eats and sleeps well, and gives every promise of living out the natural span of life. An interesting feature in the case was the fact that the boy's mother, who was only 16 years of age when he was born, gave a clear history of an obscure disease, accompanied by pronounced anemia from her birth to her twelfth year. She was transfused from the husband at the time of the boy's birth for a puerperal hemorrhage without benefit.

Endocrinology, Los Angeles

October-December, 1919, 3, No. 4

- *Role of Pineal Gland in Pediatrics; Review of Literature. M. B. Gordon, Brooklyn.—p. 437.
Cooperation by Internist and Surgeon in Treatment of Exophthalmic Goiter. H. Lissner, San Francisco.—p. 454.

Early Synostosis of Epiphyses with Dwarfism in Pubertas Præcox. K. H. Krabbe, Copenhagen.—p. 459.
Rational Therapeutics of Exophthalmic Goiter. I. Bram, Philadelphia.—p. 467.
Hypophysial Diabetes. J. Koopman, The Hague, Holland.—p. 485.

Rôle of Pineal Gland in Pediatrics.—A review of the literature has convinced Gordon that it is exceedingly difficult to arrive at any conclusive opinion as to the functionality of the pineal gland. There has been nothing substantial brought forward to show that it possesses an internal secretion. The experimental work has failed to prove that it possesses a function, and no experimental studies are complete as to allow comparison with the very striking syndrome seen clinically. If the views of Horrax and others that the pineal gland controls the inhibition of sex growth were true, then pineal feeding should postpone adolescence, but observations by Dana and Berkeley and by McCord produced the opposite. On the other hand, if the feeding results of McCord are correct, then the extirpations of Dandy and Horrax ought to have brought overwhelming evidence of a pineal function. In the final analysis, Gordon says, it seems justifiable at the present time to state that our knowledge of the function of the pineal is more problematic than accurate.

Rational Therapeutics of Exophthalmic Goiter.—Bram claims that careful nonsurgical management is capable of completely and permanently curing the great majority of cases of hyperthyroidism. The occasional exception not responding to nonsurgical measures is not an instance of genuine exophthalmic goiter but is one of malignant degeneration of the thyroid gland, a case of toxic symptoms superimposed on a long standing nontoxic goiter, or a case brought to the clinician's attention in a moribund condition. Bram, in unison with others interested in thyroid therapy, does not hesitate to conclude that he has been able to cure every case of primary exophthalmic goiter in which a fair degree of cooperation was obtainable; this was accomplished from six months to two years, depending on the exigencies of the case treated. Strict individualization of the case in hand is the dominating principle of treatment. The proper medical attendant, the proper social atmosphere, and the right kind of dietetic, hygienic, medicinal, psychotherapeutic, electrotherapeutic and other measures properly applied for the required length of time should yield a permanent cure.

Hypophysial Diabetes.—While proof is lacking that the two cases reported by Koopman are cases of hypophysial diabetes, he believes it is probable that the hypophysis played an important part in them, as good results were obtained from the administration of hypophysis extract. Three times daily, a tablet corresponding to one tenth of the fresh gland of the cow was given. The effect was striking. The third day of the onset of the treatment 200 gm. bread and 50 gm. of meat were tolerated without glycosuria. The fourth day 100 gm. meat and 200 gm. bread gave rise to a glycosuria of 16.4 gm. After a fortnight the protein tolerance was 200 gm. of meat. It has not been possible to increase this.

Illinois Medical Journal, Oak Park, Ill.

January, 1920, 37, No. 1

Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland.—p. 1.
Artificial Pneumothorax. E. A. Gray, Chicago.—p. 7.
Attempt to Control Influenza in Illinois. J. J. McShane, Springfield.—p. 17.
Lactational Hormone, a Physiologic Galactagogue. B. Van Hoosen, Chicago.—p. 22.
Pelvic Inflammations. H. N. Rafferty, Robinson.—p. 24.
Midwife Practice; An Anachronism. R. W. Holmes, Chicago.—p. 27.
Foundation Fund of Tristate District Medical Society in Outline. H. G. Langworthy, Dubuque, Ia.—p. 31.
Application to Civil Practice of Therapeutic Principles Established in Treating War Injuries to Thorax. J. L. Yates, Milwaukee.—p. 33.
Reciprocal Relation of Wisconsin with Her Neighbors. J. M. Dodd, Ashland, Wis.—p. 36.
Unshot Wounds of Chest. J. F. Van Paing, Chicago.—p. 40.
Enuresis in Adult Female; Surgical Treatment. F. C. Schurmeier, Elgin.—p. 43.
Application of Pure Cocain for Nasal Anesthesia. A. H. Andrews, Chicago.—p. 48.

Surgical Treatment of Enuresis in Adult Female.—In one case, cited by Schurmeier, that of a young woman, aged 21 years, he performed the simple operation of freeing the urethra through the tunica propria, approximately five-eighths inch deep, gave the meatus urinarius one half turn and sutured with interrupted fine silkworm. Four hours after the operation, the patient was catheterized and every eight hours afterward, for four days. She was now able to void urine with but slight discomfort. The urine was kept bland. She left the hospital at the end of two weeks with fairly good control over the urinary mechanism. Nine months passed, and the patient was greatly encouraged and anxious to have a second operation, which was calculated to make the surgical procedure 100 per cent. successful. Schurmeier performed the second operation. The urethra was freed as in the previous operation, a three-fourths turn was made and it was stitched as far back as possible, in the new position the urethra now had. The external closure was made as in the previous operation. The patient was catheterized four hours later, and every six hours thereafter for a few days; then the intervals were lengthened, until on the sixth day the patient was able to urinate in the normal way. After two weeks the patient left the hospital. She had good control over the urinary mechanism more than four years after the operation.

Use of Pure Cocain for Nasal Anesthesia.—The method Andrews has adopted is as follows: First, apply to the part to be anesthetized pencils of cotton saturated with from 1:1,000 to 1:5,000 solution of epinephrin. These pencils should be left in position for from five to eight minutes. After their removal, a small pledget of cotton is wound on an applicator and dipped in water or epinephrin solution. The excess of fluid is removed from the pledget by touching it to a towel. The damp pledget is then dipped into the powdered or flake cocain, and a small amount of the cocain is rubbed gently over the desired area. Removal of the excess of fluid from the pledget is important, for if the pledget is too wet, the fluid will run off into the remaining dry cocain and cause it to crystallize. If profound anesthesia is to be produced, a second application can be made after two or three minutes. Ordinarily, anesthesia is sufficient for examination or operation to be commenced immediately after the second application. The advantages claimed for the method are: It is safer than cocain solutions. The contracting effect of the cocain powder on the blood vessels seems to prevent its absorption. The anesthesia is more prompt, more profound, and more lasting. The small amount of cocain required is advantageous both from the standpoint of safety and economy. From one-fourth to one-half grain of flake cocain is sufficient to anesthetize both side of the septum for a submucous resection.

Iowa State Medical Society Journal, Des Moines

January 15, 1920, 10, No. 1

*Chronic Nephritis in the Young. W. L. Bierring, Des Moines.—p. 1.
Pathology of Intestinal Obstruction. M. J. Kenefick, Algona.—p. 5.
Symptoms of Intestinal Obstruction. W. A. Rohlf, Waverly.—p. 7.
Treatment of Acute Intestinal Obstruction. W. W. Bowen, Fort Dodge.—p. 9.
Hereditary Syphilis. C. L. Barewald, Davenport.—p. 14.
Laboratory Service of Divisional Laboratories. L. A. Fritze.—p. 16.

Chronic Nephritis in the Young.—The ages represented by Bierring's cases are 11, 15, 18 and 23 years, respectively. The onset in each instance was gradual and insidious; the distinctive subjective symptoms were severe headache, nausea, vomiting, polyuria, loss of weight and strength; albuminuria with casts, in a urine of low specific gravity; cardiac hypertrophy and arterial hypertension prevailed as the clinical signs. In the oldest patient a marked peripheral arteriosclerosis was present. A preceding acute nephritis could not be established in any of the cases. The familial tendency was noted in three cases. In one case the father died at 33 years of age of a sudden death simulating apoplexy. In a second case the mother died at 32 years of age of nephritis, and in the third case examination of an aunt of the patient, 31 years of age, and an uncle, 40 years of age,

revealed a condition of chronic nephritis with hypertension, death occurring in each instance from cerebral hemorrhage. Only two of the four patients remained under observation long enough to permit instituting any definite plan of treatment. Active eliminative measures, rest, restrictions in diet, with vasomotor relaxants, produced some improvement in symptoms, but apparently did not influence the course of the disease or avert the fatal outcome. Necropsies were not permitted.

Kansas Medical Society Journal, Topeka

January, 1920, 20, No. 1

- Lethargic Encephalitis. A. L. Skoog, Kansas City.—p. 1.
Etiology of Recent Influenza Epidemic. R. H. Major, Rosedale.—p. 4.
Physician and Health Officer. W. H. Wells, Coffeyville.

Journal of Parasitology, Urbana, Ill.

December, 1919, 6, No. 2

- North American Myxosporidia (in Fish). H. B. Ward, Urbana.—p. 49.
*Experiments with Steam Disinfectors in Destroying Lice in Clothing. R. H. Hutchison, Washington, D. C.—p. 65.
Two New Protocephalidae (in Fish). E. C. Gaust, Peking, China.—p. 79.
Resistance to Desiccation of Intermediate Host of *Schistosoma Japonicum* Katsurada. W. W. Cort, Baltimore.—p. 84.
*Mouse Oxyurid, *Syphacia Onvelata*, as a Parasite of Man. W. A. Riley, Minneapolis.—p. 89.
Dioctophyme Renale in Dogs. G. B. Wislocki, Boston.—p. 94.
Sarcosporidiosis in an East Indian. S. T. Darling, San Paulo.—p. 98.
Concentric Bodies, Probably of Parasitic Origin, in the Australian Sea Mullet, *Mugil Dobula*. J. B. Cleland, New South Wales.—p. 102.

Destroying Lice in Clothing.—The observations reported by Hutchison show that if the penetration of steam is sufficient to produce a temperature of 75 C. (167 F.) in the center of a barracks bag (or other load of infected goods) all eggs and active stages of body lice will be destroyed. If the disinfectors are operated efficiently on the time schedule now employed (viz., a 10 inch preliminary vacuum; 15 pounds steam pressure for fifteen minutes, reckoned from the time the steam is turned on; followed by a 10 inch drying vacuum), the requisite temperature (75 C.) is attained in every case. By efficient operation is meant (1) the maintenance of a full head of steam so that the 15 pounds pressure in the disinfectors is produced within five minutes, thus allowing at least ten minutes for exposure; (2) overloading must be guarded against; (3) the individual bundles must not be rolled too tightly. Little, if any, shrinkage of woolen goods is caused by this treatment. There is, of course, some wrinkling, but these wrinkles are not permanent and may be remedied by pressing.

Mouse Oxyurid in Man.—The parasite described by Riley was found in the feces of an American-Bohemian child living in Zamboanga. She was one of a family of five, all of whom were heavily infested by the worm in question. From the available data, it was evident that the food of the child and of others of the family had been grossly contaminated by mice or rats. This accounts for the infestation by one of the commonest nematode parasites of these rodents. Incidentally, it furnishes circumstantial evidence in favor of the view that *Hymenolepis nana* of man and *Hymenolepis murina* of rodents are one and the same species, as has been claimed, on morphologic grounds, by various investigators.

Michigan State Med. Society Journal, Grand Rapids

January, 1920, 18, No. 1

- Treatment of Infected Wounds with Demonstration of the Carrel-Dakin Technic. C. B. Gardner, U. S. Army.—p. 1.
Case of Bilateral Cavernous Sinus Thrombosis from a Carbuncle on Nape of Neck in Latent Influenza. L. B. Stegman, Battle Creek.—p. 9.
Treatment of Septic and Injured Joints. F. C. Kidner, Detroit.—p. 16.
Nontuberculous Pleurisy. J. S. Prichard, Battle Creek.—p. 20.
Résumé of Series of Cases of Ectopic Gestation and Ruptured Graffian Follicle. C. D. Brooks and W. R. Clinton, Detroit.—p. 22.
Commoner Clinical Types of Acute Pulmonary Edema and Their Treatment. W. H. Marshall, Flint.—p. 23.
Address Delivered at Fiftieth Anniversary of Detroit Academy of Medicine, Dec. 9, 1919. W. P. Manton, Detroit.—p. 26.
Value of Ophthalmoscope in Diagnosis and Prognosis of Systemic Disease. D. E. Goodwin, Houghton.—p. 31.
Importance of Physical Findings in Late Syphilis. Case Report. A. M. Crance, Bay City.—p. 33.
Gunshot Wound of Bladder. B. H. Van Leuven, Petoskey.—p. 35.

Military Surgeon, Washington, D. C.

January, 1920, 46, No. 1

- *Nonspecific Immunity. V. C. Vaughan, Ann Arbor, Mich., and G. T. Palmer, Springfield, Ill.—p. 1.
Organization and Operation of an Evacuation Hospital. E. C. Cutler, M. C., U. S. Army.—p. 9.
Physical Reconstruction in Army Hospitals. H. M. Evans, M. C., U. S. Army.—p. 33.
Air Medical Service and the Flight Surgeon. L. H. Bauer and W. MacLake, M. C., U. S. Army.—p. 40.
British Ambulance Trains. F. L. Pleadwell, M. C., U. S. Navy.—p. 51.
Case of Penetrating Wounds of Chest at Base Hospital. H. McCulloch and W. Fischel, M. C., U. S. Army.—p. 59.
Mumps: Its Etiology, Mode of Transmission. C. Wesselhoeft, M. C., U. S. Army.—p. 63.
Paraffin-Wax Treatment of Burns, with Special Reference to Mustard Gas Burns. J. S. Taylor, M. C., U. S. Army.—p. 83.
Series of One Hundred and Fifty-nine Mastoid Operations at Fort Riley. P. D. MacNaughton and G. W. Swift, M. R. C., U. S. Army.—p. 94.
Mastoid Operation Under Local Anesthesia; Report of Four Cases. E. D. Twyman and A. A. S. Giordano.—p. 101.

Nonspecific Immunity.—Is there any scientific evidence of the possibility of the development of a nonspecific bacterial immunity, or increased resistance to infection, is the question discussed by Vaughan and Palmer. The basis of their remarks is, in the main, the work done by the late Victor C. Vaughan, Jr., and first reported as early as 1905. The authors believe that it is an established fact that an increased tolerance to the protein poison can be established, that it is nonspecific and that no antibody is generated. Further, it is evident that a nonspecific bacterial immunity, never reaching a degree comparable with that attainable in toxic immunity, but certainly affording protection beyond that usually present, is secured by repeated introduction of the protein poison into the body. Vaughan and Palmer do not believe that this nonspecific immunity prevents infection with a newly imported virus, but that it mitigates the effects of this infection in some instances so markedly that no symptoms are recognizable, while in others its effects are shown only in the lower death rates among those possessing it. Animal experiments have shown that nonspecific immunity is of low grade. It protects quite securely against the minimum lethal dose of the culture, rarely against twice this amount, but beyond this it usually fails. However, this specific immunity, which the nonspecific form has enabled the individual to attain, may protect against from eight to twelve times the minimum lethal dose.

Minnesota Medicine, St. Paul

January, 1920, 2, No. 1

- Measure of Mentality. A. Sweeney, St. Paul.—p. 1.
Acute Mastoiditis. J. D. Lewis, Minneapolis.—p. 15.
Roentgen-Ray Examination in Eye Injuries with Foreign Body Localization. C. A. Donaldson, Minneapolis.—p. 18.
Mastoiditis, Acute and Subacute; Results in a Series of Operated Cases. H. I. Lillie and R. A. Barlow, Rochester, Minn.—p. 23.
Tuberculosis Work in Rural Communities. S. A. Slater, Worthington, Minn.—p. 25.
Organization of Military Hospitals; General Considerations with Reference to Treatment of War Wounds. A. DePage, LaPanne, Belgium.—p. 29.

New Jersey Medical Society Journal, Orange

January, 1920, 17, No. 1

- Underlying Causes of Narcotic Habit. A. Lambert, New York.—p. 1.
Physicians in Selective Draft of State of New Jersey. H. B. Costill, Trenton.—p. 5.
Significance of Cardiac Pain. G. H. Lathrope, Newark.—p. 9.
Modern Heart Methods; A Valuation. H. Wallace, Montclair.—p. 13.

Pennsylvania Medical Journal, Athens, Pa.

January, 1920, 23, No. 4

- Medical Profession and New Workmen's Compensation Act of Pennsylvania. F. L. Van Sickle, Olyphant.—p. 182.
Sanitary Disposal of Sewage and Trade Wastes. C. A. Emerson, Harrisburg.—p. 186.
Application of War Surgery to Industrial Practice. D. Hinton, Philadelphia.—p. 188.
Proposed Health Insurance Legislation. J. B. Andrews, New York.—p. 193.
Has Medical Profession Adequately Met Its Responsibilities? G. E. Tucker, Hartford, Conn.—p. 197.
Cost of Adequate Medical Service Under Health Insurance. J. A. Lapp, Chicago.—p. 201.
Medical Problems in Pennsylvania. J. B. McAlister, Harrisburg.—p. 216.
Sickness Problem and Workmen's Health Insurance. J. B. Andrews, New York.—p. 219.

the Sickness Problem. Is Social Insurance the Remedy? L. K. Frankel, New York.—p. 224.
Sedative Therapy in Genito-Urinary Infections. J. L. Laird, Philadelphia.—p. 227.

Psychobiology, Baltimore

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Methods of Studying Controlled Word Associations. M. W. Loring, Baltimore.—p. 369.
Methods of Using Balanced Magnet Chronoscopes. K. Dunlap, Baltimore.—p. 445.
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Rhode Island Medical Journal, Providence

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Advances in Surgery of Extremities During War. M. S. Danforth, Providence.—p. 1.
Child Welfare, Yesterday and To-Day. E. M. Gardiner, Providence.—p. 10.
Erythema Multiforme Following Diphtheria Antitoxin. D. L. Richardson, Providence.—p. 13.

Surgery, Gynecology and Obstetrics, Chicago

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Relation of Cancer to Prolongation of Human Life. W. J. Mayo, Rochester, Minn.—p. 22.
Surgical Treatment of Exophthalmic Goiter. G. W. Crile, Cleveland, Ohio.—p. 27.
The Acute Abdomen. J. B. Deaver, Philadelphia.—p. 30.
Empyema; Pathogenesis and Treatment. A. V. Moselewitz, New York.—p. 35.
Physician and Surgeon in the Industrial Era. O. P. Geier, Cincinnati.—p. 44.
One Hundred Cases of Injuries of Peripheral Nerves at U. S. Army General Hospital No. 11. C. H. Frazier and S. Silbert, Philadelphia.—p. 50.
Chronic Trigonitis in Female. H. E. Lindeman, New York.—p. 64.
Deeper Structural Changes Arising from Varicose Ulceration. D. H. Morris, New York.—p. 72.
Recurrent Internal Hernia Following Gastro-Enterostomy. R. C. Bryan, Richmond, Va.—p. 82.
Use of Colloid Adenocarcinoma of Bladder. S. S. Barringer, New York.—p. 86.
Use of Inguinal Herniotomy. E. P. Quian, Bismarck, N. D.—p. 88.
Improved Wire Splint for Congenital Clubfeet. A. J. Dalton, St. Joseph, Ill.—p. 92.
Methylene Blue in Diagnosis of Acute Perforating Gastric and Duodenal Ulcers. H. L. Baker, Chicago.—p. 93.
The Wight-Harloe Empyema Shield and Closed Method of Applying It. J. S. Wight, and R. Harloe, New York.—p. 94.
Capture of Uterus with Peritoneal Eneystment. S. B. Blakely, Binghamton, N. Y.—p. 95.

Surgical Treatment of Exophthalmic Goiter.—The conclusions presented by Crile as to the surgical treatment of exophthalmic goiter are based on his personal experience with 2,250 thyroidectomies of which 1,169 were for exophthalmic goiter; of the latter, 660 cases, or 56 per cent. were rejected. No patient was rejected for operation unless he was in the state of dissolution. In the last series of 331 thyroidectomies, 116, or 35 per cent. were first ligated, and no case was rejected. Among the 116 ligations there was only one death. The patient was in the early stage of dissolution and was delirious when the ligation was made. The downward course of this case was not arrested. The results of 1,169 thyroidectomies for exophthalmic goiter began with operations under ether alone, and with no special precautions. The mortality rate in these early cases was 10 per cent. After the adoption of an association-nitrous oxid-gas and local anesthesia with the anesthetization of the patient in his room—the mortality rate fluctuated between 10 and 5 per cent, until by the adoption of a new system of management the mortality rate for all goiters among the 331 thyroidectomies dropped to 0.6 per cent. This number includes one series of 206 consecutive thyroidectomies without a fatality and 182 thyroidectomies for exophthalmic goiter with two fatalities, a mortality rate of 1.1 per cent. The new system of management consisted of the adoption of nitrous oxid-oxygen, the use of local anesthesia, the multiple stage operation, the exclusion of the psychic factor, the application of the principle of carrying the operation to the patient. The operative procedures are graded according to the severity of the disease. In moderate cases the entire operation may be completed at one seance. In

more severe cases the thyroid activity is diminished by preliminary ligation with the patient in bed, under nitrous oxid-oxygen analgesia and local anesthesia. In extremely grave cases it may be necessary to diminish the thyroid activity by multiple steps—ligation of one vessel; ligation of the second vessel; partial lobectomy; complete lobectomy—allowing intervals of a month or more between these stages, the length of each interval being determined by the degree of physiologic adjustment. If, during the operation, the pulse runs up beyond the safety point, the operation is halted, the wound dressed with flavine, and the operation completed after a day or two when conditions have again become safe. In some cases, even though the thyroid has been resected, it is advisable to dress the unsutured wound with flavine and make a delayed suture in bed the following day under analgesia. In certain cases lobectomy is performed while the patient is in bed and under nitrous oxid analgesia and local anesthesia. Crile insists that psychic control of the patient on the part of the surgeon, the intern, the anesthetist, and the nurse is required throughout to diminish the intense drive. An associated regimen should be prescribed for the preoperative, interoperative and post-operative periods. The preoperative and the postoperative management are of almost equal importance to that of the operation itself. If, after the operation, the temperature becomes excessively high, with greatly increased pulse and respiration, the patient is packed promptly in ice. To avoid the effects of too sudden a withdrawal of thyroid secretion, thyroid extract is given the night before a lobectomy.

Peripheral Nerve Injuries.—The principles which governed Frazier and Silbert in dealing with their cases are summarized as follows: Liberation or neurolysis has been given preference in the absence of a complete anatomic division or a neuroma in continuity when after excising all scar tissue and laying bare the nerve sheath there is a quick response to faradism. Resection and suture are essential whenever neurolysis is contraindicated. Resection must be carried centrad and distad until healthy scar-free fasciculi are exposed. In bridging defects, the nerve transplant must not be employed until advantage has been taken of every other reasonable measure: to wit, nerve stretching, immediate or continued (as with sutures through bulbs), mobilization, transposition as of ulnar and musculospiral nerves, and, in exceptional instances, lateral implantation suture, such as implanting the ulnar or musculospiral nerves into the median. When these fail, a nerve transplant is justifiable, the autotransplant being the first choice, and homotransplant (preserved in liquid petrolatum, or 50 per cent. alcohol) the second choice. For autotransplant, the musculocutaneous or sural nerves of the leg, the radial or internal cutaneous nerves of the arm, may be selected on the basis of convenience. In nerve suture it is equally important to know what one ought not to do. In this category we include suture at a distance, the flap operation, bilateral anastomosis (as recommended by Hofmeister), and tubulization. Sharp, clean dissection, careful hemostasis, the approximation of healthy fasciculi, without undue tension, represent the tripod on which the success of nerve suture rests. Tendon transplantation should be employed when suture fails and is particularly appropriate in residual palsies of the posterior interosseous, with inability to extend wrist or fingers, and anterior tibial palsies with resulting foot drop. The after-treatment should include (a) enforced fixation for a period of from four to six weeks with gradual straightening of the limb, (b) massage and galvanism until voluntary movement returns, (c) exercises varied according to the muscles involved and with a view of sustaining the interest of the patient.

Chronic Trigonitis in Female.—Lindeman reports the favorable results he has obtained from the injection of 2 per cent. quinin and urea hydrochlorid in the treatment of these cases.

Recurrent Hernia after Gastro-Enterostomy.—In the case reported by Bryan there was a hernia of the jejunum posterior to the gastrojejunostomy. At operation the intestines were simply pulled back.

Methylene Blue in Diagnosis of Gastric Ulcer.—Baker reports four cases in which he gave the patient 3 grains of methylene blue, dissolved in an ounce of water, for the purpose of making easier the location of the ulcer. In all, ten cases have been observed where methylene blue has been used.

Rupture of Uterus; Peritoneal Encystment.—The interesting features of Blakely's case are numerous attempts (7) to produce abortion; a traumatic rupture of the uterus with extrusion of a four months' fetus into the general peritoneal cavity followed by general peritonitis; recovery from the peritoneal infection, healing of the uterine tear, encysting of fetus, formation of a vaginal fistula; removal of a large portion of the fetal skeleton with indistinguishable soft parts five months later through the vagina; ultimate recovery.

Virginia Medical Monthly, Richmond

December, 1919, 46, No. 9

Gastric and Duodenal Ulcers. C. R. Grandy, Norfolk.—p. 219.

Surgical Treatment of Gastric and Duodenal Ulcer. S. H. Watts, University.—p. 221.

*Case of Restoration of Bile Passage. J. D. Collins, Portsmouth.—p. 227.

Epidemic Lethargic Encephalitis; Etiology and Pathology. B. R. Tucker and S. W. Budd, Richmond.—p. 228.

Some Unique Facts Pertaining to the Medical Profession and the World War. B. C. Keister, Roanoke.—p. 232.

Restoration of Bile Passages.—In a case of complete obstruction of the common bile duct, Collins dissected out the tract of the fistula through the abdominal wall to the skin which remained from a previous operation. This fistulous tract became a well organized tube of connective tissue about one-quarter inch in diameter. A section of a No. 12 French soft rubber catheter was inserted into the open end of the fistulous tube for a distance of 2 inches. This was secured with one catgut stitch. Four inches of the rubber tube projected beyond the end of the fistulous tube. At a point opposite the margin of the liver a stab wound was made into the duodenum. The fistulous tube with the rubber tube projecting from its distal end was turned into the lumen of the intestine and the stab wound was closed with a pursestring suture. The intestine was then drawn up and sutured after the manner of the Witzel operation. The anastomosis was further strengthened by suturing over it a tag of omentum. The abdominal wound was closed without drainage. Recovery was quick and uneventful. The rubber tube was passed on the sixteenth day. A search through the literature disclosed only two cases where this method of repair was adopted, and both were unsuccessful.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 3, 1920, No. 3079

Gunshot Fracture of Femur. A. Bowlby.—p. 1.

*Clinical Types of Abdominal Tuberculosis. K. W. Monsarrat.—p. 5.

Sphenoidal Empyema and Epidemic Cerebrospinal Fever. D. Emberton.—p. 7.

Sterility in the Male. K. Walker.—p. 10.

Significance of Position of a "Contraction Ring" in Extreme Pelvic Contraction with Vertex Presentation. C. D. Lochrane.—p. 11.

Cases of Rhinoplasty and Cheiloplasty. R. Parker.—p. 12.

Clinical Types of Abdominal Tuberculosis.—Monsarrat discusses tuberculosis of the ileum, cecum and rectum, and cites cases to illustrate the methods of treatment. He says that when tuberculous disease, either of the ileum or large bowel, is associated with definite intestinal obstruction, operation is always necessary, and the choice lies between exclusion by anastomosis and excision. If the obstruction is acute, exclusion by anastomosis is to be preferred; if the obstruction is subacute the exact local condition must decide. A mass that is easily isolated is better removed. When such tuberculous bowel lesions are not associated with obstruction, or with an obstruction that is chronic and capable of relief by aperient, the advisability of operation will depend

on whether the bowel disease is or is not the sole demonstrable lesion in the body. If the lung is also affected it will probably be wiser to decide against operation. With regard to disease of the rectum, he knows of no actual evidence that a remedy is to be found in the establishment of an artificial anus. In one instance, this procedure added to the patient's discomfort without obvious benefit to the rectal condition. When the rectum is affected above the peritoneal reflection, and is associated with abscess, evacuation of the abscess by the intraperitoneal route is to be recommended, but except for the treatment of this complication, operation has no service to offer. Lastly, in selected cases, operation gives good results in limited tuberculous disease of the mesenteric lymph nodes. According to the extent and stage of the focus, this will take the form either of enucleation or of excision of the mesentery involved, together with the associated portion of intestine.

Indian Journal of Medical Research, Calcutta

July, 1919, 7, No. 1

*Occurrence of Intestinal Protozoa in British and Indian Troops in Mesopotamia. C. L. Boulenger.—p. 1.

*Coma as a Cause of Death in Diabetes. D. McCay.—p. 22.

*Treatment of Diabetes in India. D. McCay.—p. 81.

*Pathology of Experimental Rabies. J. W. Cornwall.—p. 148.

*Pharmacodynamics of Quinin. II. Some Effects of Quinin on Kidneys, Suprenals and Spleen of Healthy Rabbits. J. W. Cornwall.—p. 160.

*Pathogenesis of Deficiency Diseases. No. III. Influence of Dietaries Deficient in Accessory Food Factors on Intestine. R. McCarrison.—p. 167.

*Influence of Scorbutic Diet on Suprenals. IV. R. McCarrison.—p. 188.

*Monkey Plasmodium (*P. Semuopithecii*); Experiments in Malaria. R. Knowles.—p. 195.

*Association of Bacillus of Hoffmann with Diphtheria in India. R. Knowles.—p. 203.

*Cultural Methods of Gonococcus. G. C. Maitra.—p. 219.

Studies in Ankylostomiasis: A Criticism. C. Lane.—p. 223.

Technic of Levitation Methods. C. Lane.—p. 228.

*Presence of Acid-Fast Bacilli in Blood of Lepers. K. R. K. Iyengar.—p. 235.

Standardization of Bacterial Suspensions. H. C. Brown.—p. 238.

Possible Spread of Schistosomiasis in India. S. Kemp and F. H. Gravely.—p. 251.

Intestinal Protozoa in Troops in Mesopotamia.—The total number of persons examined by Boulenger was 1,378. The cases consisted of acute dysenteries (i. e., with blood and mucus in the stools), colitis and diarrhea, as well as a number of convalescents passing more or less normal stools. The following parasites were found: *Endameba dysenterica* was found in 201 cases; *Endameba coli* in 264 cases; *Giardia (Lamblia) intestinalis* in 133 cases; *Trichomonas intestinalis* in 111 cases; *Chilomastix (tetramitus) mesnili* in sixty-eight cases; and *Coccidun (isospora)* in eight cases. Only one outbreak of bilharziosis occurred among the troops in Mesopotamia up to August, 1918, seventy-one of the Indian personnel of a general hospital having become infected with *Schistosoma hematobium*. The results of an investigation of the Arab population of Mesopotamia showed that the disease was common throughout the country, both in the Tigris and the Euphrates districts: the average infection by *Schistosoma hematobium* was approximately 20 per cent. of the male Arabs examined. The mollusk *Bullinus contortus*, known to be the second host of the parasite in Egypt, was found in Mesopotamia, but does not seem to be of common occurrence in that country.

Coma as Cause of Death in Diabetes.—An analysis of the blood was made by McCay in practically all cases of diabetes, with or without albuminuria, all cases of kidney diseases with or without uremia, and also in a large number of perfectly normal individuals. The absence of any well marked signs of acidosis, either during the course and treatment of diabetes, or even in the terminal coma, raised the authors' suspicions that the coma, as a terminal phenomenon in the type of diabetes prevalent in India, was not identical with diabetic comas as seen in Europe. Other considerations pointed to the probability of the coma being uremic. He could find no essential difference between the chemical condition of the blood in patients with uremia and in patients dying in coma who had been suffering from diabetes, except for the presence of hyperglycemia in the latter, and this, he

ys, can hardly be regarded as a cause of coma. Again, the outstanding feature of these dying diabetics was the great increase in the nonprotein nitrogen of the blood. Acetone, urea, phosphates, etc., may be increased to a greater or less extent, but the signs of acidosis are far too slight to enable one to ascribe the coma to any ill effects caused by a meager retention of acetone bodies in the blood. McCay, therefore, arrives at the conclusion that the functional derangement of the kidney that accompanies diabetes is the all important factor in producing the necessary conditions of the blood that lead to coma and death.

Treatment of Diabetes in India.—The treatment of diabetes in India, McCay says, resolves itself into the treatment of diabetes levis, or the milder forms of the disease met with in European countries. On the whole, it is even less serious and less fatal condition than the ordinary diabetes levis of Europe as it does not present the same tendency to progress or to become complicated with severe acidosis and diabetic coma. McCay has not met with a single case, among the hundreds treated or seen by him, in which proper dietetic measures failed to clear the urine of sugar and keep it clear.

Pathology of Experimental Rabies.—Owing to the growth of the rabies organism in the central nervous system, Cornwall claims that irritative stimuli pass along the splanchnic nerves to the suprarenals and liver and give rise to the discharge into the blood stream of an excess of sugar. There may or may not be an accompanying excessive secretion of epinephrin. Much damage is caused both to the kidneys and to the suprarenals by toxic agents in the blood derived from the growth of the rabies organism in the central nervous system.

Pharmacodynamics of Quinin.—Cornwall presents evidence that quinin administered to healthy rabbits intravenously and intramuscularly over a period of eight or nine months causes damage to the cellular elements of the suprarenals and kidneys. There is also evidence that the rate of disintegration of red blood cells in the spleen is increased.

Pathogenesis of Deficiency Disease.—Dietaries deficient in accessory food factors McCarrison found give rise in pigeons and in guinea-pigs to congestive and atrophic changes in the coats of the bowel, to lesions of its neuromuscular mechanism, to impairment of its digestive and assimilative functions, and to failure of its protective resources against infection. The functional perfection of the gastro-intestinal tract is dependent in considerable measure on the adequate provision of accessory food factors derived from fresh fruit and vegetables. Certain gastro-intestinal disorders in the human subject—of which three examples are referred to—may owe their origin to the long continued subminimal supply of accessory food factors.

Influence of Scurvy Diet on Suprarenals.—According to McCarrison, a scorbutic diet gives rise in guinea-pig to (1) an increase in size and in weight of the suprarenals; (2) a marked diminution in the epinephrin content of these organs; (3) hemorrhagic infiltration of the suprarenals, usually circumscribed in extent and situated around the periphery of the suprarenal cortex; and to (4) degenerative changes in the cellular elements of the suprarenal cortex and medulla. The impairment of suprarenal function occurs before clinical evidences of scurvy manifest themselves.

Hoffmann Bacillus and Diphtheria in India.—The bacillus of Hoffmann was found by Knowles in 30 per cent. of cases of diphtheria; in 11 per cent. of diphtheria carriers, showing the true Klebs-Loeffler bacillus; in only 0.4 per cent. of healthy throats among European children during an epidemic; and in only 5 per cent. of the throats of 103 Indians in the absence of any epidemic. The bacillus of Hoffmann as met with (a) before, (b) with and (c) after the presence of the true Klebs-Loeffler bacillus in the same throat. While the two organisms appear to be entirely different as regards morphology, cultural reactions and pathogenicity to animals, yet it is suggested by Knowles that there is a symbiotic relationship between them that the rarity of the bacillus of Hoffmann in India may be associated with the

relative rarity of diphtheria in epidemic form. Reverse conditions hold in temperate climates.

Cultivation of Gonococcus.—Maitra claims that the gonococcus is best cultivated under reduced oxygen tension. Primary cultures grow equally well on Loeffler's blood serum or urine agar with egg yolk provided a fair amount of purulent exudate is used. Subcultures grow better on Loeffler's blood serum. Bacterial yield can be augmented by adding fresh serum, preferably human serum. Human serum, heated to destroy its bactericidal properties, gives no advantage over fresh serum in promoting growth of gonococcus: probably the vitamin content is destroyed to some extent by heating.

Acid-Fast Bacilli in Blood of Lepers.—Acid-fast bacilli, agreeing morphologically with the leprosy bacillus, were demonstrated by Iyengar in a considerable proportion (7) of blood films made from forty lepers. The presumption is that these are present in the blood itself, although there remains the possibility of their having been derived in the process of venipuncture. The skin, however, at the site of puncture showed no sign of leprosy. The possibility of the presence of acid-fast bacilli in the reagents used has been excluded by the use of the blood of healthy persons as controls. Iyengar suggests that examination of the blood may be used with advantage as a routine method of diagnosis in cases of suspected leprosy. It is possible that this examination may sometimes afford evidence of the affection when the ordinary method of examination has failed.

Indian Medical Gazette, Calcutta

December, 1919, 14, No. 12

- Recent Researches on Hookworm Infection in Indonesia. S. T. Darling.—p. 446.
Surgical Problems and Difficulties in the Tropics. D. J. Harries.—p. 453.
Tetanus. A. J. Noronha.—p. 455.
Generalized Vaccina in Burma. S. Rama Iyer.—p. 459.
Case of Ruptured Abdominal Wall. Gokulananda De.—p. 460.

Japan Medical World, Tokyo

Dec. 14, 1919, No. 313

- Physiologic and Pathologic Examination of Nerves and Muscles of Domestic Fowl Suffering from So-Called "Polished Rice Disease." K. Paguchi.
Action of Epinephrin Against Glycogen Ferment and Diastase. H. Maruyama.
By-Effects of Mercurials in Treatment of Syphilis, Especially Appearance of Albumin and Casts in Urine. S. Ishiware.

Dec. 21, 1919, No. 314.

- Chemically Separated Human Serum Albuminous Substances and Their Precipitation Reaction. K. Taguchi.
Antipyretics that Can Be Used in Treatment of Phthisis. H. Uchida.

Journal of Mental Science, London

October, 1919, 65, No. 271

- Psychiatry One Hundred Years Ago: Problems of To-Day. B. Picre.—p. 219.
*Goiter and Psychoses. N. R. Phillips.—p. 235
*Cytology of Cerebrospinal Fluid in Mental Disease. G. L. Brunton.—p. 249.

Goiter and Psychoses.—That the rôle played by goiter in the psychoses is more extended than is indicated, is the theme of Phillips' paper. Of 200 patients examined by him, the actual proportion of goiter was 12 per cent. No less than seventeen of these patients suffered from manic-depressive insanity or from the melancholia of involution, i. e., 70 per cent. of the whole number. Of the remaining seven, four were cases of dementia praecox and three were cases of paranoia. Phillips believes that those cases show that the nature of the psychosis is, in some degree, determined by the form of the functional disturbance of the thyroid gland, e. g., hyperthyroidism is usually associated with states of excitement, agitation, etc. (manic-depressive insanity), whereas hypothyroidism is more often associated with states of apathy and indifference (dementia praecox).

Cerebrospinal Fluid in Mental Disease.—In the examination of the cerebrospinal fluid as an aid in the diagnosis of mental disease, Brunton finds that Alzheimer's method is the best for the cytologic examination. The cells of the great-

est diagnostic importance are the plasma cell, the phagocytic and the endothelial cell, and the lymphocyte in excess. A high cell count, with an excess of lymphocytes together with the presence of plasma cells, is strong evidence of a parasymphilitic lesion.

Journal of State Medicine, London

December, 1919, 27, No. 12

- Predisposing Causes of Pulmonary Tuberculosis. L. S. T. Burrell.—p. 353.
The Welsh Sanitary Section: Its Work on Active Service. D. L. Williams.—p. 361.

Journal of Tropical Medicine and Hygiene, London

Dec 15, 1919, 22, No. 24

- Cases of Elephantiasis of Scrotum, and Others. W. E. Masters.—p. 221.

Lancet, London

Jan. 3, 1920, 1, No. 5027

- Surgery of Heart. C. Ballance.—p. 1.
Aims of Welsh National Medical School. E. L. Collis.—p. 6.
*Serum Diagnosis of Syphilis. F. C. Lewis.—p. 11.
*German Bullet Embolus. H. J. B. Fry.—p. 13.
*Malaria and Insanity. A. T. W. Forrester.—p. 16.
Bone Deformities of Renal Dwarfism. H. Barber.—p. 18.
*Improved Technic for Staining Sputum for Tubercle Bacilli. A. Distaso.—p. 19.
Resection of Rectum for Cancer. P. Lockhart-Mummery.—p. 20.
*Direct Infection in Tuberculosis. E. Ward.—p. 22.
India Rubber Wound Drains. A. Edmunds.—p. 25.
Actual Cautery in Gastric Ulcer. J. Kirkland.—p. 26.
Gunshot Wound of Larynx with Impacted Foreign Body. J. Walker Wood.—p. 27.
*Enteric Cyst Causing Intussusception. C. W. G. Bryan.—p. 28.

Standardizing Serum Diagnosis of Syphilis.—The method suggested by Lewis for the standardization of red blood cells and complement is as follows: The blood is collected, defibrinated, washed and deposited in the usual manner. The deposited red cells are then mixed with three or four times their volume of physiologic sodium chlorid solution. A 25 or 50 gm. specific gravity flask is weighed accurately (a) dry and (b) filled with physiologic sodium chlorid solution. This solution is then thrown out and replaced with the heavy suspension of red cells and is reweighed. In these weighings the usual precautions are taken, such as the accurate filling of the flask, and the weights are taken at 60 F. This latter is accomplished by immersing the specific gravity bottle, solution and suspension in a water bath at 60 F. The relative weight of the red blood cell suspension against physiologic sodium chlorid solution at a constant temperature is thus calculated, and this can be utilized as a basis for the further dilution of the suspension. This method is not a true specific gravity method. Lewis has found that a relative volume weight of 1.0040 is a suitable dilution for use, and that the minimum hemolytic dose of complement based on such a suspension of red blood cells gives a good range of results in weak positive, positive and strongly positive cases.

A German Bullet Embolus.—This case is recorded by Fry as a remarkable instance of the migration of a rifle bullet in the venous blood stream. There was a small oval wound of entry one-half inch below the left anterior superior iliac spine. The bullet entered the vascular system by gouging the posterior aspect of the left external iliac artery and penetrating into the lumen of the left internal iliac vein, causing an arteriovenous aneurysm of these vessels. From this position the bullet was carried up the common iliac vein and the inferior vena cava. It passed through the chambers of the right side of the heart, through the pulmonary valve into the left branch of the pulmonary artery where it impacted as an embolus in one of the branches supplying the lower lobe of the left lung, thereby causing two infarcts in this lobe. For a week, the patient's general condition remained good. Ten days after its receipt the wound was almost healed, but gangrene of the left leg was complete and the leg was therefore amputated below the knee. Finally, the patient became delirious and he died in coma, one month after the receipt of the wound. The case is discussed in detail.

Malaria and Insanity.—Forrester states that in Macedonia malaria was reckoned as the biggest factor in the causation of mental disease among the troops. Indeed, the admission rate of the latter was almost an exact parallel of the malaria curve. Altogether, during ten months, there were 116 admissions to the mental department, each patient giving a positive malarial history. In thirty-two cases the mental symptoms were in association with an actual attack of malaria, and in eighty-seven cases the mental symptoms were the result of repeated attacks.

Improved Technic for Staining Sputum for Tubercle Bacilli.—It is claimed by Distaso that his method overcomes some of the difficulties and raises the percentage of positive results by at least 25 per cent., besides affording a film which is restful to the eye and easy of manipulation. It takes less time in execution than the ordinary method. The method allows for twice the usual amount of sputum, secures the easy solution of the tough mucopurulent pellets, and gives an even film and a very transparent counterstain. A thick portion of the sputum or several mucopurulent pellets are selected and transferred to the slide. One drop of 5 per cent. sodium hydroxid solution is added and the sputum emulsified, with the aid of heat, into a transparent gelatinous mass, which is spread evenly and set to dry in the incubator. When perfectly dry, it is immersed in fuchsin, warmed to incubator temperature, and allowed to remain in the incubator for fifteen minutes. It is then washed in equal parts of Esbach solution and water, decolorized with 25 per cent. nitric acid until faintly pink, and then washed in water, in 60 per cent. alcohol, and then again in water. The counterstain used is malachite green one part of saturated alcoholic solution in nineteen parts of water, for from thirty to sixty seconds, and the slide is rinsed and dried.

Direct Infection in Tuberculosis.—As bearing on the subject under discussion Ward cites the case of a girl, aged 20, living on an isolated farm, who developed acute tuberculosis and died within three months after the onset of the disease. Taking a history in the usual way, there did not seem to be any likelihood that she had been in contact with another case of tuberculosis, but on examining, among others, a brother, who seemed breathless, and an aunt staying in the house, who had a cough, both showed physical signs of pulmonary tuberculosis. The aunt's sputum contained tubercle bacilli; the brother refused to send his sputum away for fear the result might interfere with his dairy work. Apart from a home examination, Ward says, these two cases would never have been discovered.

Enteric Cyst Causing Intussusception.—In Bryan's case, the cyst was situated in the antimesenteric wall of the ileum close to the ileocecal valve. It filled the lumen of the intestine, two thirds being in the ileum and one third in the cecum. The intussusception occurred in the terminal portion of the ileum. Two operations were performed, owing to the condition of the patient during the first operation. This was terminated hastily with a later anastomosis between the cecum and ileum, the cyst having been punctured and emptied. At the second operation the cecum, six inches of ileum and the lateral anastomosis performed at the first operation together with the cyst, were excised and an end to end anastomosis was made between the colon and ileum. The patient, aged 6 years, made a complete recovery.

Practitioner, London

January, 1920, 104, No. 1

- Grave Familial Jaundice of Newly Born. H. Rolleston.—p. 1.
Medicolegal Notes. J. Collie.—p. 8.
Venereal Diseases as We See Them To-Day. J. E. R. McDonagh.—p. 14.
Case of Intramine Dermatitis. A. R. Fraser.—p. 40.
Four Cases of Foreign Body in Esophagus. H. L. Whale.—p. 42.
Sycosis Barbae. H. C. Semon.—p. 48.
Varieties and Treatment of Retroversion of Uterus. A. A. Bourne.—p. 59.
*An Undiagnosed Disease Probably of Infectious Nature. C. F. O. White.—p. 70.
Method of Draining the Stomach when the Pylorus is Not Obstructed. D. M. Macleod.—p. 73.

Undiagnosed Disease.—The four patients seen by White presented the same symptoms, slight elevation of tempera-

ture, never exceeding 100 F. and of only one day's duration; a rash consisting of flat circular papules, rarely vesicles or blebs, not fading entirely on pressure, the size of a pea and slightly larger, first most pronounced on the wrist and forearms and then beginning to appear on the chest, thighs and legs. Later, White saw many more such cases, from six to eighteen every day. The onset was usually sudden, with severe frontal headache, giddiness or actual fainting while on parade, the patients all being soldiers on duty in India, and members of a recently arrived English regiment. Severe pruritus was a prominent symptom in about one half the cases. White was unable to arrive at a diagnosis.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

November, 1919, 8, No. 11

- *Preferable Incisions for Laparotomies. E. Rouffart.—p. 577.
- *Radium Treatment of Cancer of Uterine Cervix. P. Degrais.—p. 623.

The Laparotomy Incision.—Rouffart devotes nearly fifty pages to arguments for and against the various incisions in vogue, describing nine longitudinal or slanting incisions and three transverse methods. In his compilation of 1,506 new cases of the transverse incision, eventration developed only in 0.33 per cent. and in these cases there had been suppuration in the abdominal wall in all but one. Suture of a median longitudinal incision should always be reenforced with muscle tissue from the rectus. Other longitudinal incisions compel section of nerves to such an extent that the nutrition of the tissues is seriously compromised. All his arguments sustain the superiority of the transverse incision whenever practicable for gynecologic and obstetric laparotomies.

Radium Treatment of Cancer of Uterine Cervix.—Degrais declares that curietherapy, as he calls it, is emerging from the empiric stage. When surgery is impotent, then radium has a unique rôle, also in preparing cancers for operation and as a sequel to operation. He uses doses ranging from 27 to 200 millicuries, with filters of from $\frac{3}{10}$ mm. platinum to 1 mm. silver, with exposures of from forty-eight to seventy-two hours. He gives no figures, but adds that there is scarcely a single case in which some benefit from the radium was not apparent.

Bulletin Médical, Paris

Dec. 6, 1919, 33, No. 54

- *Jaundice in Secondary Stage of Syphilis. L. Giroux.—p. 739.

Jaundice in Secondary Stage of Syphilis.—Giroux remarks that testing the fragility of the blood corpuscles explains the hemolytic origin of the jaundice, anemia and enlarged spleen, without disturbance in the general health, which are sometimes observed in the secondary phase of syphilis. The jaundice may be due to hemolysins in the blood, but in either case the disturbance is mild and subsides in a few weeks or months, as also the jaundice after arsphenamin treatment. The nature of the latter is being disputed just now, as also the indications for treatment. Some advise to suspend, others to push the arsphenamin when jaundice develops. Sicard says that an increase in the urea content of the blood under arsphenamin should warn of impending jaundice.

Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 21, 1919, 43, No. 33

- *Muscle Signs with Pulmonary Tuberculosis. P. Halbron and others. p. 973; Idem. P. Sainton.—p. 980.
- *Necropsy after Induced Pneumothorax. R. Burnand.—p. 983.
- Cancer of Face Simulating Actinomycosis. J. Nicolas, M. Favre and Massia.—p. 988.
- Corrugated Senile Skin in Child of Two. Variot and Cailliau.—p. 989.
- Signs of Latent Tracheobronchial Glandular Disease. P. F. Armand-Delille.—p. 995.

Muscle Signs of Pulmonary Tuberculosis.—Halbron and his co-workers examined 157 patients and fifty-two healthy controls for the abrupt local contraction of the trapezius and other muscles when the margin was suddenly pinched. This has been cited as a sign of a chronic tuberculous process in the lung on that side. The contraction across

the muscle feels like a cord, and Lévy even contends that the absence of this *corde musculaire* or myo-edema excludes tuberculosis, or at least an active process. The myotonic reaction in the trapezius occurs normally on both sides; it is significant only when it is exaggerated on one side. The reflexes on percussion of the deltoid, pectoralis and supraspinatus are more pronounced on the diseased side. These muscle signs were pronounced in from 81 to 96 per cent. of the tuberculous examined, usually the active cases. The findings were positive only in 10 per cent. of the presumably healthy controls. These muscle signs are especially useful in dubious cases, and in suggesting a tuberculous origin for emphysema and chronic bronchitis. The reaction does not always correspond to the side with the most extensive lesions, but to the most active. Sainton greases with petrolatum the thumb and forefinger for pinching the muscle, and states that the myo-edema never lasts for more than eight to twelve seconds. It occurs most pronounced and persistent in typhoid, in chronic pulmonary tuberculosis, and in lead poisoning, and is a sign of impregnation of the organism with toxins. Lion reported positive findings even with intoxication from stenosis of the pylorus.

Necropsy after Induced Pneumothorax.—Necropsy showed the complete cure of the tuberculous cavity in the lung treated by induced pneumothorax for thirty months. Death was due to intercurrent influenzal pneumonia in the other lung. Slight tuberculous lesions in the latter had healed likewise. The healed tuberculous lesions were of the torpid, cheesy type. Burnand's experience indicates that the minimum period for effectual collapse therapy in advanced cases is two or three years. He adds further that fourteen of his twenty pneumothorax patients passed unscathed through intercurrent influenza; six died.

Journal de Chirurgie, Paris

November, 1919, 15, No. 4

- *Pseudarthrosis of the Forearm. C. Dujarier.—p. 333.
- Treatment of Compound Fracture of Lower End of Femur. G. Picot.—p. 351.
- Treatment of Arthritis of the Ankle from War Wounds. P. Chutro.—p. 364.
- *Mechanical Correction of Fractures. R. Bonneau.—p. 371.

Treatment of Pseudarthrosis of Forearm.—Dujarier obtained consolidation in 32 of his 36 cases of pseudarthrosis of the radius; in 16 of 19 of the ulna, and in all of the 15 cases in which both bones were involved, that is, a total of 90 per cent. successes. Sixteen illustrations show his technic. A bone and periosteum graft from the tibia was used to bridge large gaps. In 3 cases he cut the graft longer than the gap but the part that extended beyond the gap was cut thin and thus these ends embraced the stump, while the stumps rested on the thick cylinder between. In 3 cases the graft had been taken from the front of the tibia, and the tibia fractured later. He now chisels off the flap always from the internal aspect of the tibia, and sometimes cuts two flaps, a shallow and a deep one.

Correction of Displacement of Fractured Bones.—Bonneau's illustrations show his method of pulling up one stump into place with wire, and pushing the other stump down into place with a metal rod, both fastened to a standard bridging the lesion.

Paris Médical

Dec. 20, 1919, 9, No. 51

- *Roentgen Findings with Gastric Linitis. P. Carnot.—p. 481.
- Severe Chlorotic Form of Trichocephalasis. G. Mouriquand and Bertoye.—p. 486.
- Short-Circuiting the Intestines for Chronic Stasis. V. Pauchet.—p. 489.

Gastric Linitis.—The symptoms may include stenosis of the cardia or insufficiency of the pylorus, or both, in addition to the rigidity of the stomach wall and the shrunken size of the organ.

Presse Médicale, Paris

Dec. 24, 1919, 27, No. 79

- *Leg Sign of Pyramidal Tract Disease. J. A. Barré.—p. 793.
- *Complementary Factors of Growth, Etc. R. Thiébaud.—p. 795.

Pyramidal Sign.—Barré describes a leg sign of derangement in the pyramidal tracts which is more constant and instructive, he says, than any other sign known to date. The patient lies face down on bed or table, and the legs are flexed at the knee. He is told to hold the legs in this vertical position, but he is unable to do this in case of paresis from pyramidal disturbance, and the leg gradually sinks down more or less, although the muscles of the thigh can be seen contracting in order to keep the leg upright. This "leg maneuver" is negative with paralysis of hysteric or peripheral origin, and even with cerebellar disease, if the pyramidal tracts are intact. All other signs of pyramidal lesions are indirect, but this is direct, and the disappearance of the sign in the course of paraplegia indicates the return of volitional control.

Complementary Factors of Growth.—Thiébaud applies this term to what Collum and Davis call the secondary factors of growth and balance, and theorizes that they are indispensable to the action of diastases. The latter depends on the special distribution of the electrons on the surface of the colloidal substances. When the complementary factors are lacking, the molecular constitution of the colloidal mediums in which the diastases work becomes so modified that the diastases are unable to perform their specific function.

Revue Médicale de la Suisse Romande, Geneva

July, 1919, **39**, No. 7

- The Organized Fight Against Venereal Diseases. M. Muret.—p. 309.
Influenza with Pulmonary Tuberculosis. R. Burnand.—p. 315.
*Sterilization by Roentgen Exposures of Ovaries. R. Guillermin. p. 326.
Cure of Tetanus under Chloral and Sodium Persulphate. T. Reh.—p. 337.

Sterilization by Roentgen Exposures of the Ovaries.—Guillermin declares that exposures to the roentgen rays form the simplest and least harmful means for arresting ovarian functioning in women with pulmonary tuberculosis. Even menstruation may have a decidedly unfavorable action on tuberculosis, inducing congestion and whipping up hemoptysis, so that there is every reason to suspend the functioning of the ovaries in such cases, to say nothing of the menace from a pregnancy. Bezançon long ago called attention to "these tuberculous women killed by their menstrual periods." In two cases he suppressed menstruation by fourteen and by four exposures. In the first case the menopause was complete; in the other there was merely arrest of menstruation, but this put an end to the monthly periods of fever and the recurring congestion, and this patient soon considered herself completely cured. The condition of the lungs in the other case also has materially improved.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 15, 1919, **40**, No. 39

- Treatment of Epidemic Meningitis. L. Nelli.—p. 377.

May 18, 1919, **40**, No. 40

- *Chest-Head Percussion Sign. P. Busacchi.—p. 385.
*Resection of Intestine for Obstetric Injury. E. Cartolari.—p. 386.

Chest-Head Percussion Sign.—Busacchi applies his left hand flat to the parietal region of the subject seated with trunk bare and head bent forward. He then taps lightly with the percussion hammer on the posterior wall of the thorax. The shock from the light blow of the hammer is felt by the palm held against the head. He calls this the thoracocephalic phenomenon, and describes the characteristic modifications in it with pleurisy or pneumonia, or other conditions impeding transmission of the vibrations.

Obstetric Injury During Embryotomy.—After embryotomy on a dead seven-months fetus, a loop of intestine appeared at the vulva, perforated at several points. It sagged through the lacerated posterior fornix, and the uterus was likewise torn. A laparotomy showed that a long stretch of bowel had been torn from its mesentery, and Cartolari resected 2.3 meters of the small intestine, joining the ileum to the cecum after vaginal hysterectomy. Recovery was prompt and uneventful.

Pediatria, Naples

December, 1919, **27**, No. 12

- *Diphtheria of Nose and Ear in Infant. L. Spolverini.—p. 785.
*Congenital Cysts in Neck. C. Romano.—p. 790.
Results of Artificial Feeding at Well Baby Clinic. A. Borrino.—p. 805.

Diphtheria of Nose and Throat in Young Infant.—The infant was only 30 days old, and the coryza and otitis seemed amply explained by the syphilis of the parents. The mother's statement that the discharge from the nose had been mixed with blood and had kept up for ten days, worse at night, led to bacteriologic examination. This revealed diphtheria bacilli in both the nose and ear secretions. No case of diphtheria was known in the environment. Spolverini comments that this case suggests that chronic otitis media in young infants may be the work of diphtheria bacilli more often than hitherto suspected. There was nothing about the otitis in this case to suggest the diphtheric origin.

Congenital Cysts of the Neck.—Romano gives the details of six cases in which he operated. Three of the patients were young adults, the dermoid cyst first becoming manifest at 8, 10 and 25, and gradually increasing in size. In the three children the cysts were serous and multilocular, and they had increased in size slowly from a small bunch noted early in two of the cases. The cysts in the third child formed a mass on one side of the neck as large as the head. The infant was only 10 days old when Romano aspirated the contents of each of the six cysts forming the mass. The fluid returned, requiring repeated aspiration, and finally some of the cysts supplicated. Aspiration of the contents and irrigation with a weak solution of tincture of iodine finally completed the cure, and by the time the child was 4 months old the neck was symmetrical in aspect except for the series of small scars. In the boy of 12 the multilocular cyst was not very large and it was easily enucleated, but in the child of 2 the cyst mass was larger than its head, and was suppurating when first seen. Adhesions hampered the operation, and success was realized only after repeated evacuation, drainage and disinfection of the cavity and fistula. If the cysts do not interfere with breathing and eating, he advises to postpone the intervention until the child is a few years old.

Policlinico, Rome

November 9, 1919, **26**, No. 45

- *Atropin Test in Diagnosis. L. Siciliano.—p. 1317.
Hexamethylenamin in Typhus Fever. B. Cogliolina.—p. 1319.
Syphilis, Eugenics and War in Relation to Preventive Medicine. F. De Napoli.—p. 1322.
Primary Tuberculosis of Kidney: Nephrectomy. C. Solina.—p. 1335.
Two-Way Irrigator for the Bladder. E. Pirondini.—p. 1338.
Local Treatment of Anthrax. G. Conforti.—p. 1339.

Nov. 16, 1919, **26**, No. 46

- Pathogenesis and Treatment of Acetone Intoxication in Children. E. Modigliani.—p. 1349.
Medicosocial Lessons from the War. G. Breccia.—p. 1365.

Diagnostic Significance of Pupil Reaction to Atropin.—Siciliano explains how instillation of atropin in the eye throws light on the state of the general sympathetic system and muscle tone. The various elements of the dilatation of the pupil: the maximal dilatation, the difference in the lumen before and after, the duration of the effect, the rapidity with which it subsides, and the curve of the subsidence—all these may differ with varying conditions in the sympathetic system, etc., and the charted findings have diagnostic significance.

Riforma Medica, Naples

July 12, 1919, **35**, No. 28

- *Echinococcus Cysts of the Spleen. A. Cardarelli.—p. 565.
*Diffuse Phlegmonous Gastritis. R. Secchi.—p. 569.
*Hyperexcitability of Muscles in Tuberculosis. P. Verrienti.—p. 571.
Present Status of Typhus Fever. A. Lustig.—p. 573.
*The Negri and Lentz Bodies in Rabies. R. Giurato.—p. 577.

Hydatid Cyst of the Spleen.—In the case described, a dull ache and occasional violent pains in the left flank were explained by an elastic tumor beneath the costal arch. Cardarelli put one hand on the back, the other hand on the front, over the tumor, and pushed suddenly, from one hand to the other and back again. He has always noticed that

when the tumor seems to show the movement from the front hand more, then the tumor is in or near the spleen, while it is in or near the kidney if the movement is transmitted better from the rear. This sign pointed to the spleen in this case, and the good general condition during the eighteen months, the absence of fever, of urinary and all other functional disturbances, and the fact that the descending colon lay to one side of the tumor, confirmed this assumption, and suggested a hydatid cyst. He has witnessed four cases of severe by-effects from exploratory puncture with a Pravaz needle, one proving fatal, consequently he punctured with an aspirating apparatus, without wasting time on medical measures. The fluid showed an active cyst, but there was 1 gm. and more of albumin in the 800 c.c of fluid. He accepts this as a sign that the cyst is dying, and will continue this aspirating treatment, ready to operate at need. In another case, aspiration once a month for a year cured completely, and the cyst has never returned. But as a rule he advises surgical intervention if the cyst returns.

Diffuse Phlegmonous Gastritis.—The man of 39 died the seventh day from the first sudden onset of stomach symptoms, violent pain and vomiting, soon accompanied by fever and chills. The vomiting stopped the fourth day, and diarrhea developed. Pus and epithelial cells were found in the vomit; the stomach region was tender, and the man lay in bed bent over forward. Necropsy confirmed the diffuse phlegmonous gastritis with streptococci. Surgical intervention should be considered in the circumscribed form, and Mikulicz reported a cure in one diffuse case.

Muscle Signs in Tuberculosis.—Verrienti describes the hyperexcitability of the muscles impregnated with the tuberculous toxins. It can be rendered manifest even early in the disease by light finger-finger percussion of a muscle or tendon, which can then be felt contracting under the fingers. Sometimes a group of muscles contract and lift the scapula, or twist the arm, etc. The rise in temperature after physical exertion is probably from absorption of the toxins liberated by the muscles during the exercise. The heart muscle and the fibers in the vessels feel the toxic effect like other muscles.

The Negri and the Lentz Bodies in Rabies.—Giurato states that recent research has confirmed anew that these bodies are not parasites but only products of cell reaction.

Anales de la Facultad de Medicina, Montevideo

September-October, 1919, 4, No. 9-10

- *Echinococcus Disease in Cattle. J. Llambías.—p. 585.
- *Bone Implants in Tuberculous Bone and Joint Disease. C. Robertson Lavalle.—p. 599.
- *Early Operation for Gastric and Duodenal Ulcer. H. García Lagos.—p. 609.
- *Adenoids and Tonsils in Children. P. J. Martino.—p. 627.
- Partial Epilepsy in Child. W. Piaggio Garzón.—p. 692.
- The Deep Posterior Aponeurosis of the Leg. R. Bastos Peltzer.—p. 698.

Echinococcus Disease in Cattle.—Llambías describes with illustrations a multilobular echinococcosis he has been studying in some cattle in Argentina.

Bone Implants in Tuberculous Joints.—See abstract below.

Early Excision of Gastric and Duodenal Ulcers.—García has had 59 operative cases under long surveillance out of the 683 cases of gastric ulcer he has treated in the last ten years. He has gradually become convinced that early operative intervention is the only treatment for cases in which there have been two or three attacks. If the crises are very severe or occur often, it should not be delayed. In old cases, gastro-enterostomy is all that can be done, but the surgery of tomorrow, he reiterates, will be early excision of the ulcer. His 59 patients had been suffering for many years, and there were complications in 5 (fatal in 4), but all the others were cured by the gastro-enterostomy except 2 with fatal pneumonia or embolism, one with peptic ulcer, and one with cancer later. In 26 of the 59 cases the ulcer was in the duodenum.

Adenoids and Tonsils.—Martino states that tonsillectomy in the period 1900 to 1910 was very seldom followed by grave operative complications, but since then the literature shows that the number of cases of severe postoperative hemor-

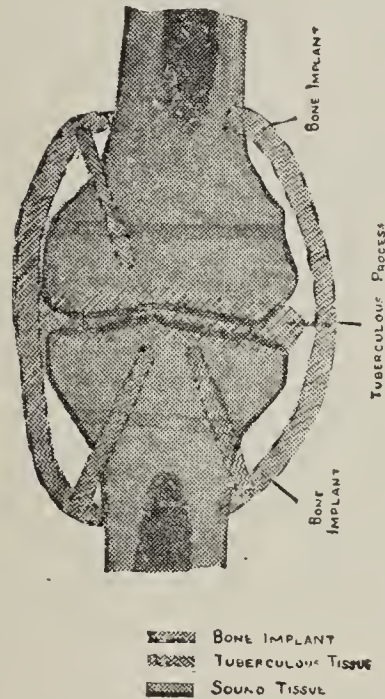
rhage and death has been very large, both in adults and in children, as the operations have become more radical. He contends that for physiologic reasons, as well as on account of the operative dangers, tonsillectomy should not be done on children; the infected crypts should be emptied and disinfected. He insists that the actual cautery should never be used, as this obliterates the outlet to the crypts.

Anales del Inst. Modelo de Clín. Méd., Buenos Aires

January-December, 1919, 4

- New Remedies for Habitual Constipation. Fernández Martínez.—p. 1.
- *Bone Implants in Treatment of Tuberculous Joints. C. Robertson Lavalle.—p. 8.
- Clinical Forms of Cholelithiasis. L. Agote.—p. 17.
- *Serologic Test for Suppuration. I. L. Ymaz Apphatie.—p. 31.
- *Radioscopy of the Stomach. E. V. Merlo.—p. 46.
- Pathogenesis of Congenital Syphilis. J. C. Navarro.—p. 80.
- McDonagh's Works on Syphilis. C. Pillado Matheu.—p. 90.
- The Cilia of the Epithelium in Cutaneous Tumors. P. Rojas.—p. 110.
- *Displaced Sternum Sign with Thoracic Tumors. R. Novaro.—p. 134.
- The Wassermann Reaction Outside of Syphilis. E. Lorentz.—p. 153.
- Cretinism from Inherited Syphilis. R. Novaro and J. Ortuño González.—p. 173.
- *Vacuum Drainage of the Chest. A. Galíndez.—p. 177.
- *To Induce Crystallization of Hemoglobin. J. Lacoste.—p. 189.
- Diffuse Sclerosis of the Brain. L. Merzbacher.—p. 201.
- *Defensive Ferments. H. Damianovich.—p. 210.
- *Suppurating Hydatid Cysts in Liver. H. J. Petty, Jr.—p. 217.
- Gastric Chemistry with Cholelithiasis. R. Novaro and J. Ortuño González.—p. 221.

Bone Implants in Treatment of Active Tuberculous Process.—Robertson declares that the method he describes opens a field for conservative surgery to aid the natural processes



Bone implants with tuberculous arthritis.

of repair. He does not excise the tuberculous tissue in the knee, for example, but inserts two strips of bone from the tibia, implanted in sound tissue on each side of the joint. The ends of the bone strips are buried in the sound bone above and below the diseased joint, which they bridge on each side. Sometimes he drives pegs slanting through the sound bone into the epiphysis, traversing the cartilage but stopping short of the tuberculous lesion. He keeps up extension in a cast for three months and begins with extension and traction for two weeks before supplying the implants, to render conditions more favorable for them. They induce a reaction osteitis which starts processes of repair, and they supply material for the repair. The implants should be chiseled out, never sawed, as the bone saw-

dust clogs the openings in the bone and prevents the growing in of new vessels. No foreign body, thread or wire, should touch the implants. The ends of the latter should fit into the subcortical tissue, beneath the periosteum, but not extending to the marrow cavity. The osteitis induced by the end of the implant in the epiphysis may block the circulation to the tuberculous tissue and compel its atrophy. The pegs traversing the cartilage serve to drain away venous blood. The side implants in his cases grew in six months from the size of a toothpick to that of a rib. The patient can get up after three months, a light plaster cast still immobilizing the joint. When roentgenograms and palpation fail to reveal anything left of the lesion, he removes the subcutaneous side implants, and in ten or twelve days afterward begins massage. The osteitis serves as revulsion and the general health shows promptly the benefit from this.

Serologic Reaction with Suppuration.—Ymaz has been working for ten years to produce a stable suspension of leukocytes which could serve for the serologic diagnosis of hidden suppuration. He reviews the research by others in this line, and describes a simple technic with which he obtains aseptic pus (from a turpentine abscess) in an

isotonic vehicle, and the whole keeps perfectly for an indefinite time. The precipitation reaction and the zone of contact reaction with this reagent were relatively negative in thirty-eight healthy controls and relatively positive in the five cases of suppuration tested.

Radioscopy of the Stomach.—Merlo gives thirty-two radiograms of the stomach and discusses the interpretation of the findings, especially the differentiation of organic and spasmodic stenosis.

Sign of Neoplasm Inside the Thorax.—Novaro recalls that Pitres demonstrated the displacement of the sternum toward the side containing a pleural effusion. The lung on the other side has to work extra hard, and this extra expansion forces the xiphoid appendix toward the other side. Novaro calls attention to the inverted displacement when there is a tumor in pleura, lung or mediastinum. The infiltration around the tumor and the tumor itself force the xiphoid appendix over toward the sound side. He gives the roentgen and necropsy findings in three cases which establish the reliability of this sign which, he says, might be called the inverted Pitres.

Suction Drainage.—Galíndez describes the technic with which he has successfully drained by aspiration in cases of cysts in the lungs, bronchial fistulas and purulent pleurisy.

Hemoglobin Crystals.—Lacoste takes the blood clot with a small quantity of blood serum and carbon bisulphid, or ether, in excess, triturating in a mortar. A thick drop of the filtrate (through paper) is kept in the moist chamber until crystals form. He gives thirteen photomicrographs showing the characteristic crystals with different species of animals.

The Enzyme Reactions in Immunization.—Damianovich states that the oxydases in the blood were in larger proportions in patients with infectious diseases than in others, among 100 persons tested. In rabbits, the enzymes which cause oxidation processes increased in notable proportions when the animals had been inoculated with diphtheria or other infection.

Hydatid Cysts in the Liver.—Petty usually reaches the cyst through the pleura after resection of the ninth or tenth rib, suturing the diaphragmatic to the pleural pleura, leaving the diaphragm exposed. He describes his technic in detail. Forty-eight hours after evacuation of the cyst he applies the Dakin-Carrel treatment, and begins heliotherapy in a week. In his six cases of the kind, the cure was complete in thirty-six days on an average with this treatment; without the Carrel-Dakin procedure the average was fifty-nine days.

Archivos Brasileiros de Medicina, Rio de Janeiro

July, 1919, 9, No. 7

*Impending Eclampsia. R. Pacheco.—p. 541.

Sewerage System of Rio. Belmiro Valverde.—p. 567.

Eclampsia.—Pacheco applies this term to the condition just preceding eclampsia, and tells how to detect it in time and thus avert disaster. He declares that it is not enough to examine the urine for albumin. The specific gravity and the chlorid content in the twenty-four hours urine are the true index of the condition. The blood pressure should be taken whenever the pulse is hard and the output of urine reduced. The pulse curve is typical in this stage of hypertension, the prelude to eclampsia. This characteristic sphygmographic record differs in three features from the normal tracing: in the slope of the ascending line; in the plateau instead of the usual peak between the ascending and descending line, and in the almost total absence of the elevations of secondary waves. Pacheco gives the findings in over fifty pregnant women, all free from albuminuria, but with urine of a specific gravity of 1.010 or below. The arterial pressure was constantly high in all these cases and the pulse was of the characteristic type, confirming the imminence of eclampsia. Only this group of fifty were found among 300 pregnant women examined in the course of almost a year's research. The women found to be threatened

with eclampsia were kept on milk alone; in the extreme cases only water was allowed. Injections of sugar solution were useful to reduce the concentration of the blood and promote diuresis. Venesection two or three times a month, withdrawing not more than 100 or 120 gm. of blood at a time, helped to reduce the blood pressure and get rid of toxins. Purges and enemas aided in improving the general condition. A tendency to jaundice usually accompanied this precursor stage, and it promptly subsided under small fractionated doses of calomel, cascara, etc. Diuretics should be accompanied by total or partial restriction of salt, and no meat at all should be allowed. This article was awarded the Durocher prize by the Academia Nacional de Medicina. Pacheco's attention was called to eclampsia by the case of a young pregnant woman whose urine was free from albumin on repeated examination. Slight edema and slight headache one day led to investigation of the urine for the specific gravity, which was found 1.006, and large amounts of albumin suddenly appeared in the scanty urine. Convulsions followed the same day, and proved fatal in seven hours.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

September, 1919, 32, No. 9

*Scabies and Osteomyelitis. C. Martí Cabot.—p. 205.

Treatment of Hysteria. R. del Valle y Aldabalde.—p. 208.

*Mentally Abnormal Children. E. Fernández Sanz.—p. 214.

*Fracture of Femur. F. Criado Aguilar.—p. 221.

Scabies and Osteomyelitis.—Martí reports a case of osteomyelitis in a child who had been having scabies for three months. The case teaches anew that a mild pathologic condition, like scabies, may open the portal to fatal infection. The extensive osteomyelitis required radical and persevering operative measures.

Mentally Abnormal Children.—Fernández describes the various measures required for three great groups of mentally abnormal children, the mentally backward, the mentally backward with some active psychopathy, and the abnormal children not mentally backward.

Fracture of the Femur.—Criado denounces extension as unreliable even for adults and much more so for restless children. His method of applying a cast to insure that the leg is exactly the length of the sound mate has already been described in these columns, when published elsewhere (Oct. 11, 1919, p. 1168).

Archivos Latino-Amer. de Pediatría, Buenos Aires

September-October, 1919, 13, No. 5

Benefit from Albumin Milk in Two Cases of "Decomposition." J. P. Garrahan.—p. 405.

Atrophic Cirrhosis of Liver in Syphilitic Infant. L. Belloc and S. Satanowsky.—p. 413.

Hydatid Cyst in Lung Spontaneously Evacuated. V. Zerbino.—p. 417.

Chorea of Mental Form. V. Zerbino.—p. 419.

*Gallop Sound in Acute Nephritis in Children. L. Morquio.—p. 424.

Atresia of Anus and Rectum. M. Armand Ugón.—p. 429.

*Diphtheric Paralysis without Diphtheria. M. Ponce de Leon.—p. 434.

Jellification of Spinal Fluid with Xanthochromia in Child with Tuberculous Meningitis. J. A. Bauzá.—p. 440.

Emulsion of Cod Liver Oil in Malt Extract. L. Morquio.—p. 446.

Gallop Sound in Children.—The gallop sound in the precordial region in the two cases described cleared up the diagnosis by suggesting acute nephritis. The child of 4 had no other symptoms except slight pathologic findings in the urine, and all promptly returned to normal. The child of 14 presented symptoms of endocrine insufficiency when the discovery of the gallop sound called attention to the kidneys. The acute nephritis in this case proved rapidly fatal. The circumstances in these and in other cases cited suggest that toxic action on the myocardium is responsible for the gallop sound in these cases, by weakening the heart action and thus entailing compensating dilatation.

Polyneuritis of Diphtheric Origin without Apparent Diphtheria.—Ponce de Leon reports another example of generalized polyneuritis, without pain or sensory disturbances, entailing merely general paresis in the child of 8. No cause for the polyneuritis could be discovered but certain features of it suggested diphtheric paralysis, and although the throat was apparently normal, diphtheria bacilli were cultivated

from it and under antitoxin rapid recovery ensued. The case teaches the wisdom of antitoxin treatment in dubious cases of the kind.

Boletín de Medicina y Cirugía, Guayaquil

August, 1919, 17, No. 123

Modern Treatment of Syphilis. M. Peñaherrera E.—p. 111.
The Danger from Tuberculosis. B. Huerta.—p. 113.
Sugar Treatment of Tuberculosis. J. D. Escolar.—p. 114.
Healing of Fracture under Lane Plate. J. E. Verdesoto.—p. 118.

September, 1919, 17, No. 124

Influenza at Paris. P. P. Eguez B.—p. 127.

Sugar Treatment of Tuberculosis.—Escolar has applied the Lo Monaco method of daily injection of a sugar solution in tuberculous patients, but found the results very disappointing.

Gaceta Médica de Caracas

Oct. 31, 1919, 26, No. 20

Treatment of Typhoid Fever. A. Machado.—p. 211

Prensa Médica Argentina, Buenos Aires

Nov. 20, 1919, 6, No. 17

Multiple Primary Cancer of Lymph Glands. M. Aberastury.—p. 169.
Diffuse Phlegmon of Scalp after a Fall. A. Marciano and A. Artusi.—p. 173.
Proposed Changes in Medical Curriculum. G. Aráoz Alfaro.—p. 173.
Id. J. B. González.—p. 176.

Primary Cancers of Lymph Glands.—Aberastury's patient was a healthy farmer of 70 who suddenly developed a chill and pains in the chest. In a month he noted a tumor near the umbilicus and another later in the right supraclavicular fossa. These tumors were hard and knobby. A number of bumps developed at other points, all hard, round and indolent, and the asthenia was extreme, although the man seemed well nourished, and there was no fever. By exclusion, the glandular lesions were assumed to be metastases from some hidden cancer, but the nine photomicrographs given show that the multiple lesions were all primary endotheliomas of the lymph glands. Aberastury knows of only seven cases in record approximating this.

Dec. 10, 1919, 6, No. 19

Chronic Parametritis. C. A. Castaño.—p. 193.
Myositis Simulating Ankylosis of Jaw. A. Sacco.—p. 194.
Percussion in Pleurisy in Children. E. Martínez Zuviría.—p. 195.
Testimony in Case of Induced Abortion. E. Catalán.—p. 196.
Arrhythmias. P. M. Barlaro.—p. 196. Cont'n

Chronic Parametritis.—The two cases described by Castaño were of the type with atrophy to which Freund first called attention. The persisting pain is evidently the result of compression of nerves from the sclerosis in the connective tissue. There is a history of untreated syphilis in both his cases, and in addition to specific treatment, he has ordered massage to promote the circulation and ward off atrophy of the internal genitals, and gymnastic exercises of the bicycle type. He is also applying hot air, and is considering diathermy and ovarian treatment. Pulvermacher has recently reported benefit from rectal injection of iodized paraffin, the latter acting on adhesions. He mixes 5 gm. of paraffin at 5 C. with 90 gm. of liquid paraffin. When cooled to 45 C., he adds 10 or 15 drops of tincture of iodine. The syringe is heated in boiling water and the mixture is injected about 2 cm. above the anus.

Diagnosis of Pleural Effusion in Young Children.—Marnez found normal resonance in the chest of the child of ½ with ordinary percussion, but when the percussion was extremely gentle, the child sitting up without support, except on its hands, dulness was found in the entire left side of the chest, and puncture in the ninth interspace released an effusion. The coexistence of a vesicular murmur was misleading at first.

Revista Española de Medicina y Cirugía, Barcelona

November, 1919, 2, No. 17

Double Operation for Gangrenous Hernia. G. Estapé.—p. 595.
Symptom of Hyperthyroidism. G. Marañón.—p. 598.
Radiocardiometer. B. Navarro Cánovas.—p. 600.
Pathology of the Skin in Relation to Pathologic Brain Conditions. E. de Oyarzabal.—p. 604.
Electrocardiography in Pathologic Conditions. R. Dargallo.—p. 607.

Treatment of Gangrenous Hernia.—Estapé opens up the hernia as usual, but if he finds evidence of gangrene he packs gauze around it and makes a vertical incision some distance above, at the margin of the anterior rectus, and hunts for the afferent and efferent portions of the loop forming the hernia. He then makes an anastomosis between them, with a button, and sutures the incision. He then returns to the gangrenous herniated portion of the loop and fastens it to the skin, amply protected with gauze. When this bowel sloughs open he treats it until the loop is harmless and the fistula heals, which takes about twenty-eight or thirty days. This procedure applied in two cases gave excellent results. The course of the feces was reestablished from the start, while, after draining, the gangrenous loop healed naturally. He warns that fresh gloves should be taken at each step of the operation, and emphasizes the necessity for operating a strangulated hernia within twenty-four hours to ward off gangrene. Two illustrations show the technic with inguinal hernia.

Vasomotor Symptom of Hyperthyroidism.—Marañón found in ninety-two of 100 cases of hyperthyroidism that rubbing the skin in the neck lightly with the fingers made it turn very red in the region of the thyroid, a much brighter red than could be elicited by rubbing the skin in the same way elsewhere. This vasomotor reaction may be more pronounced in the milder cases, and is more distinct in the nervous, in women, in the young, at the menopause, and in persons inclined to sympatheticotony rather than vagotony. He has not seen any mention in the literature of this induced localized erythema in the thyroid region; it may be a uniform or irregular redness, and there may be slight swelling of the red patches.

Radiocardiometer.—Remigio Dargallo comments on the lack of accuracy in estimating the size of the heart unless the very complicated orthodiagraphy method is used. He has found that the ratio between the diameter of the heart and the widest diameter of the chest is almost constant in health. The normal heart forms 42 per cent. of the chest diameter; 33 per cent. of the remaining diameter lies to the right and 25 to the left. When the subject reclines, the heart spreads out a little, so these figures are modified to 44, 35 and 21. He gives an illustration of a chart scale marked off in hundred squares, in perspective, the different rows of squares corresponding to different sized chests, with the squares corresponding to the normal heart area marked. This radiocardiometer is made of transparent celluloid, and by laying the scale on the chest or on the screen, with the row of squares just corresponding to the diameter of the individual chest, it is easy to see any encroachment of the heart shadow beyond the area it should normally occupy.

Revista de Medicina y Cirugía, Havana

Dec. 10, 1919, 24, No. 23

The Algias of Psychasthenics. J. M. Govantes.—p. 549.
Diabetic Gangrene. R. Grau San Martín.—p. 551.

Revista de Medicina y Cirugía Prácticas, Madrid

November, 1919, 125, Nos. 1577-1580

Drugless Treatment of Tuberculosis. J. Codina Castellví.—p. 161 and 193.
*Intermittent Occlusion of Intestine in the Pregnant. D. F. Villanueva.—p. 233.
Pathology of the Skin in Relation to Disease of the Spinal Cord. Eusebio de Oyarzabal.—p. 264.

Intermittent Ileus in the Pregnant.—Villanueva states that autointoxication was pronounced in the two pregnant women with intermittent ileus he has recently encountered, and he ascribes it to spasmodic contraction from toxic action. In both, uncontrollable fecaloid vomiting preceded and accompanied the intermittent occlusion of the bowel, and one of the women died the fifth day after induced premature delivery. The other woman was treated at the fifth month with measures to arrest the tendency to spasm of the bowel and cure the autointoxication, and she was thus tided along until term, and parturition was physiologic. The main reliance was on two or four injections of morphin, with atropin, hot enemas, with a little milk by the mouth and scraps of ice.

Revista de Psiquiatría, Lima

October, 1919, 2, No. 2

- Clinical Study of Tabes in a Young Man. E. Odriozola.—p. 92.
 *Disturbances after Ovariectomy. R. Mendoza M.—p. 97.
 The Various Causes of Sudden Death. F. Quesada.—p. 108.
 The Nervous Disturbances of Influenza. H. Valdizán.—p. 113.
 The Mental Development of the Child. H. F. Delgado.—p. 130.
 *Psychopathography. H. Valdizán.—p. 175.

Nervous and Mental Disturbance After Ovariectomy.—Mendoza summarizes nine cases in which the artificial menopause induced unusually severe nervous disturbances and change in character. No benefit was realized from organotherapy in most of the women. In the most refractory cases an element of hysteria or neurasthenia was manifest. One woman of 40 had attacks of unconsciousness, besides the usual phenomena of the menopause; no benefit was obtained from ovarian treatment but under ergot for a time conditions gradually returned to normal. Headache, insomnia, neuralgias and pain in the lumbar region were common.

Psychopathography.—This is a short story written by a young man with paralytic dementia. It is reproduced as a specimen of psychopathography.

Semana Médica, Buenos Aires

May 1, 1919, 26, No. 18

- What the Medical Course Should Be. G. Aráoz Alfaro.—p. 447.
 Opening Lecture on Clinical Epidemiology. F. R. Torres.—p. 457.
 Potassium Iodid for Radiography of Fistulas. C. Heuser.—p. 462.
 What the Preparatory Course and Requirements Should Be for the Medical, Dental and Pharmacy Courses. Ubaldo Fernández.—p. 463.

Oct. 23, 1919, 26, No. 43

- *Splenectomy for Banti's Disease. A. Ceballos.—p. 479.
 Fatal Case of Lethargic Encephalitis. R. Rivas Jordán.—p. 483.
 The Radium Institute. C. A. Castaño.—p. 484.
 Treatment of Diphtheria. C. E. Pico.—p. 486.
 *Benzol in Leukemia. M. E. Pignetto.—p. 489.
 Case of Genital Neurasthenia. J. de Pereira Rego.—p. 492.
 Case of Senile Arteriosclerosis and Amaurosis. Id.—p. 500.

Splenectomy in Banti's Disease.—In Ceballos' three cases the disease was in the third or ascitic stage; the patients were three men between 22 and 28. The easiest mode of access was with the patient lying on his right side, his back at an angle of 45 degrees with the surface of the table. The left arm, in extreme abduction, is raised toward the head, which raises the base of the thorax and the stretched muscles. The surgeon stands at the patient's right. With his right hand he can pivot out the spleen; as it lies on the abdominal wall, the vessels in the pedicle can be easily seized and adhesions to the diaphragm broken up more readily than from the left side. If the spleen is excessively large, it might be wiser to ligate the artery in the pedicle and wait for the organ to atrophy rather than remove it at once.

Benzol in Leukemia.—Pignetto reports two cases of myelogenous leukemia in which marked improvement followed benzol treatment. The first patient was a woman of 45; the erythrocytes increased from 2,000,000 to 5,000,000 by the eighty-third day, the hemoglobin from 60 to 88 per cent., while the leukocytes dropped from 600,000 to 7,500. She took 2 gm. benzol daily at first and increased to 5 gm. without any signs of intolerance except at first and toward the last, compelling brief suspension of the treatment. A total of 256 gm. was thus taken. She kept well for three months after the close of the course of treatment, and then returned to her home in the country and further details are not known. The second patient was a woman of 55, and the leukemia subsided somewhat under roentgen exposures three times a week for a month, the leukocytes dropping from 200,000 to 120,000. Then increasing weakness and other symptoms compelled abandonment of the exposures, and benzol was given, a total of 150 gm., with improvement as in the other case. It has persisted during the two years to date, with nothing left of the leukemia except the anemic complexion. This patient takes arsenic for twenty days each month.

Siglo Médico, Madrid

Nov. 29, 1919, 66, No. 3442

- *Acute Colitis in Children. Bravo y Frias.—p. 1025.
 *Serodiagnosis of Syphilis. T. Morató Cárdenas.—p. 1030.
 *Bacteriologic Prognosis in Typhoid. L. Ruiz de Arcaute.—p. 1033.

Dec. 6, 1919, 66, No. 3443

- Personal Prophylaxis of Venereal Diseases. E. Mañueco Villapadierna.—p. 1049.
 Inherited Syphilis and Tuberculosis. E. Mariño and J. C. Mussio Fournier.—p. 1052.
 Necropsy of Burned Child. M. Bermejillo.—p. 1054.
 Grave Suprarenal Insufficiency During Influenza; Two Cases. M. Clemente.—p. 1057.

Acute Colitis in Children.—Bravo found in his 50 cases last summer in children from 1 to 5 years old, that the streptococcus was mainly responsible, alone or associated with the colon bacillus. The colitis accompanied or followed streptococcus lesions elsewhere, or became associated with a streptococcus lesion of the skin. Pylonephritis frequently followed the colitis, which emphasizes the share of the colon bacillus in the process. In 35 per cent. of the 50 children, a febrile bronchitis just preceded the colitis, but 2 children developed it at the same time as other members of the family were having influenza. Only 2 of the total 50 were breast-fed; the majority were eating at the family table, and the premature use of meat, eggs and cheese may have afforded a predisposition.

Serodiagnosis of Syphilis.—Morató states that the Sachs-Georgi test gave findings that paralleled the Wassermann test more closely than any other of the various serologic tests applied.

Bacteriologic Prognosis of Typhoid.—Ruiz de Arcaute refers to some recently published cases in which the total absence of agglutination and of bacteria in the blood coincided with a promptly fatal course. He warns that even the most apparently typical necropsy findings do not justify the absolute diagnosis of typhoid unless the stools have been examined.

Deutsche medizinische Wochenschrift, Berlin

Oct. 9, 1919, 45, No. 41

- Regenerative Processes in Man. A. Bier.—p. 1121. Cont'n.
 The Friedmann (Turtle) Strain of Tubercle Bacilli. G. Schröder.—p. 1124.
 Proteus X₁₉ and Complement Fixation in Typhus Fever. W. Steiner.—p. 1126.
 The Avoidance of Untoward Results of Arsphenamin Administration. C. Stern.—p. 1127.
 *Tuberculosis of Mesenteric Glands. E. Gehrels.—p. 1128.
 Increased Incidence of Osteomalacia. F. Partsch.—p. 1130.
 *Cryptogenetic Pernicious Anemia. I. Zadek.—p. 1133.
 Effects on Brain of Ligation of the Carotid. Gruber and Werner.—p. 1134.
 Hygiene and Social Hygiene. H. Selter.—p. 1136.
 Congenital Nevus and Acquired Gigantism of the Left Leg. W. Lehmann.—p. 1137.
 Malaria in Asia Minor. H. Flebbe.—p. 1138.
 Present Problems and Aims of Sexology. A. Kronfeld.—p. 1140.
 The Terms "Constitution" and "Heredity." A. Edel.—p. 1141.
 Enlargement of Salivary Glands in Soldiers. W. Blumenthal.—p. 1141.

Tuberculosis of the Mesenteric Glands.—Primary tuberculosis of the mesenteric glands, Gehrels finds, is not so well known as the secondary form, in spite of its greater importance. The diagnosis of the primary form is important because it is so often confused with surgical diseases, especially appendicitis. The disease is produced by tubercle bacilli entering from the intestine. The bovine type of bacillus is common. The favorite site of the disease is the lymph glands of the ileocecal region. Children are more frequently affected than adults, which is owing to the greater permeability of the intestinal mucosa. Abdominal pains, usually localized in the ileocecal region, are the most important initial symptom. Acute symptoms often resemble those of tuberculosis of the peritoneum. Fever is usually present at the onset. Insatiable hunger (bulimia) and denutrition, accompanied by secondary anemia, are characteristic symptoms. The intestinal disturbances vary and are not typical. Blood in the stool points rather to tuberculosis of the intestine. He adds that two roentgenograms of the abdomen should be taken several days apart for purposes of comparison. The most important clinical complication is ileus. The lack of abdominal distention and the abdominal sensitiveness to pressure help to differentiate the disease from appendicitis, which it resembles in its earlier manifestations. Tuberculosis of the mesenteric glands is more amenable to treatment than any other form of tuberculosis: forced feed-

ing, change of climate, artificial heliotherapy, deep abdominal roentgenotherapy, and tuberculin injections. Surgical intervention is indicated only when long continued internal treatment has failed. Mesenteric abscesses may demand an operation. Various types of operation are to be considered: radical extirpation of the diseased glands, excochleation, abscess puncture, and explorative laparotomy in diffuse conditions in which assailable glands are not readily recognized.

The Therapy of Pernicious Anemia of Unknown Origin.—That it is a long and weary road that both physician and patient have to travel before cryptogenetic pernicious anemia can be cured, Zadek readily admits; in fact, an absolute cure is exceedingly rare. He has, however, by his mode of treatment been able to effect marked improvement in seventeen cases. He orders rest in bed until remission occurs, which usually requires from four to six weeks. The patient may then be allowed to sit up for longer periods each day. The diet should consist mainly of milk, vegetables, cereals and fruit; twice a week, boiled meat (no sausage or smoked meat); cheese and eggs in small quantities; reduced liquid intake (no soup). As medication he advises: three times daily by mouth, 20 drops of hydrochloric acid; after an early supper, 20 gm. of animal charcoal in wafer form; every second day subcutaneous injections of a thoroughly neutralized 1:100 solution of sodium arsenate, beginning with one scale unit of the Pravaz syringe and increasing one unit at a time up to 1 c.c.; in exceptionally severe cases up to 2 c.c. For one or two weeks injections of the same quantity are given; then they are decreased down to 0.1 c.c. again. Weekly intravenous injections of neo-arsphenamin in increasing doses: 0.15, 0.3 up to 0.45 gm., for from four to six weeks are given. Daily, alternating gastric and intestinal lavage is done. For the gastric lavage, which is given mornings before breakfast, from 12 to 15 liters of lukewarm water are used, to which 3 gm. of sodium salicylate or phenyl salicylate have been added. The intestinal lavage is usually given evenings (in the genucubital position) with a chamomile decoction, or, if there is a tendency to constipation, a soapsuds enema is used. The lavages are usually kept up until the arsenic treatment is discontinued, but often for weeks, and occasionally for years. Zadek states that the outlined treatment is certain, in a few weeks, to bring about an extended remission.

Deutsche Zeitschrift für Chirurgie, Leipzig

February, 1919, 148, No. 3-4

- *Oblique Inguinal Hernia. G. Ledderhose.—p. 145.
- *Restoration of Eyelashes. J. F. S. Esser.—p. 199.
- *Operative Treatment of Cardiospasm. R. Pamperl.—p. 206.
- *Bulging of Carotid Artery. P. Deus.—p. 228.
- *Snapping Hip. K. Propping.—p. 251.
- *Dislocation of the Atlas; Recovery. T. Naegeli.—p. 269.
- *Retrograde Herniotomy. Kinscherf.—p. 276.
- *Foreign Bodies Impacted in Esophagus. L. Zindel.—p. 281

Indirect Inguinal Hernia.—Ledderhose devotes over fifty pages to this study of the structure of external and encysted inguinal hernia, its mode of development, especially the congenital type, the recurrences after herniotomy, the relations with the omentum, various anomalies such as a lipoma in the inguinal canal, and the features, the microscopic in particular, which differentiate the direct and the indirect types. The minute findings in twenty operative cases are recorded.

Operations to Restore Eyelashes.—Esser gives an illustrated description of the method he has applied in a number of cases to restore missing lashes, by taking a strip from the eyebrow to suture to the edge of the lid. He first slits both eyebrow and eyelid lengthwise, and sutures the near lips of each together, forming thus a kind of tunnel lined with skin. When this has healed, he sutures the other lips together, the upper part of the eyebrow and the lower part of the eyelid, covering up the other suture. Then an incision is made through both, just below the hairs in the eyebrow and just above the hair strip that was first sutured to the upper lip of the lid. This leaves the eyelid with a strip of hairs. The various steps of the operation in two cases are illustrated; they are not cited as very successful cases.

Operative Treatment of Cardiospasm.—Pamperl reports two cases of inveterate cardiospasm in which he opened the stomach and stretched the cardia for half an hour until he could work four or five fingers of one hand through it. Notwithstanding this unprecedented stretching of the cardia and the excellent immediate results after the operation, the cardiospasm now displays a tendency to return. The contrast meal four months later showed a distinct retarding of the passage through the cardia, even when there was no disturbance in swallowing. By the tenth month this was more pronounced, and the patient feels that the food tarries above the stomach when she is excited. The other patient seems to be subjectively cured although the bismuth suspension does not pass entirely at once into the stomach. Even with this possibility of return of the cardiospasm, he regards this stretching method, without cutting the cardia, as the preferable technic when systematic efforts at dilatation with sounds from the mouth have failed to relieve. He tabulates the fine results realized with this dilatation from below in sixteen cases on record, comparing with it eight cases in which various surgeons applied other operative measures.

Spontaneous Dilatation of the Carotid Artery.—Deus describes three cases of bulging of the carotid simulating an aneurysm and requiring operative intervention. He compares with these the few cases on record of suture of the carotid artery for aneurysm. There was only one fatality in the list.

Forward Dislocation of the Atlas.—Naegeli reports the tardy paralysis and final recovery in a case of forward luxation of the atlas from a fall on the head from a load of hay. The case affirms anew the importance of prolonged repose in such cases, with the spine and neck immobilized in plaster. Only solid growing together of the parts ensures a permanent cure and wards off tardy complications.

Retrograde Herniotomy.—Kinscherf applies this term to an operation through the inguinal canal to reach the obturator hernia in sound tissue, above the incarcerated portion of the loop.

Impacted Foreign Bodies in the Esophagus.—Zindel has encountered thirteen cases of this kind in the last thirteen years. The esophagus was incised in five cases as the coin or set of false teeth could not be released. In two cases there was hemorrhage the fourth or fifth day after the operation, fatal in one child. The attempt to push the soft or smooth foreign body down into the stomach failed in only one case; in this, a cherry stone had caught at a stricture left from an old caustic erosion.

Wiener klinische Wochenschrift, Vienna

Nov. 13, 1919, 32, No. 46

- *Carcinolytic Organic Acids. E. Freund and G. Kaminer.—p. 1105.
- *Circumscribed Cutaneous Edema in Diseases of the Abdomen. O. Hans.—p. 1107.
- *Variable Parasite Findings in Malaria. R. Reitler.—p. 1108.
- *Onychodystrophy After Typhus Fever. H. Grossfeld.—p. 1109.
- *Curability of Cancer. A. Fraenkel.—p. 1110.

Cancer-Destroying Organic Acids.—Previous research by Freund and Kaminer had shown that normal blood serum and normal tissues contain an organic fatty acid having power to destroy carcinoma cells. They have not succeeded as yet in establishing the exact formula of this fatty acid, so they refer to it as the "normal" acid, since it is the protective substance of normal cells. Carcinoma serum and carcinoma tissue, they find, do not contain this "normal" acid, but they do contain an unsaturated fatty acid that counteracts the effects of the "normal" acid, and thus forms a protective substance for the carcinoma cells. This acid they term the "carcinoma" acid. They have therefore come to regard the conflict between the human organism and the invading neoplasm as a conflict between two opposing substances. They admit that questions pertaining to the nature and origin of the "carcinoma" acid may be more important, but from the therapeutic aspect the analysis and production of the carcinolytic "normal" acid is also important, for they believe that if the "normal" acid can be produced in sufficient quantities, the growth of carcinoma cells can be at

least checked. Comparing the neutralizing properties of the two acids, they find that at least ten times as much "normal" acid as "carcinoma" acid is required to neutralize a given alkali. This, they think, explains the fact that concentrated solutions of "normal" acid, derived from horse serum, while they had some effect on epitheliomas, proved in the end no match for the much stronger "carcinoma" acid. Concentrated solutions of the "normal" acid being difficult to produce other than in small quantities, they conceived the idea of replacing it by a synthetic product. Starting with an analysis of the "normal" acid, they claim to have discovered the series of acids to which the "normal" acid belongs; namely, the saturated dicarboxylic acids. They have tested the action of various members of this series on carcinoma cells, and find that, while certain members exert a cytolytic action on these cells, others do not; for example, oxalic acid and malonic acid were not effective, whereas succinic acid was effective. Again, adipic acid and pimelic acid were not effective, whereas suberic acid was effective. This finding in itself is significant, that within a series of acids some members are cytolytic and some are not. Acids of many other series were tried; none of them proved to exert a cytolytic effect on carcinoma cells. Freund and Kaminer admit that they are still far from synthetic production of the required substance, but think that having found the series of acids to which it doubtless belongs, the way for further progress is clearly mapped out.

Zentralblatt für Chirurgie, Leipzig

Dec. 6, 1919, 46, No. 49

Aneurysm of External Iliac Vein. E. Kreuter.—p. 977.

*Toxicity of Aseptic Crushed Tissues. T. Naegeli.—p. 981

Toxicity of Aseptic Crushed Tissues.—Naegeli injured the muscles of the thigh and pelvis in some guinea-pigs by pounding, and in others excised a scrap of muscle tissue or a kidney, and reimplanted them after an interval. The results confirm the toxicity of damaged tissues even when aseptic, and the importance of promptly clearing out all devitalized tissue. Mice injected with 1 c.c. of urine from a patient with a necrotic process nearly all died in from one to five days.

Zentralblatt für Gynäkologie, Leipzig

Nov. 29, 1919, 43, No. 48

*Zinc Chlorid in Treatment of Uterine Hemorrhages. H. Hellendall.—p. 969.

*Reinfusion of Blood Lost from Tubal Abortion. E. v. Arnim.—p. 971.

Zinc Chlorid in Treatment of Uterine Hemorrhage.—Hellendall reports a case which warns against this method of treating uterine hemorrhage as it entailed complete occlusion of the cervix. Hematometra followed, with paroxysms of pain compelling supravaginal amputation of the uterus.

Reinfusion of Blood from Tubal Abortion.—Von Arnim relates that in twelve of a recent series of 135 operative cases of extra-uterine pregnancy, she reinfused into a vein from 300 to 1,000 c.c. of the woman's own blood, diluted with an equal amount of physiologic sodium chlorid solution with a little sodium citrate. The blood was scooped or soaked up from the abdominal cavity and passed through a funnel over some gauze as a filter. From the filter the blood passed into a receptacle containing the salt solution. The women recuperated from their moribund condition surprisingly fast. By the next day the pulse was good and full, the lips red, and strength was rapidly regained. The reinfusion caused intense cyanosis in one of the women, and attacks of pain in the chest with dyspnea and a chill in two others. Toxic action from the dying blood might explain these by-effects. Nothing suggesting edema in the lungs was evident in the one fatal case, the woman succumbing to peritonitis. This was the only fatality in these twelve reinfusion cases. The reinfusion consequently should be attempted only when the hemorrhage is recent. No case is known of embolism from reinfusion. No woman should be allowed to bleed to death after an operation for extra-uterine pregnancy, she affirms in conclusion, without having reinfusion attempted at least.

Zentralblatt für innere Medizin, Leipzig

Dec. 13, 1919, 40, No. 50

*Recent Works on Pharmacology. C. Bachem.—p. 929.

Recent Works on Pharmacology.—Bachem reviews recent German literature on the action of drugs, old and new. One writer extols strychnin for its prompt efficacy in circulatory disturbances from paralysis of vessels, as in shock, collapse from poison, etc. The daily subcutaneous or intravenous dose of 3 or 4 mg. acts rapidly and does no harm. Silver salvarsan is extolled by some as the most potent treatment for syphilis yet known, but angioneurotic by-effects seem to occur more frequently than with other salvarsan preparations, according to some. Hoffmann has compiled cases of drug eruption transmitted by the mother's milk, bromid, salvarsan and acetylsalicylic acid eruptions. Instances of this are not so common as generally assumed. Several cases of poisoning from hydrocyanic acid are mentioned; it was inhaled in exterminating vermin. Fühner advocates as an antidote subcutaneous injection of a 5 per cent. solution of sodium thiosulphate (hyposulphite). Another writer warns that injections of caffein seemed to favor gas gangrene.

Mededeelingen v. d. Burg. Geneesk. Dienst, Java

1919, No. 7

Report on Dysentery Epidemic. E. P. Snijders and R. Pratomio.—p. 1.

*Breeding Places of Mosquitoes. N. H. Swellengrebel and J. M. H. Swellengrebel-de Graaf.—p. 39

Breeding Places of Mosquitoes.—Swellengrebel and de Graaf here report further research on the requirements of different species of mosquitoes for their breeding places. The different species seem to be constant in their habits but these habits differ in different species. They assert that their comprehensive and minute research in Java has apparently established that it is hopeless to attempt to do away with the breeding places for the larvae of the dangerous anophelines of the ubiquitous hill or shade-preferring kinds. They are not particular as to their breeding places, and general sanitation seems at present the only means of combating their larvae. The ludlowi, however, is so exceptionally dangerous, that special measures against it might be considered, including the doing away with its salt-water breeding places. This does not offer much hope of success, however, in view of the fact that if the more favorable breeding places are destroyed, the ludlowi might be driven to utilize other breeding places.

Hygiea, Stockholm

Nov. 16, 1919, 81, No. 21

Formation of Corpora Lutea in the Ovaries. A. Westman.—p. 865.

*Treatment of Leg Ulcer. H. I. Schlasberg.—p. 880

Leg Ulcer.—Schlasberg emphasizes the importance of excluding syphilis and tuberculosis before treating a varicose ulceration. One woman with a positive Wassermann reaction had been treated for two years on the assumption that the ulcer was a syphilitic lesion. When this assumption was disregarded and treatment applied as for any varicose ulcer, the lesion soon healed. His method is to soften and cleanse with Burow's solution for three or four days. Then he applies a plaster, 24 gm. solution of lead subacetate and 136 gm. lead plaster mixed and spread on a 2,000 sq. cm. cloth. This plaster should extend 2 cm. beyond the edge of the ulcer. The leg is then wound with a bandage from ankle to knee. The bandage is taken off every day, and if there is much secretion the plaster is renewed; otherwise the plaster may be left, but not for longer than three days. In two weeks healing is evident and is soon complete, while there has been no interference with the earning capacity, and no impairing of the circulation as when the elderly have to stay in bed. This method has been applied to 21 men and 29 women in the last seven years. The ulcer was over three years' standing in 20 cases, and one to three years in 19. The area covered by the ulceration ranged from 3 by 2 to 15 by 13 cm. The lesion took from sixteen to 197 days for the complete cure. Recurrence is known in 6 cases, in from three to twelve months, but these patients had not followed the advice to wear the bandage for a time after the ulcer had healed.

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TUBERCULOSIS AS A FOCAL DISEASE *

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It is sometimes important to get a new point of view for those serious problems that are most constantly with us. Like moving from one house to another, it brings to light things that have been forgotten, and loses others that were constantly in evidence. If we can do this with regard to tuberculosis, if we can bring out old facts that have been neglected and see them with a new significance, if we can lose some of our misconceptions that have been too constantly with us, hiding the real significance of what we observe, it may be a profitable use of our time.

GENERAL AND FOCAL DISEASES

A focal infection is an infection of some part of the body, localized by the defensive reactions of the tissues. Tuberculosis is the sum of the defensive local and general reactions of the organism against the tubercle bacillus, and the sequels of such reactions. We have commonly thought of tuberculosis as a chronic general disease.

In a sense we have no such thing as local disease in the human body. Injury to the smallest and most distant part produces general reactions of the whole organism, whether the injury be mechanical, chemical, or due to bacterial invasion or simply to strong emotion. That is what our connecting nervous and vascular mechanisms are for. Any imperfection or excess of such reactions, and also their most perfect adaptation to their purpose, constitute disease. They reach every part of the body. A professional colleague administered an ill-advised remedy to his daughter, resulting in her death. Three months later he pointed out on each of his finger-nails the transverse furrow which marked the influence of the nervous shock on every epithelial cell that had been in a certain stage of development.

What we call general diseases exhibit their characteristic changes only in certain portions of the body, as scarlet fever or measles in the skin and mucous surfaces, or typhoid in the intestinal lymph glands. Away from these regions of acute disturbance, physiologic function is carried on much as in health. Just as in France during the war, beyond the sound of the guns and out of the region of air attacks, the life of the community and the production of food continued along the same lines as it had in the years before the

German assault on civilization. At certain points war disorganized everything, destroyed everything, substituted its activity and accumulations for those of peace. The whole nation felt the effect of war; but its characteristic and obvious changes were localized. These were foci of war, and in quite a similar sense we speak of the foci of disease—of focal infections.

Every focus of infective disease is a point of attack and defense, of armed aggressive force. The opposing forces may be for the time accurately balanced, may sink into a state of siege, or only keep up the minor exchanges of trench warfare; but there is always present the aggressive disposition and the possibility of attack intended to annihilate all defense, and carry the warfare into new fields, there to produce a similar devastation. That is the nature and significance of every focal infection.

The typical tubercle is a typical focal infection. It is created by the reaction of the invaded tissue to the injurious influences of a colony of tubercle bacilli, sufficiently numerous and sufficiently virulent to establish themselves in that particular locality, and make their influence felt. It exhibits all grades of pathologic achievement, from massing of leukocytes and the proliferation of fixed tissue cells required to resist invasion, through degenerated epithelioid and giant cells to fatty, cheesy and calcareous masses of cell debris. It is a lesion preeminent in the length of the siege that the invading bacilli can withstand, maintaining their vitality to sally out when conditions become more favorable, and plant new colonies; thus to repeat the same process in other parts of the body. The single tubercle with these characteristics is the organic basis of tuberculosis; the essential feature of the disease, the one that all cases have in common, and the entity complete in itself. Tuberculous organs or regions are areas in which multiple foci have been massed.

The other phenomena that have been grouped in our minds to form the clinical picture of tuberculosis are occasional, incidental and temporary. They belong with coincident infections and complications, or are connected with a certain stage or particular locality of the focus of tuberculous invasion.

HISTORY OF TUBERCULOSIS

The history of our knowledge and recognition of tuberculosis is peculiar. Typhus and typhoid fevers, absolutely distinct diseases, were long confused. "Abdominal typhus," "typhus exanthématique" are terms that still remind us of the period when efforts were made to distinguish between them. Gonorrhea, syphilis and chancroid were all regarded as one disease. The terms "French measles" and "German measles" commemorate the classing with measles of a roseola or rōtheln. One dysentery was classed with

* President's address read before the Medical Society of the City and County of Denver, Jan. 6, 1920.

another, as though they were the same disease, and not in some respects strongly opposed to one another. They still are called dysenteries in loose phraseology; much as the "gutta serena" of older writers embraced whole classes of affections of the deeper tunics of the eye.

But with tuberculosis quite the opposite was the case. Phthisis was one disease, scrofula another, Pott's disease and coxalgia were quite independent. Pulmonary hemorrhage, pleurisy, cold abscess, and lupus were not thought of as having any essential in common, or with meningitis, or chronic pyelitis, or recurring vitreous hemorrhage.

Only when the causative bacillus was recognized and studied, and established as pathogenic, did the finding of it with these different clinical manifestations connect them up into the general modern conception of tuberculosis. So much does locality modify these manifestations, that it never had occurred to the students of disease that they all were of one and the same origin.

When I studied medicine, scrofula was one of the most important, confused and obscure conditions described in the textbooks, and among the first to confront the young practitioner. It was suspected then, as was known a few years later, that it was nine-tenths tuberculous, and one-tenth other confusing chronic conditions. But it had come down to us from Hippocrates as a distinct pathologic diathesis, or constitutional disease resting on a diathetic tendency, for which there was as much prospect of discovering a specific cause as there was for syphilis or tuberculosis. The anatomic investigations of Virchow had only added to the confusion.

Hip joint disease, clinically recognized and studied for 2,000 years, had then been subjected to the microscopic investigation that identified the tubercle. In 1779 the famous surgeon, Percival Pott, had published "Remarks on That Kind of Palsy of the Lower Limbs Which Is Frequently Found to Accompany a Curvature of the Spine." This condition had been followed back toward its etiology far enough to recognize in it the ubiquitous tubercle. The tubercle itself had risen to due prominence in connection with pulmonary tuberculosis through the work of Bayle and Laënnec almost 100 years ago. And sixty-four years ago Villemin had shown that it was infectious.

Koch's discovery of the bacillus caused the rapid crystallization of our present views regarding tuberculosis; but the importance of the latent focus of infection, and its bearing on our theory of etiology and treatment are still not fully appreciated. Even the author of "Cellular Pathology" failed to recognize that what he called "caseous hepatization"—the tuberculous infiltration of Laënnec—was but the débris of the bacteriocellular tuberculosis battle.

THE TYPE LESION IN THE EYE

The single tubercle is the typical lesion of a focal infection; each is complete in itself. The crowding of many tubercles into one larger mass has always tended to obscure the real character of the disease, by raising issues and causing symptoms that were incidental and nonessential; it has tended to draw attention away from the smaller fields of the vital struggle in which the real battle of defense against the invader was being fought. But a single tubercle usually is not recognized in the living body. Generally a large number of single tubercles developed in the same region, as

in a lymph node or a lobule of the lung, have been spoken of as the focus of infection.

Much that applies to the single tubercle applies to the larger mass; but a better insight into the nature of the disease began with the anatomic study, the microscopic analysis of the single tubercle; and there are important lessons still to be learned by the study of the evolution of such a lesion, and the careful noting of the symptoms it causes during life. There is one place in the body where such a study is possible, the background of the eye; and when the ophthalmoscope has been properly and persistently employed in this investigation, we shall have learned some very important facts with regard to the pathology of tuberculosis. The tubercle present in the ocular fundus varies in dimensions, being 0.1 to 1 mm. or larger. It can be watched often from its beginning to its complete involution. It may be recommended as a subject for study to all who are interested in tuberculosis.

Choroidal tubercles, as a late symptom in tuberculous meningitis or general miliary tuberculosis, were recognized early in the use of the ophthalmoscope. The first report regarding them was made by Manz in 1858. But when they appear in these cases, the patient is nearing the fatal termination of his disease; and only their initial stage became familiar to ophthalmoscopists. If carefully looked for they may be found within a few days of the end, in 50 per cent. of these cases. About fifteen years ago, Stock, experimenting with rabbits, found that tubercles of the choroid, beginning with much the same picture already familiar in the human eye, ran a course that ended in patches of choroidal atrophy, similar to the patches of choroidal atrophy even more familiar in human eyes.

The same series of changes has now been followed out in human eyes, by numerous observers. The connection with tuberculosis in other parts of the body has been noted. The focal reaction of such lesions after subcutaneous injections of tuberculin has been watched. It is established that a certain proportion, and probably a large proportion of the patches of choroidal atrophy found in our routine ophthalmoscopic examinations, are patches of atrophy left by the healing of focal infections of tuberculosis. These atrophies show destruction of the normal tissue, pigment massing, ultimate thinning of scar tissue, sometimes hyaline change or even ossification; but no cheesy or calcareous débris.

More recently still we have come to identify tuberculous focal infections in the retina. For thirty odd years the clinical picture of recurring hemorrhage from the retinal vessels into the vitreous has been recognized as an important ocular condition, causing temporary and sometimes permanent blindness. Ligation of the common carotid has been done for it, sometimes apparently followed by the desired result, but more often by failure.

We know now that many of these hemorrhages, probably all in a distinct clinical group, are due to tuberculous focal infections in the retina. The hemorrhages in some cases are not massive, causing blindness and shutting off the view of the basic lesions with the ophthalmoscope, but are small enough to permit the watching of the causative lesion. In the Colorado Ophthalmological Society we have had the opportunity of watching several of these cases for periods running one, two or three years; and the observations are full

of interest, because of the light they throw on the focal infections of tuberculosis in general.

The retinal tubercle is generally clearly connected with a blood vessel: either an artery or a vein, but more frequently the latter. The vessels thus involved vary from 0.01 to 0.1 mm. in diameter. In the beginning the vessel appears normal, except that at the seat of the lesion it is covered by a yellowish white or grayish white, rounded cloud, with an indefinite margin. This area reaches its full size in a very few days. On either side of the tubercle the appearance of the vessel may remain about normal, or may change slowly. The arteries commonly show little alteration, except that the perivascular sheath may become visible as white lines parallel to the blood column. The veins are more likely to become dilated in limited portions, which may be several millimeters in length. Such a dilated portion may have three or four times the diameter of the normal vein at either end of it; and the dilated part may end quite abruptly. It is as though that part of the venous wall had been weakened by some noxious influence exerted on it, while other parts of the wall remained healthy.

After many days or several weeks, newly formed vessels are seen on the surface and periphery of the tubercle, attended with some increase in the size of the mass and more clouding of its edges (added exudates). The vascularity includes all sizes of vessels from swollen capillaries (which are easily distinguishable with the ophthalmoscope) to vessels almost as large as the trunk on which the tubercle is located. Then, very gradually the reddish gray area shrinks, becomes lighter in color, less vascular, and more transparent so that the fundus red shows through. Finally, the lesion fades away completely, leaving the vessels, the choroid and apparently the retina in the same condition as before the attack. This fact of complete resolution of some retinal foci of infection seems of great importance in its bearing on the possibility of complete healing of tuberculous lesions elsewhere in the body.

More frequently, the stage of peripheral vascularity and exudate does not go on to complete resolution. The gray mass becomes whiter but not transparent. It extends in certain directions, developing into a band or connecting bands of brilliant white fibrous tissue, on the surface of which stand out sharply a reduced number of blood vessels, often still quite tortuous. This condition, known as retinitis proliferans, appears to be quite permanent. It has been observed many years after the original focal infection and period of hemorrhage.

The development of such masses of white fibrous tissue generally, perhaps always, follows hemorrhage. Hemorrhage is at first quite absent from these retinal lesions, although in most cases the loss of vision caused by hemorrhage is the first thing that brings the patient under observation. This is extremely interesting when we remember the long controversy in which many famous names were marshaled in support of the view that hemoptysis was the cause of phthisis. It seems always to be present in cases of retinal tuberculosis; and it is probable that in a majority of cases, massive hemorrhage occurs, arresting attention by great reduction of vision.

The hemorrhage is first observed several days or weeks after the first retinal lesion. In Finnoff's case, which was seen very early on account of corneal lesions

and eye strain, the first hemorrhage was found at about the fourth week. From the time they begin they continue to recur so long as the disease remains active, often for many months or years. The tendency to the formation of white fibrous tissue is closely connected with the occurrence of relatively large hemorrhages. Hemorrhage, so far from being the cause of the disease, is one of the defensive resources of the organism, although very disastrous to sight when occurring in this situation. I have twice seen it occur within forty-eight hours after therapeutic subcutaneous doses of tuberculin.

The focus of infection may occur in any part of the eye. In the skin of the lids it has the varied characters of lupus, and in the conjunctiva almost as wide a variety. In both of these structures the lesion is apt to depart rather widely from the typical tubercle; both here and in tuberculosis of the lacrimal passages it is generally difficult, and sometimes impossible, to distinguish the bacillus by the usual staining methods. I would suggest that in these lesions the search be carried on with the help of other than the Ziehl stain. In the cornea, a nonvascular tissue, tuberculosis generally appears as an extension from the anterior chamber, iris or ciliary body. Occasionally the focus has seemed to be originally in the substance of the optic nerve, although much more commonly in the neural sheaths.

UNRECOGNIZED TUBERCULOUS INFECTIONS

From what has been observed in the eye, the part of the body most completely open to observation, the statement seems justified that the tuberculous focus of infection may be found, and may first attract attention, in any organ or tissue of the body. This is generally admitted. What is not generally appreciated is the fact that tuberculous focal infections do occur and pass unrecognized in other parts of the body more frequently than they do in the lungs, lymph glands, spine and hip joint, where they are generally recognized.

The great obstacle to the recognition of a tuberculous focal infection where we are not looking for it has been the fact that there was no tuberculosis where we expected to find it. In one case of ocular tuberculosis, failure to react to tuberculin tests and the absence of any signs of the disease in lungs, bones, joints or notably enlarged glands was supposed by a competent internist to rule out tuberculosis. But a few months later the opening of the skull for organic brain disease revealed a tuberculous meningitis. The diagnostic use of tuberculin is known to fail us sometimes in pulmonary and general miliary tuberculosis. We must admit that its negative showings do not rule out a tuberculous focus of infection in some other part of the body, where such a focus would be less likely to be thought of.

It may be that Naegeli's statistics, showing that, up to the age of 18, 97 per cent. of all persons coming to necropsy have suffered from some focus of tuberculous infection, do not apply generally, and exaggerate the prevalence of such infections. However, only a belief in some such prevalence will eliminate a large number of errors of diagnosis in the direction of failure to recognize such lesions.

When, a few years ago, I had tuberculin given for a chronic choroidal lesion, the reaction of pain and swelling in the metatarsophalangeal joint of the great toe helped to confirm the diagnosis; it revealed a lesion that otherwise would have escaped attention, or its

significance would never have been thought of by the patient. Probably this "confirmation" would have left the diagnosis of tuberculosis subject to a great deal of skepticism on the part of doubting colleagues. But such skepticism would hardly have stood up against the severe tuberculous pleurisy that this patient developed with a new focus in the choroid six years later.

My experiences with tuberculosis have disposed me to look widely for its foci of infection, and accept its great chronicity and prolonged latency or arrest. A woman was supposed to have phthisis in her early twenties, and early death was anticipated. One of her brothers and a sister had died of the disease. But her husband, a farmer, got her a horse and buggy which were always kept for her own use. She scandalized her country neighbors by the amount of time she spent driving about. She always had a cough; and when she died at over 75 years of age, necropsy revealed cavities, calcareous and cheesy nodules, and other foci which were active.

Early in my general practice, I assisted at a necropsy of a patient who died of phthisis; the attending physician explained to us that he expected to find in one kidney the evidence of a tuberculous infection that he had diagnosed as a kidney lesion more than twenty years before. We found there the calcareous and cheesy masses, with active tubercles. Another patient had suffered and apparently recovered from a tuberculous pleurisy ten years before the onset of discoverable pulmonary symptoms that ended three years later in death from phthisis. If there is one lesson of my professional life that stands out more strongly than any other, and which seems to deserve all the emphasis that can possibly be put on it, it is that an enormous number of tuberculous focal infections occur in persons not considered tuberculous by themselves, their friends, or even their physicians.

Perhaps not every one is tuberculous; but successful diagnosis requires that every one presenting symptoms which might arise from a tuberculous focal infection should be assumed tuberculous until the contrary is proved. Above all, we must get away from the error of letting family history, recent exposure, favorable conditions of life, or apparent recent health, influence our judgment of the probabilities of the existence of a focus of tuberculous infection somewhere within the body. All these things are invoked to prove that a lesion is not tuberculous; and they all tend to prevent the recognition of unusual or minor infections.

PATH OF INFECTION

Some very practical points are connected with this conception of tuberculosis as a focal infection. It has often been asked whether the lesion was primary or secondary, and on the answer to this it was sought to decide the plan of treatment. Excision of tuberculous foci in glands, bones, conjunctiva or eyeball has been fairly tried, sometimes with results a little better than those of nonoperative treatment, but in some cases with results distinctly worse.

There has been at times, and in certain people, an almost hysterical fear of the "contagiousness" of consumption, leading to folly and inhumanity in the treatment of those manifestly suffering from phthisis. Health regulations have been ruthlessly enforced by officials who carried in their own persons the active lesions or the latent focal infections of tuberculosis. Such fear and such regulations have been based on

suppositions regarding the channels by which tuberculosis is usually transmitted and enters the human body.

When we come to examine the facts, it becomes evident that we know very little about the path of infection. Two portals of entry have received much attention, the respiratory tract and the alimentary canal. But the facts that stand prominently forth in all the accumulated literature are: The tubercle bacillus gets entrance to the body usually long before any of the effects of its presence are recognizable, and often makes itself known first in the interior of the eye, in the head of the femur, or the bodies of the vertebrae. It has been known to enter the body without giving the slightest evidence at the point of entrance.

Possibly when the first manifestations are in a chain of lymph glands, as in the neck or mesentery, these point correctly to the portal of entry. But at the point of entrance there is no evidence of disease; primary tuberculosis of the tonsils or of the mucous lining of the intestine is of extreme rarity. In the great mass of cases the involvement of these surfaces is manifestly late and secondary.

Even in the lungs the evidence of lesion at the point of entrance is contradictory and inconclusive. In the human being, pulmonary tuberculosis is always discovered after the essential lesion has reached an advanced stage of evolution; or it is recognized after the lesion has run its course, broken down and is discharging bacilli. In animal experimentation there are great gaps between the inhalation of the bacilli, and the finding of lesions in the lung. With lupus, in many respects an aberrant form of tuberculosis, the beginning and course of the lesions ally it with internal focal infections rather than suggest that it is an initial lesion.

Only in the wartlike lesions that follow slight injuries to the hands of postmortem workers, and a few cases of tuberculosis of the conjunctiva, is the preponderance of evidence in favor of lesion at the site of entrance. There is just one case on record of tuberculous ulcer of the cornea following lesion from the nail of a tuberculous child.

The evidence we now have indicates that the point of entrance plays little part in determining the location of the primary focus of infection, unless possibly when this is some lymph gland. The bacilli find their way into the circulation without provoking reaction; and in some favorable situation, some point of lowered resistance, establish a colony, a focus of infection. The possibility of the development of such a lesion, and of its subsequent power for extension and general harm, lies in insufficient resistance of the body tissues.

IMMUNITY

The great majority of human beings, at least those living under the conditions of civilization, harbor tubercle bacilli at some time in their lives, just as every country that has attained a social organization harbors anarchists. It may be wise and right to reduce and keep down the infection to a minimum. But for the mass of us the only effective defense that stands between health and a generalized, acute miliary tuberculosis is a certain amount of tissue resistance, of tissue immunity; and it is toward understanding and building up this resistance that the war on tuberculosis must be more and more directed, if it is to be successful.

Some things we know about it: the value of outdoor living, sunshine, rest, alimentation, a cheerful disposition toward the events of life, the value of injecting a specific provocative (tuberculin), when this is not

furnished in sufficient quantity by the focus of infection. But surely there is a great deal more to be learned about this immunity; there is an immense field of labor for the medical profession, in forcing on the community the importance of the facts about it that we already know, and it is the duty of our civilization to see that by legal enactment, by social custom, by individual example, by universal teaching in our educational system, our knowledge is applied in the life of the people.

CONCLUSIONS

Briefly, we have learned that:

The different forms of this focal infection are one disease—the unity of tuberculosis.

A very large proportion of those who suffer such infections never suffer the conditions that were formerly recognized as tuberculous—phthisis, scrofula, bone disease, etc.

At its point of entrance, the tubercle bacillus very rarely provokes any reaction or excites a noticeable lesion.

Foci of infection are established within the bodies of a great many people, where they are kept in check by tissue resistance.

A MODIFIED TECHNIC IN OPERATION FOR OBLIQUE INGUINAL HERNIA

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GREAT LAKES, ILL.

This modification of standard technic for the operative cure of oblique inguinal hernia has been developed over a period of time. It is a product of gradual evolution, in which the basic features are classical; but by a successive adaptation and combination of features that in my experience and observation have been found desirable, the classic has undergone changes and variations. The results have proved quite uniformly successful and satisfactory.

DETAILS OF TECHNIC

STEP 1.—After the patient comes to the operating table, the site of the operation is twice painted with 5 per cent. picric acid in 95 per cent. alcohol. The landmarks of the operative field are located: the anterior superior spine of the ilium, pubic spine, middle of the base of the penis, Poupart's ligament, and the external inguinal ring. An



Fig. 1.—Exposure of aponeurosis of left external oblique, showing line of incision not entering the external ring. Ilio-inguinal nerve emerging through external ring.

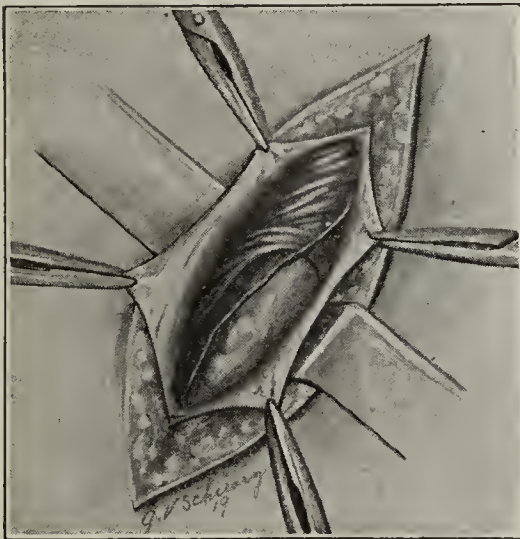


Fig. 2.—Incision has been made in aponeurosis, exposing internal oblique muscle, cord and ilio-inguinal nerve.

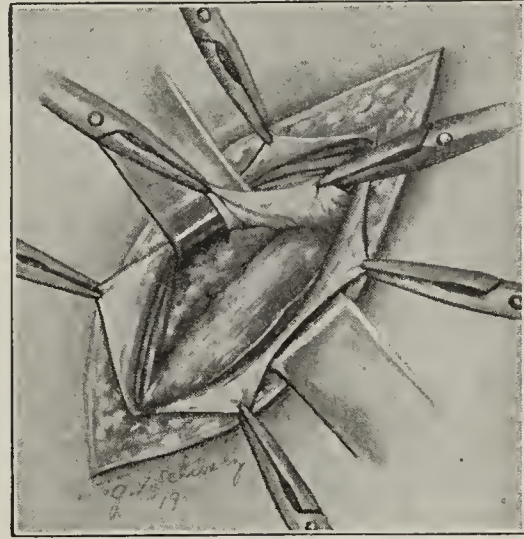


Fig. 3.—The internal oblique and transversalis muscles have been pulled upward, and peritoneum is caught with forceps; cord not disturbed.

The overcoming of tuberculosis is chiefly a matter of building up and sustaining immunity by wise and careful living.

318 Majestic Building.

Resolutions on Use of Vaccines in Influenza.—At a meeting of the sanitation committee of the Allegheny County Medical Society, a resolution was adopted to cooperate to the fullest extent with the Department of Public Health of Pittsburgh with whose action this committee is in complete accord. Another resolution provided that the committee indorse a request suggested by Major Davis that all physicians in the city of Pittsburgh report their cases of influenza. The committee announces its position with reference to the use of prophylactic vaccine in connection with the present possible epidemic of influenza as follows: 1. There is no evidence to show that any of the so-called prophylactic vaccines which have been used will prevent influenza. 2. No physician or other person has a right from the data on hand to guarantee protection to any individual because of the administration of a prophylactic vaccine for influenza or pneumonia. 3. It is possible that the antipneumococcus vaccine has value in the prevention of pneumonia. 4. Prophylactic vaccination to be protective should be completed before exposure to the disease.—*Bulletin Allegheny County (Pa.) Medical Society.*

incision is made through the skin and superficial fascia parallel to and about three-fourths inch above Poupart's ligament, extending from the external ring upward and out to about one inch beyond midline of Poupart's ligament. Superficial vessels are caught up and ligated. Vessels liable to be severed are the superficial epigastric and superficial external pudic arteries and veins. This incision exposes the aponeurosis of the external oblique and the external ring (Fig. 1). The aponeurosis should be well cleaned by wiping back the superficial tissues to Poupart's ligament below and about 1¼ inches above the incision. Care must be taken not to injure the ilio-inguinal nerve, which sometimes emerges through the aponeurosis above the external ring. The wound is thoroughly dried before the next step.

STEP 2.—An incision is made through the aponeurosis of the external oblique muscle, beginning about one-fourth inch above the external ring and continuing upward in the direction of the fibers of the aponeurosis or slightly across them toward Poupart's ligament to a point just beyond the internal ring (Fig. 2). By cutting slightly diagonally across the fibers, the exposure of underlying structures is facilitated. With the handle of the knife the inside of the aponeurosis is cleared first downward along the shelf of Poupart's ligament from the internal ring to the pubic spine, then upward exposing the internal oblique muscle, the internal ring, the conjoined tendon and the sheath of the rectus. Care must be taken not to injure the ilio-inguinal nerve

lying either along the cord or on the internal oblique muscle, or the iliohypogastric nerve which sometimes comes through the internal oblique muscle low down. Generally it is found in the upper external angle of the wound (Fig. 6).

STEP 3.—The handle of the knife is then placed between the conjoined tendon and the cord, and separates those structures and the muscles up to the internal ring.

STEP 4.—The internal oblique and transversalis are put on the stretch and a retractor is inserted to pull those muscles upward, exposing the peritoneum above the internal ring. This frequently bulges like a sac (Fig. 3).

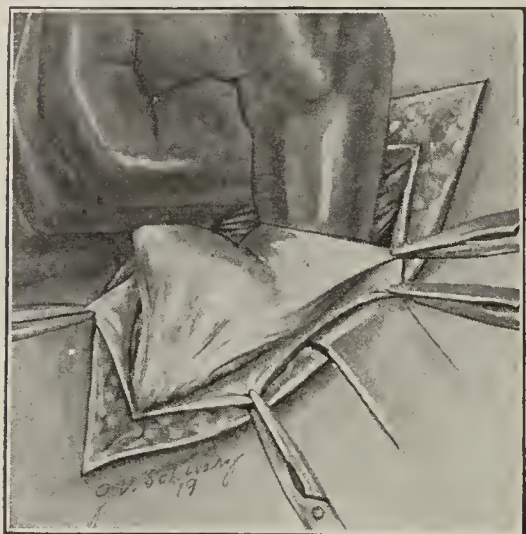


Fig. 4.—The peritoneum has been incised; the finger enters the sac from above downward; neck of sac is about at crook of finger.

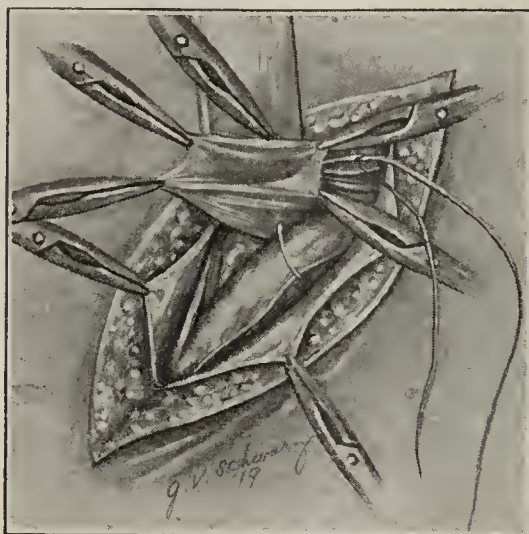


Fig. 5.—Sac being tied off well above neck, above incision in peritoneum. (This illustration represents a very small sac which has been split to its tip.)

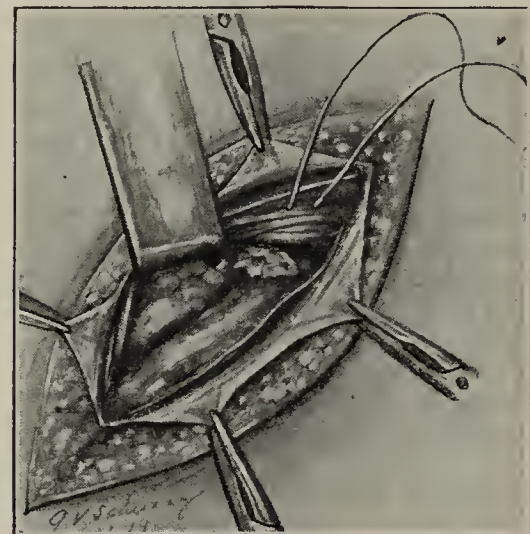


Fig. 6.—Dislocation upward of ligated peritoneal opening. The iliohypogastric nerve is shown in the upper angle of the wound lying on the internal oblique; it is frequently injured by suturing.

STEP 5.—The peritoneum is caught up and incised between two forceps. This incision is made in the peritoneum proper above the neck of the hernial sac, which can now be located by viewing it from above and by the insertion of a finger into the sac. This one step has greatly facilitated the search for the sac; in fact, no search is needed.

STEP 6.—The finger is inserted into the sac from above, and the sac is freed from surrounding tissues by gauze dissection (Fig. 4).

STEP 7.—The sac is then ligated by transfixion in the usual manner, but the ligature surrounds the opening in the

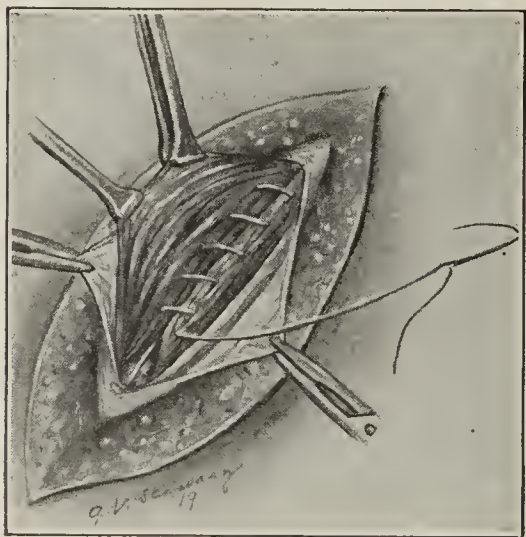


Fig. 7.—Free borders of the internal oblique and transversalis muscles are caught together and everted, exposing posterior surface; upper edge of cremaster is sutured to posterior surface of transversalis about three-fourths inch from the border; the cord is buried beneath the cremaster.

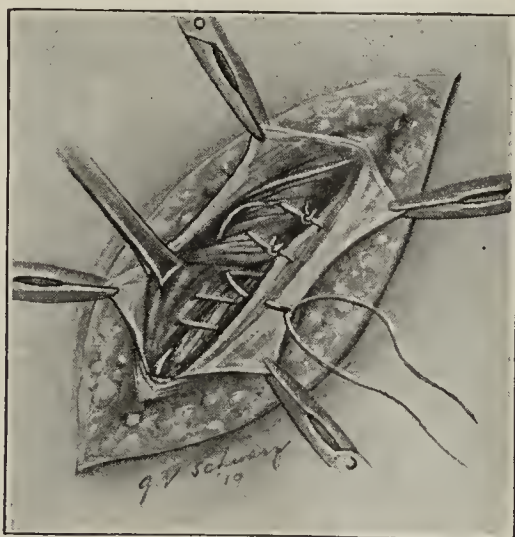


Fig. 8.—Free borders of internal oblique and transversalis muscles are sutured to shelf of Poupart's ligament.

STEP 9.—The free borders of the internal oblique and the transversalis are caught together in two forceps and turned upward, exposing the posterior surfaces of these muscles, to which is sewn, at about three-fourths inch from the free border, the upper edge of the cremaster muscle, continuous small plain catgut being used (Fig. 7). This covers the cord down to a new ring just above the spine of the pubes. One should avoid catching the ilio-inguinal nerve in this suture.

STEP 10.—The free borders of the internal oblique and transversalis muscles and the conjoined tendon are now

united to the shelving portion of Poupart's ligament by chromic catgut or kangaroo tendon, substantial bites of the muscle being taken (Fig. 8). The sutures are tied without undue tension. The cord emerges over the pubic bone beneath the lowest suture. The two nerves mentioned should be avoided; frequently the iliohypogastric is quite low enough to be caught. The lowest suture should also include the external edge of the sheath of the rectus for strength, especially when the conjoined tendon is defective.

STEP 11.—The aponeurosis of the external oblique is brought together with plain catgut, if necessary, reinforced by imbrication. The external ring has not been molested. It is sometimes advisable to make it smaller by one or two sutures.

STEP 12.—The superficial tissues are closed by any of the usual methods.

ADVANTAGES OF THE TECHNIC

This method results in:

1. Easy and unmistakable location of the sac.
2. Assurance of the absolute removal of the entire sac *well above its neck*.
3. Removal of peritoneal pucker from the area of weakness by dislocating it upward beneath solid muscle.
4. Strong repair of the muscular and aponeurotic coverings.

U. S. Naval Hospital.

peritoneum, thus insuring absolutely the removal of every vestige of the sac (Fig. 5).

STEP 8.—The neck of the sac, or rather the pucker of peritoneum, is dislocated upward beneath the internal oblique and transversalis, the ends of the tie-off ligature being passed through those muscles about three-fourths inch above the internal ring (Fig. 6). The cord has not been disturbed nor removed from its bed.

Keep the Farmer Well.—A large part of the land in the richest sections of the South, and to a less extent in the North as well, is today partially or wholly unproductive on account of being overrun with malaria, with a consequent loss of millions of dollars. Every case of malaria or other efficiency reducing disease means that the output of food is appreciably reduced and that the shortage is immeasurably increased.—*Bulletin*, State Board of Health of Rhode Island, August, 1919.

SPINA BIFIDA OCCULTA IN A CHILD
WITH INCONTINENCE OF URINE
AND FECESIMPROVEMENT IN VESICAL CONTROL AFTER
OPERATION *

JEROME S. LEOPOLD, M.D.

NEW YORK

The great majority of cases of spina bifida occulta have been noted in early adult life; its presence in childhood is uncommon enough to warrant the publication of a report of an instance that came under my observation.

According to Brickner,¹ "spina bifida means bifid spine, and that individual has a spina bifida who has a cleft in the spine whether or not there is a protrusion of the spinal structures." The term "spina bifida occulta" was first employed by Virchow in 1875, when he reported a case of spina bifida with the lesion concealed beneath the skin.

Since reading Brickner's article it has been our routine procedure to have roentgen-ray examinations made of the spine in all children presenting partial or complete incontinence of urine. As a result, the positive diagnosis in the case here reported was promptly arrived at. It is our firm conviction that not a few cases of enuresis in children are due to spina bifida occulta.

REPORT OF CASE

History.—E. F., girl, aged 6 years, admitted to the A. Jacobi Division for Children of the Lenox Hill Hospital, May 1, 1919, was born after normal labor, birth weight unknown. She was artificially fed; the first tooth appeared at 7 months. The patient talked and walked when 1 year old. She had had varicella and measles, and had always been irritable and "nervous." Eight months before the tonsils and adenoids had been removed. An older brother had had chorea, and had always been irritable, and now had nocturnal enuresis. The mother was poorly developed and of a nervous temperament. She had had no miscarriages. The father had syphilis ten years before (four years before the birth of our patient) for which he received treatment at this hospital.

The present illness started about one year prior to admission, when the patient was 5 years old. She began to lose bladder control at various times. Interference with vesical function gradually became more constant, and was soon accompanied by rectal incontinence. These symptoms became progressively worse, so that at the time of admission to the hospital there was almost complete loss of control both of the bladder and the rectum. There had been no remissions or intermissions. The patient had suffered no injury, nor was there a history of any illness to which the present complaint could be referred. The child was well advanced at school, and played and talked with other children in a normal fashion.

Examination.—On admission to the hospital, the child was fairly well developed, weighed 36 pounds, and the general condition was good. The general physical examination was negative.

Nervous system: The knee jerks were very active. There was no ankle clonus, and no Babinski phenomenon nor other abnormal reflexes. The superficial abdominal reflexes were present. No sensory and no motor disturbances were discovered after a very thorough examination, in which the patient coordinated well.

Back: There was a fairly well marked, compensated left lateral scoliosis with some asymmetry of the left chest-wall,

posteriorly. Over the upper part of the right buttock, just to one side of the median line, there was a small blind pocket or dimpling of the skin. Hypertrichosis, often associated with spina bifida occulta, was absent. There were no trophic disturbances.

The Wassermann reaction of the blood and the Schick test were negative. The von Pirquet reaction was positive. The urine was negative. The blood examination on admission was: white cells, 8,000; polymorphonuclears, 40 per cent., and lymphocytes, 60 per cent.

Roentgen-ray examination by Dr. W. H. Stewart disclosed a typical spina bifida, the upper arches of the sacrum being lacking, as shown in the accompanying illustration.

The chief points of interest in this case were: (1) the history of one year's duration of loss of bladder and rectal control; (2) the blind pocket or dimple in the skin over the sacrum, and (3) the positive roentgen-ray findings.

The history of incontinence together with the presence of a small dimple in the skin just over the sacrum made us very certain that we were dealing with a case



Spina bifida of the sacrum, with a distinct cleft in the first sacral arch and the absence of the remaining sacral arches.

of spina bifida occulta. The roentgen-ray examination, which showed a distinct cleft in the first sacral arch and the absence of the remaining sacral arches, confirmed the diagnosis.

According to C. H. Frazier,² symptoms in spina bifida occulta may be present at birth, but more often they do not appear until early adult life, when the membranous band between the cord and the epidermis begins to compress or pull on the cord and nerve roots. There may be present motor, sensory or trophic disturbances in the lower extremities. Incontinence of the bladder and rectum are often present. At times there are defects and malformations in other parts of the body.

In this connection it may be of interest to mention that Brickner divides cases of spina bifida occulta into these groups: (1) with external signs and with symptoms; (2) with external signs without symptoms; (3) without external signs with symptoms, and (4) with-

* From the A. Jacobi Division for Children of the Lenox Hill Hospital.

1. Brickner, W. M.: Am. J. M. Sc. 155: 473 (April) 1918.

2. Frazier, C. H.: Surgery of the Spine and Spinal Cord, New York, D. Appleton & Co., 1918.

out external signs without symptoms. According to this classification, our patient comes under Group 1, since there were present external signs (dimple) with symptoms of incontinence.

In some reported cases of spina bifida occulta with symptoms of disturbed sphincteric control, and in others with severe trophic disturbances in which lipomatous tumors and hernias of the cauda equina were found, operative procedures have been of great benefit. At times, simple separation of the membranous bands between the cord and epidermis has resulted in relief of all symptoms.

Course and Treatment.—During a period of three weeks' observation in the hospital, the patient manifested loss of bladder and rectal control, practically daily. In view of the fact that the disturbed sphincteric control had been increasing progressively during the year's illness, an exploratory operation seemed advisable. Accordingly, three weeks after admission to the hospital, operation was performed by Drs. Willy Meyer and W. M. Brickner. A semicircular incision was made through the skin and subcutaneous tissue over the sacral region. The incision started at the level of the first sacral vertebra, curved to the right, and ended at the last sacral vertebra, so that the concavity was toward the median line. The skin flap was reflected, and the incision was extended upward in the right paravertebral line to the last lumbar vertebra. The fascia over the sacral ligaments was divided in the median line and retracted. A small amount of fatty tissue was removed from the field. Examination then revealed the cleft in the laminal arch of the first sacral vertebra. Furthermore, the remaining sacral arches were practically absent, the defect increasing in diameter as the exposure was extended toward the anus. The operative field consisted of a view of the posterior aspect of the body of the sacrum, the sacral canal being exposed to view.

The laminal arch of the fifth lumbar vertebra was resected with bone forceps to obtain better exposure. No advantage was gained by this procedure, as the spinal canal ended at the fifth lumbar-first sacral intervertebral space, and it was decided that to open the spinal canal would be of no avail. The condition was judged to be beyond surgical relief. The fascia was sutured with chromic cutgut, the subcutaneous layers were sutured with plain gut suture, and the skin was closed with silkworm gut.

The findings at operation corroborated the roentgen-ray examination in a very precise manner. While the bony defect was easily recognizable, the nerve lesion, if there was such, was not discovered.

In this case there was no hernia of the cauda equina, and no fatty tumor.

Postoperative Course.—During the four weeks following operation, while the patient remained in the hospital, there was no incontinence of urine or feces. She was then sent home, and for one week she had complete control of the rectum and bladder. After that period, however, she lost control of the rectum, and this condition has persisted up to the last report, which was five months after the operation. For some unexplained reason, however, the patient since operation has retained full control of the bladder function.

In view of the operative findings, it is difficult to see how the operation could have had any effect. One can only advance the suggestion that possibly the fixed scarlike dimple in the skin over the bifid spine resulted in a tug on the membranous posterior wall of the sacral canal and thereby affected some of the roots of the cauda equina concerned with vesical function. If this was so, the separation of this puckered area from the underlying sacral canal, as carried out at operation, may have had the described effect on bladder control.

701 Madison Avenue.

MESENTERIC, OR ENTEROGENOUS, CYST

CHARLES STANLEY WHITE, M.D.

WASHINGTON, D. C.

The infrequency of the mesenteric, or enterogenous, cyst and the obscurity of the symptoms are indicated by citing the statement of Miller,¹ that but thirty-five cases were reported up to 1913, and in none of the cases was the diagnosis made prior to operation or necropsy.

The etiology remains clouded, diverse views still obtaining, chiefly expressed as dilatations of mesenteric lymphatics and sequestration of the enteric canal. Briefly stated, the histologic characters differ somewhat; the cyst wall is devoid of mucous membrane in several of the reported cases, and these have fostered the opinion that the growth is entirely mesenteric. In the majority, however, the lining of the cyst bears a close resemblance to the epithelium of the intestine, even to the extent of containing villi and muscle fibers. The tumor is invariably congenital and situated at the mesenteric attachment of the small intestine. By some it is believed to be an erratic development of Meckel's diverticulum.

The symptoms are those of a movable tumor or intestinal obstruction and frequently an amalgamation

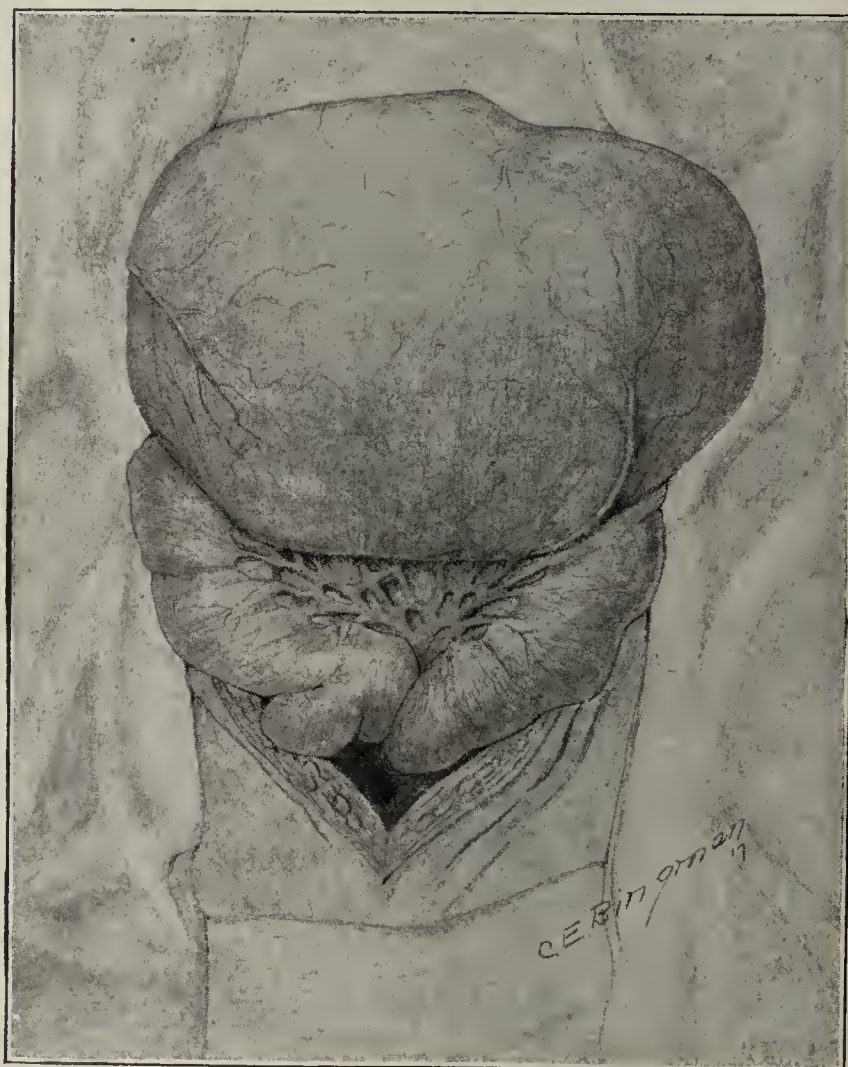


Fig. 1.—Intimate relation of cyst to intestine.

of the two entities, and it is because of its protean characteristics that the proper interpretation of the symptoms is not easy. So frank are its manifestations of obstruction that any other diagnosis is impossible in some instances, while, on the other hand, a movable tumor in any quadrant of the abdomen forces the conclusion that we are dealing with a floating kidney,

1. Miller: Bull. Johns Hopkins Hosp. 24: 316, 1913.

ovarian cyst, enlarged gallbladder or pedunculated uterine tumor. So variable are the symptoms that few remain which are pathognomonic.

REPORT OF CASE

A boy, aged 4 years, was first seen in December, 1914, and at this time no diagnosis was made. Dr. E. P. Copeland

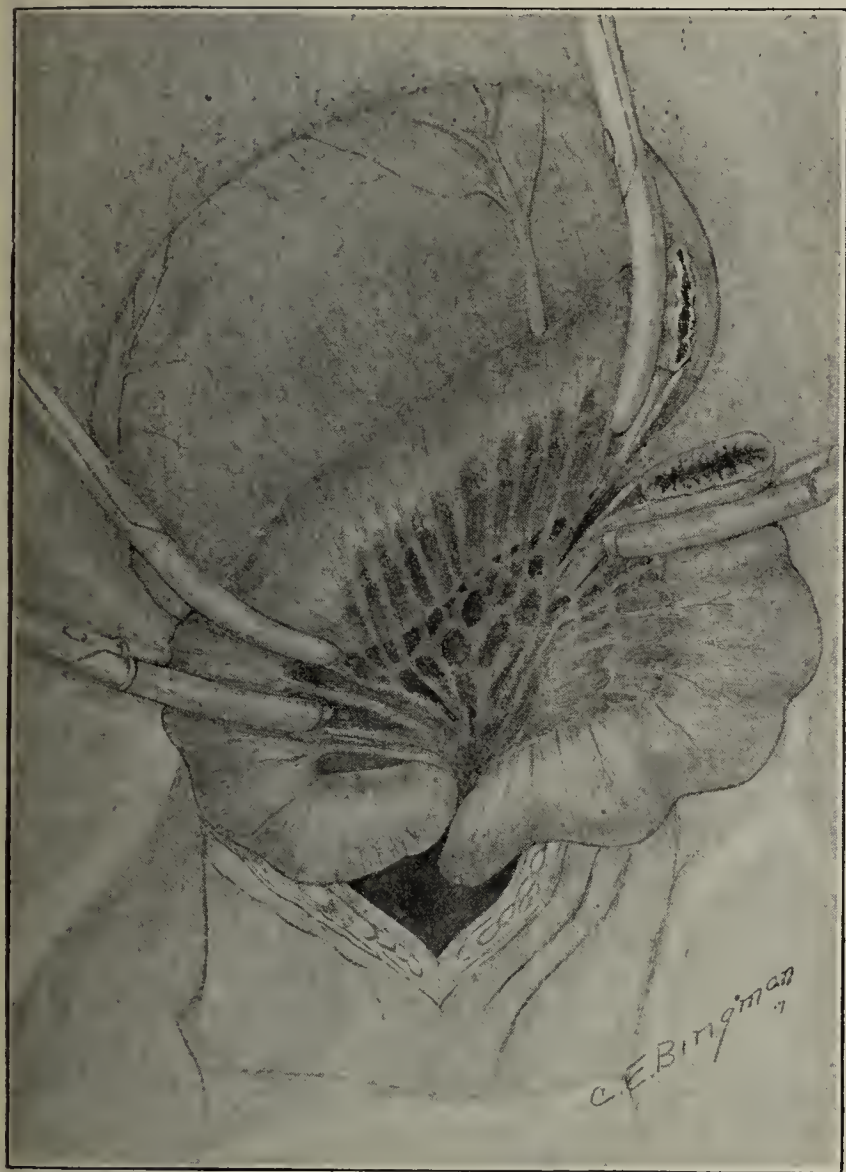


Fig. 2.—Cyst detached.

assumed charge of the patient and later reported the case.² It is with his permission that the following paragraphs are incorporated here:

"In December, 1914, approximately a year before my first examination, the patient became suddenly ill in the night, with an attack characterized by extreme nausea and severe vomiting and the appearance of a rounded tumor in the hypogastrium, simulating a distended bladder. The vomiting, to judge from the description, was simply bile-stained gastric juice and at no time stercoraceous. The tumor was elastic, but not especially tender to touch. There was no history of previous disturbance in the regularity of the bowel, as to constipation or diarrhea. Fever was not present.

"The physician called at the time had evidently made a diagnosis of intussusception and had completed plans for an immediate removal to the hospital for operation. Returning a few hours later for the patient, he had been, as could be well imagined, much surprised to find that the mass had spontaneously disappeared and the patient recovered.

"After this initial appearance, these attacks had recurred at varying intervals, seldom less than three weeks and on several occasions as long as six weeks. They had varied in the severity of associated symptoms and likewise in duration, seldom, however, lasting over two days. The tumor had invariably appeared first over the region of the bladder, sometimes larger, sometimes smaller, moved about the abdomen spontaneously, and finally disappeared. Its appearance had always been associated with nausea and vomiting, and its disappear-

ance with a pronounced paroxysm of abdominal pain. Following the first attack there had been some tendency to constipation, but the bowels had been kept freely open by the daily employment of mineral oil by mouth. The diet had been well regulated, and in the intervals the patient had quickly recovered lost weight. Ordinarily the child was quite normal, played actively, and appeared in good health. No prodromal symptoms had been observed.

"At the time of the first examination, I found the patient in bed lying on his back, thighs partially flexed. The attack was several hours old, and there was still some nausea. Presenting in the hypogastrium was a smooth tumor about the size of an orange, elastic, but not tender to touch, and dull on percussion. It was palpable by rectal examination and suggested strongly a distended bladder. The mass was, however, freely movable, it being possible, without undue force, to manipulate it about the entire abdomen. There was a fairly well-pronounced beading of the ribs. The pulse rate was rapid, but regular. The temperature normal. A leukocyte count gave 11,500. The von Pirquet and Wassermann tests were negative. No further significant facts were observed.

"Under restricted feeding and large enemas slowly administered, the mass spontaneously disappeared. An examination of the abdomen subsequently was absolutely negative."

The roentgenologist made an exhaustive roentgen-ray study, and concludes his report in this manner:

"Finding: A tumor mass the size of a large orange is palpated in the right upper quadrant. The bismuth injection showed the mass to be redundant descending colon. Visualized palpation reduced the tumor."

Dr. William Gerry Morgan, in March, 1917, examined the patient and found a movable tumor, with intermittent attacks of intestinal obstruction. At this time the hemoglobin was 83; red cells, 5,950,000; white cells, 11,600; polymorphonuclears, 67.5 per cent.; lymphocytes, 18 per cent. The urine contained albumin, indican, urea, 3 per cent., casts and excess of urates.

Dr. Francis Hagner saw the child in consultation, and suggested a possible cyst of the urachus.

On operation, April 4, 1917, an enterogenous tumor of the ileum was found about the size of a baseball. It was impos-

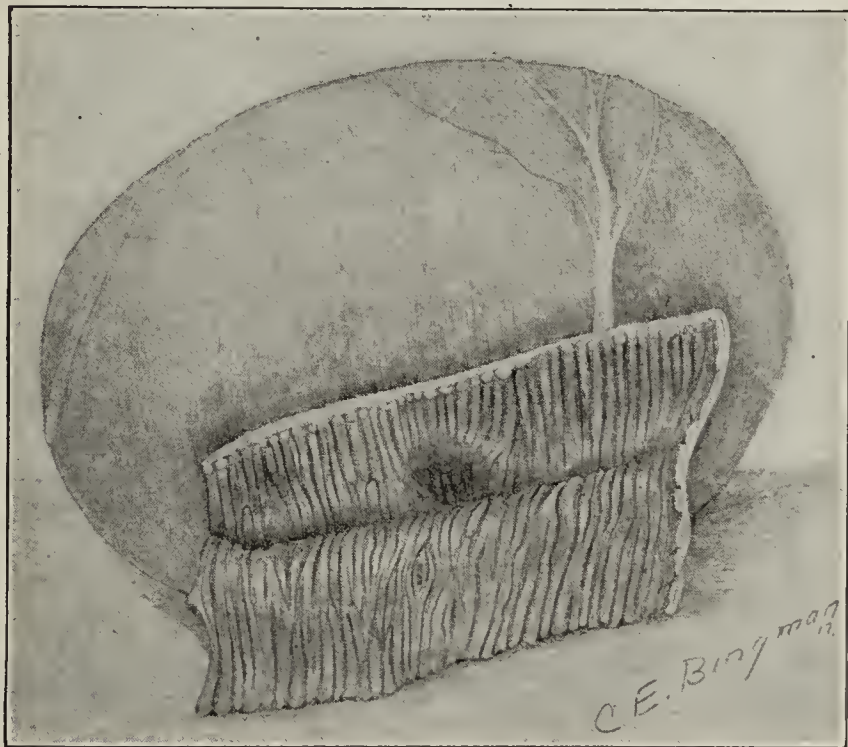


Fig. 3.—Interior of cyst.

sible to shell it out, and the only feasible operation was resection of the bowel. The child made a smooth recovery and has been well since.

Dr Lindsay reported as follows:

"Large cyst with membranous attachment, taken from the mesentery. On gross section, wall of cyst and mesentery have thickness of 0.5 cm. Cyst wall resembles similar sections of thickened intestine or stomach wall. There is a blood clot adherent to the wall internally directly opposite

2. Acker, G. N., and Copeland, E. P.: Transient Abdominal Tumor in a Child of Five Years with Redundant Colon, *Am. J. Dis. Child.* 12: 602 (Dec.) 1916.

the mesenteric attachment. Sections in regions of blood clot show muscular and fibrous tissue with a hemorrhagic area corresponding to the clot. The surface is covered with a layer of fibrin containing blood cells and a narrow layer at one point in outline resembling the intestinal mucous membrane, though gland elements are not present. Sections at region of mesenteric attachment show quite well preserved layer of mucous membrane, long villi and deep crypts being definitely recognized. Beneath this is a layer of muscle. None of the sections show evidence of malignancy."

COMMENT

The symptoms were consistent with the conditions found at operation. The tumor, while not communicating with the intestinal canal, probably varied in size at times owing to the torsion produced on either side when it rotated on an axis parallel with the intestine; and the same torsion was responsible for the enteric obstruction. It may well be compared to a hammock which had been turned over, twisting its supporting ropes.

The conspicuous and significant symptoms were the resilient, freely movable tumor with intestinal obstruc-

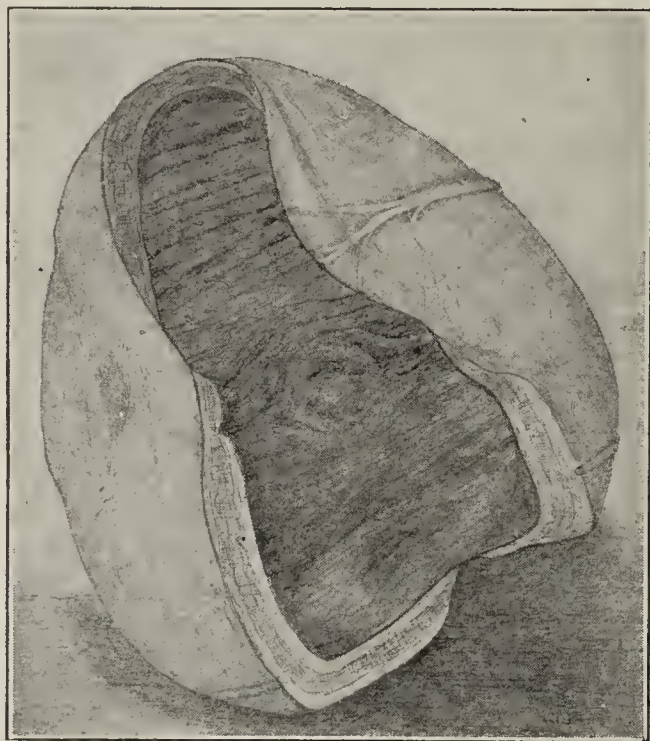


Fig. 4.—Relative thickness of cyst wall.

tion of an intermittent type, a low leukocyte count, sudden onset and rapid recovery in each attack, and the age of the patient, 6 years. The roentgen ray was of no aid, but on the contrary was misleading, as the dilated colon noted in the roentgenologist's report was undoubtedly small intestine, filled by bismuth through an incompetent ileocecal valve.

911 Sixteenth Street.

Cleansing Arsphenamin Apparatus.—DR. JOHN B. DONALDSON, Lorain, Ohio, writes: After giving arsphenamin or neo-arsphenamin injections I always disconnect the rubber tubing and run hot water through it for a few minutes as well as washing the glassware; but I have noticed that if the connected outfit is allowed to stand with distilled water in the arsphenamin side, quite a yellow tinge develops in the water. This indicates that there may be sufficient arsphenamin or neo-arsphenamin in the container and tubing to decompose and produce a toxic reaction at the next administration unless thorough washing is done. I have recently run sterile distilled water through the outfit before using as an extra precaution. It is to be inferred that we clean the intravenous outfit before sterilizing it; but the point I wish to bring out is that the thoroughness with which it is done is more necessary than I had supposed.

THE MYENTERIC NERVE NET

A DISCUSSION

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From biologic studies it must be inferred that the sole reason for life—vegetable, animal and human—is to continue the species, and that man's superior brain and body are for the purpose of better protecting the germ plasm as well as for social life, the pleasure of work and the joy of mental effort. We worship the mind and its products, and outwardly we suppress the instincts begotten by Nature. We might be deprived of all but the essentials, circulation, digestion and reproduction, and yet maintain the race as do the lower animals. Man lives but to propagate.

These primitive essentials, all important for life and its perpetuation, are carefully secluded and separated from the outward man, which is under the control of a wilful and highly developed nervous system: such intercommunication as exists being entirely beyond the control of the mind. The actions and functions of these three sets of organs are largely autonomic, and in the history of all time it is noted that they are the oldest.

The biology of the kinetic systems of the heart and genitalia have been well stated, but not that of the enteric system.

EMBRYOLOGY OF ENTERIC SYSTEM

About the end of the second week after fecundation, the first evidence of the stomach is found, the development of the intestine following out a definite plan of evolution. As in early life we have the stomach without the intestine, so in early fetal life we have the stomach first; then from it extends progressively the intestinal tube down to meet the hindgut. It has been evolving since the beginning of life and has felt the influence of conditions which tend to modify as well as create, so that the digestive apparatus, as a result of evolution, is the simplest and most perfect, the tissues entering into its structure being still primitive. Evolution invariably develops simplicity of structure and function in the end; and in this instance there is no exception, but a wonderful demonstration of the relation of simple tissue to the essential needs of a highly developed animal.

In the 10 mm. embryo the circular muscular layer of the intestine is first demonstrated, the longitudinal layer appearing in the 75 mm. embryo. Between these two layers from the mesenchyme is developed a syncytium out of which further develops the intestinal tract. On the inner side can be seen the spindle cell muscle extending to the circular layer, and on the outer side similar cells extending to the longitudinal layer. In this mesenchyme develop all the other tissues which go to form the structure of the intestinal wall: blood vessels, lymphatics, fibrous tissue and nerve net.

Early in embryonal life there bud out ventrally from the spinal ganglions prolongations which become the sympathetic plexus. From it, cells migrate farther inward to the intestinal tract to enter its structure. From the hind brain (the intestine being close to it in early life) there wanders a nerve which also passes to the intestine and through its walls, terminating in numerous gray ganglions approximated to the longi-

tudinal layer. Because of the wanderings of this nervous structure it is later called the vagus.

As the intestine grows from above downward, it passes by an accumulation of nonstriated fibers, which eventually go to the skin and subdermal tissues. Part of this dermal muscular mass is picked up by the intestine and carried down with it, later to be found at the three sphincter points: pylorus, ileocecal and internal anus.

We have a third type of muscular tissue developed in the intestinal tract. To understand it, we must go back again to biology. In the nine months during which the egg grows into the mature child, all the changes and steps which life has undergone in eons are recapitulated. Morphologically and histologically, we see in the developing fetus much that can be found in the lower forms of life; and by studying low life we often come to a better understanding of conditions in the human.

In the sponge, we have evidence of muscular action. The microscope discovers no nerve tissue, but a muscle cell which is neuromuscular, having the properties of irritability, contractility and conductibility. It will receive an impression, contract, and call on neighboring muscular tissue also to contract. In forms higher up, such as the anemone and starfish, we find end organs which receive impressions and filaments that look like nerves running to the muscular cell. Somewhat higher in the scale we find ganglions, so that we have a nerve ganglion connected with muscle resulting in more efficient action. This type of nerve is called neuroid.

From the processes of development and from microscopic demonstrations one would judge that the neuroid fibers developed from the muscular. Certainly with this type of muscular tissue there is a great deal in common. Keith has discovered in the intestinal tract this primitive type of neuromuscle, particularly noticeable at points of polarization: the cardiac end of the stomach, pylorus, ileocecal region and large intestine. This neuromuscular tissue is difficult to differentiate from nerve tissue.

Through the entire intestinal tract, from the beginning of the smooth fiber muscles in the esophagus to the rectum, we find a definite close mesh of what has been called nervous tissue, discovered by Auerbach and named for him. It is slender, flattened, covered by endothelial membrane and connected with the ganglions which are the termination of the pneumogastric and the terminal filaments of the sympathetic nerves. It is also connected with the neuromuscular tissue of Keith.

The deductions from Keith's work are that this plexus, or nerve net, is really a modified muscular tissue, a syncytium retaining its connections from early embryonal life, that it developed in the mesenchyme and from the mesenchyme, that it did not migrate in with the sympathetic nor with the pneumogastric nerve, and that it differs from other nervous tissue histologically, chemically, embryologically, biologically, and in innervation and staining properties.

It is analogous, if not similar, to the nerve net of the heart, which is connected with and activated by the sinu-auricular node and the bundle of His, which we know stimulate the heart action through the Purkinje fibers.

It can be seen that in the intestinal tract we have developed conditions which will permit of slow and

conservative adjustment to the vegetative processes demanded of it; that we have three types of muscular tissue which are serving a different purpose, three types of nervous tissue, all coordinating and cooperating, yet independent.

PHYSIOLOGY OF THE INTESTINE

The physiology of the intestine is that of its component parts. We have, as stated before, three types of smooth muscular cells in the body, and chemically and embryologically we note the difference. In the skin, in the structures which have developed from the wolffian body and the duct of Mueller, and in the sphincters of the intestine, we have the dermal type; in the remainder of the intestine, in the heart and in the spleen, the second type; and in the neuromuscular tissue of Keith, the third. All of these have different biologic properties and physiologic actions.

All cell activity is maintained by the electrolytes circulating in the blood. The sodium in particular has the property of developing electrical forces, especially in the type of muscle cell we have under consideration. The calcium electrolyte controls the effect of the sodium salt, if too active. The several muscle cells react differently to this physicochemical process, and all tissue of this type is constantly contracting and relaxing as a result of this stimulation. It is termed embryonal because early in embryonal life, before there is any nerve tissue formed, the primitive muscle cells are contracting and relaxing. This is seen in the cardiac tube and in the primitive stomach, and biologically we find the same conditions existing in lower forms of life.

As the content of the stomach, acid in reaction, passes into the duodenum and encounters an alkaline fluid, it effervesces and becomes frothy. This increases the amount of distention and acts as an irritant to the muscle cell. Myogenic contractions occur, contractions which are independent even of the nerve net. They are slow, not forceful, and do not produce marked anemia of the substance. Then there is gentle relaxation; this process is repeated until apparently fatigue of muscle ensues; then it stops and is taken up elsewhere in the intestinal tract. This is the rhythmic movement of the physiologist. If the distention is greater, the nerve net is called into action and we have initiated the peristaltic wave, first noted by Cannon and best explained by Sherrington. In the body, when the flexor muscle is called on for action, there is an inhibitory effect thrown on the extensor in order that the flexor may act. This is true also in the intestine. If a contraction is to be instituted in any part, induced by the net, as the flow of nerve energy is always peripheral, toward the anus, there will be a relaxation of the muscles distal to the point of contraction, thus enabling the intestinal content to be more easily pushed forward.

There are times when not only the circular but also the longitudinal fibers are brought into action. This produces a peculiar motion which is termed the pendulum. The neuromuscular cells are pace makers and tonus givers. Contractility is not their only function. They serve better to transform nerve energy into muscle action at certain points. The tonus just distal to each point of polarization in this type of muscle cell is always increased. Irritability and contractility are greater. Peristaltic waves are more pronounced. A section removed from the duodenum or upper ileum

shortens itself and curls over on the edges more than a section taken farther down. Placed in proper fluid, it will retain its rhythmic contractions much longer.

In the upper intestinal tract it is a wise provision, because there the enzymes are abundant and imperfectly mixed and proper digestion and chemical changes cannot occur. The tonus is poor in the lower part of the intestine in order that there may be delay and sufficient absorption of the chyme before it passes over into the large intestine.

The tonus of the large intestine is produced by the polarization of the terminal ileum. In all animals, particularly in those that eat vegetables, the cecum has a direct ratio to the stomach in importance. It is here, in the colon, that we have instituted absorption of fluids which control dehydration and calcium metabolism. The appendix as well as the cecum is highly provided with nerve net, the pneumogastric ganglions and smooth muscle fibers, controverting in this the prevailing sentiment that the appendix is degenerating.

The sphincter muscle is a law unto itself. The pneumogastric muscle has no effect whatever on it. Irritation of the sympathetic nervous system causes its contraction, and the only thing that will open the sphincter is the passing down of a proper peristaltic wave.

The sympathetic nervous system inhibits the activities of the intestine with the exception of the sphincters. When irritated, out of the chromaffin bodies we have secreted epinephrin, the hormone of the sympathetic nervous system, and all activity of the intestinal tract is quieted. It becomes flaccid, its tone is diminished, and there is distention of its lumen from its gassy content. This may be for a period of rest, or it may develop a pathologic condition when long continued.

The vagus is the motor nerve of the intestine. Biologically and physiologically it is a nerve of wondrous action, connecting up the different vegetative viscera, keeping up a proper activity and tonus. In some of the lower animals it is the activating nerve to the electrical organs, and we can appreciate how the electrical discharges down through this nerve (because all nerve force is electrical) to the ganglions, which are distributed through the entire nerve net, can induce so much tone and action.

There are times when this becomes very evident, in conditions which are known as peristaltic unrest, when the bowels are moving rapidly and continuously. If they contain gas, the noises are audible. Wave follows wave. Then, perhaps suddenly all is quiet. Again, there may be times when the sympathetic nervous system closes the sphincter, the pneumogastric nerve producing a peristaltic condition almost choreic, when for hours or days there will be a tremendous churning of the intestines. Gradually it will quiet down, the sphincter will open, and there will be the usual passage on of content.

There is a wave, appreciated only by delicate instruments, which runs down the entire length of the intestine. The veins of the intestine, as they pass through the fibrous tissue into the mesentery, are provided with valves, as are the lymphatics. Every time the intestine contracts, the blood is forced into the veins and up to the liver. Mall has studied this action very carefully, and considers that the intestine is the heart or circulatory organ of the liver, and the lymphatic system of the intestinal tract. In order that there may be circu-

lation of blood and of lymph when the intestine is apparently quiescent, this wave, which comes down the entire length of the intestinal canal, acts and is a reminder of the primitive heart.

PATHOLOGIC CONDITIONS

In 1705, Hook published a work in which he suggested that it may be possible to discover the motions of the internal parts of the body by the sounds they make. Cannon, it is said, used to retire with his stethoscope on his abdomen, going to sleep listening to the sounds and studying them. Some of our writers state that auscultation of the abdomen is valueless and nothing important is heard or discovered; but I have made it a point for a number of years to auscultate every abdomen that has any enteric process. Generally, little of value is heard; but there are times when conditions are noted which are of immense importance. Conditions of peristaltic unrest are not understood except through auscultation. Simulations of intestinal obstruction can be differentiated only in this way. The atonic state of the intestine, so common in women, will give us sounds that are a clue to the condition existing.

When there seems to be a true ileus, when we have a case of "acute abdomen" in which we suspect obstruction, frequent auscultation is of much value. As soon as we hear a tinkle, then we should feel quite sure that an operation will be demanded, or if on putting the ear just above the pubes, we hear the heart sounds as distinctly as at the epigastrium, there should not be an hour's delay. It is possible that by frequent and studied observation of the sounds of the abdomen more points of importance may be discovered.

The myenteric net, being partly nerve tissue and partly neuromuscular, and being indirectly connected with the nervous system, is completely autonomic. It is a separate nervous system, controlled to a certain extent and kept within bounds of energy action by the sympathetic nervous system on the one side and by the motor nerve, the vagus, on the other. Most of the work the intestine is called on to perform is accomplished through the nerve net. Stimuli coming to it from the intestine, and chemical irritations of the mucous membrane to the terminal filaments of nerve there, may pass up to the submucous plexus and then on to the myenteric net.

The activities of this net are more pronounced and more easily induced when put on a stretch—an inheritance from its ancestors in lower life. If the intestine is exposed to the air, there follows a rapid evaporation of the carbon dioxide from the contained fluids (carbonic acid being the hormone of the nerve net, the same as epinephrin is of the sympathetic, and as cholin, a derivative of lecithin, seems to be of the vagus). Without the carbonic acid in the substance of the intestinal wall, there is inactivity of the nerve net, a parietic condition lasting indefinitely, and an inability to contract against the gases formed in the intestinal lumen, working toward the condition surgically known as ileus.

The intestine is a mesial organ. It is very long, and in its development it takes on convolutions, the large intestine passing over to the right and descending, ordinarily becoming attached to the posterior wall without a mesentery, the cecum being found at the brim of the pelvis. In this region there are perhaps more defects of development than in any other part of the body. Sometimes it is an overgrowth of cecum, allowing it

to drop deeply into the pelvis, with the production of a certain amount of drag and disturbance of the sensitive polarized area at the terminal ileum.

The intestine is held in position by embryonal bands, some passing over to the colon and giving it support, others passing up on the mesentery of the terminal end of the ileum. The cecum is generally free. The stress of the upright position may occasionally convert this normal fibrous tissue into pathologic tissue, later contracting, and in its contraction disturbing the relations of the intestine and apparently interfering with its action.

The roentgenologist in viewing the upper abdomen discovers dilated duodenum, and the surgeon also has noted the frequency of this condition. Both find a correlation between it and that which disturbs the tissues at the ileocecal region, whether bands or ptosis. Every case of ceco-appendicular deformity, so called chronic appendicitis, met in my experience, has been associated with dilated duodenum, disturbed gastric action and gastric flatulence, often associated with a type of cholecystitis, and not infrequently with a spastic condition of the descending colon.

It is curious to look back into the history of this region and see how at one time we regarded these bands and attachments as being primarily pathologic. Only a year or two before the war, Lane was removing the entire colon for what he called not an anatomic but a physiologic perversion: mutilating surgery which seems today quite unnecessary; for certainly very few colectomies now take place, and those who used to exhibit their long tubes now keep them in their darkest closet.

Before attempting to relieve a person of distressing symptoms by operative means which may be mutilating, we should try to gather in our minds with great accuracy the conditions which may be the origin of the trouble, and to know the component parts of the myenteric net and their functions, as well as their pathology.

One forceful thing was recently brought out by Crile, namely, that sturdy exercising in the open, building up the musculature of the body, making it stronger by feeding it more oxygen, had a very evident effect on the intestine. Consequently there must also be some effect on the neuromuscular tissue and the nerve net.

CONCLUSION

A few generations ago the physician occupied the whole field, both medicine and surgery; then gradually the specialties developed. As medicine grew, the result of animal experimentation and growth of other sciences, specialties grew, so that now we have an overgrowth of specialization, with a tendency to build a trench around each. In all these years we have been taught of the microcosm and the interrelation of tissues; yet in our active work we practically forget it. The time has come when we must accede to the overlapping, and in our practice as well as in our writings begin to knit the different specialties together, so that practice and study may not be warped by a biased point of view. The working out of this paper was greatly embarrassed because of the fact that the embryologist paid little attention to histology, and neither he nor the histologist to physiology. Comparative anatomy was seldom referred to, yet a knowledge of them all is necessary for a proper understanding of the architecture and function of the myenteric nerve net.

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INTRATHORACIC HODGKIN'S DISEASE: ITS ROENTGEN DIAGNOSIS

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The typical case of Hodgkin's disease with its enlargement of external lymph nodes is readily recognized as such clinically. The disease assumes at times, however, clinical types which may deviate from the usual form. Uncertainty of diagnosis may then arise, especially in the cases in which external lymphomas are poorly developed or absent. We have especially in mind the cases of abdominal Hodgkin's disease, or the splenomegalic form, in which the diagnosis may remain in doubt for some time unless external lymph nodes are available for section.

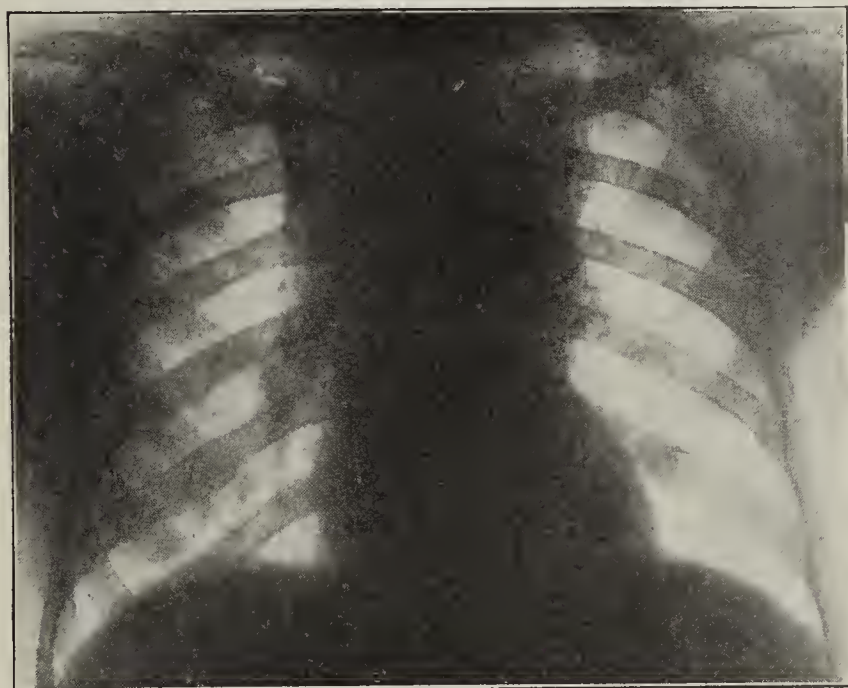


Fig. 1.—Mediastinal tumor type.

In view of the known frequency of involvement of the intrathoracic lymph nodes it is not unnatural to suppose that an examination of the chest might furnish some clarifying data in these doubtful or atypical cases. When we take stock, however, of the means at our disposal for the recognition of intrathoracic Hodgkin's disease, the limitations of the ordinary physical examination become apparent. Usually only the large tumor-like masses in the chest, by their size and location, are calculated to produce symptoms and physical signs, and even these may remain latent. Further, these signs and symptoms may furnish by themselves no clue to the nature of the disease, as they are common to all forms of mediastinal or pulmonary new growth. We have accordingly availed ourselves of the roentgen-ray examination in the study of twenty-five cases of Hodgkin's disease in order to determine the frequency of intrathoracic involvement and especially to ascertain whether the roentgenogram offers anything characteristic which may be of help in the diagnosis of doubtful and atypical cases.

In the first place, changes within the chest in cases of Hodgkin's disease are found with great frequency. Thus in the twenty-five cases reported, distinct evi-

dence of enlargement of the intrathoracic nodes or involvement of other lymphatic tissue was invariably found in the roentgenogram. It should be emphasized at this point that by enlargement of the bronchial nodes is to be understood, not the adenopathy normally and



Fig. 2.—Infiltrative type.

regularly found in adults, but rather an alteration in the size, shape and density of the shadows which leaves no doubt as to the existence of disease.

TYPES OF INTRATHORACIC HODGKIN'S DISEASE

The changes which we have noted on the chest plates of cases of Hodgkin's disease may be classified under four types, the significance and frequency of which will be indicated.

1. *Mediastinal Tumor.*—Thoracic Hodgkin's disease may appear on the roentgen plate typically as a mediastinal tumor. Large massive shadows are seen extend-

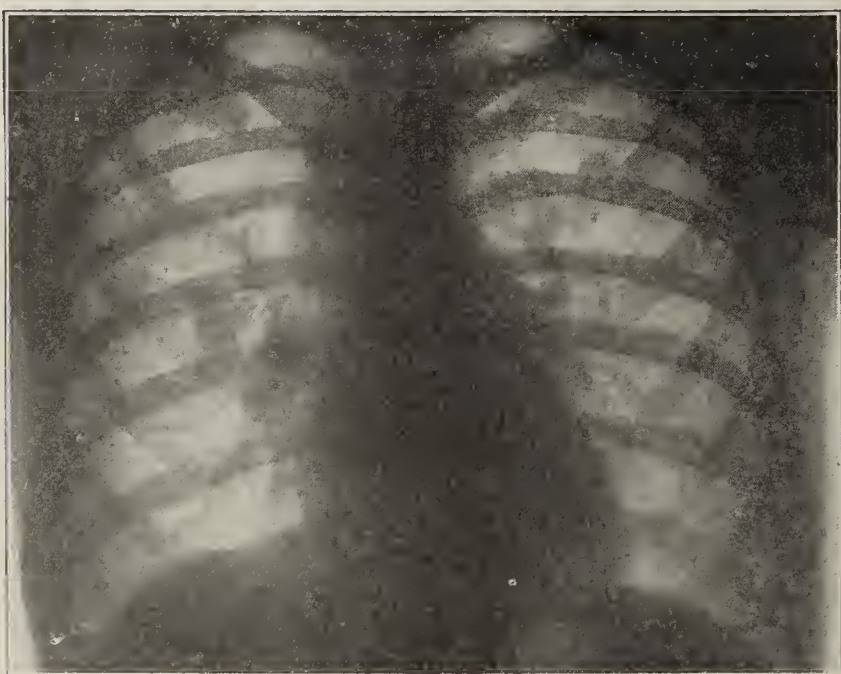


Fig. 3.—Isolated foci in right and left lungs; large bronchial nodes and paratracheal nodes.

ing outward from the mediastinum into the lungs; they have smooth or lobulated borders and show little or no evidence of the individual component lymph nodes (Fig. 1). Such shadows were present in eight of the cases. By themselves they offer nothing characteristic of Hodgkin's disease and cannot be distin-

guished from other mediastinal growths, such as lymphosarcoma.

2. *The Infiltrative Type.*—In this form of Hodgkin's disease the lymphomatous tissue appears to invade the neighboring lung very much as a malignant neoplasm (Fig. 2). It is doubtful whether this is a true invasion of the lung; it is not improbable that in this form of the disease there is a diffuse transformation of the intrapulmonary lymphoid tissue into granuloma. However, on the roentgen plate the borders of the apparently infiltrating mass are indistinct and irregular and appear to grow into the lung. This is an infrequent form of the disease, and it occurred in only four cases.

3. *Isolated Nodules or Metastases in the Lung.*—In a small number of cases there are seen in the pulmonary fields, and having no connection with the mediastinum, circular or oval shadows of moderate density. They are usually small, from one to several centimeters in diameter. By themselves, they are not to be distinguished from metastatic new growths in the lungs (Figs. 3 and 4).



Fig. 4.—Large right bronchial nodes; small isolated deposits in right upper lobe and in left lower lobe; large substernal thyroid.

The invariable presence, however, of lymphomatous masses at the roots of the lungs, next to be described, usually renders possible their recognition as a form of Hodgkin's disease. This type was found in four cases, always in association with one of the other forms of the disease. In accordance with the commonly accepted belief, these shadows do not represent true metastases, but are rather autochthonous foci developing in preexisting pulmonary lymphoid tissue.

4. *Discrete Nodes at the Roots of the Lungs.*—The most common form of Hodgkin's disease of the chest is the analogue of the external glandular enlargement and consists, like it, of masses of more or less discrete nodes at the roots of the lungs. It was present in seventeen cases. On the roentgenogram it provides, in typical cases, some points of distinction from other forms of adenopathy.

The shadows extend often for a considerable distance from the roots of the lungs, and individual nodes or groups of nodes retain their outline. It is characteristic of the shadows that they are faint; and in

this respect they differ from those of new growth and tuberculosis. They are particularly distinguishable from the latter by an absence of caseation and calcification. Tuberculous nodes, when they have achieved the size of those found at the hilum in Hodgkin's disease, are invariably cheesy, and the shadows are irregular and of great density. For this reason, large lobulated shadows at the roots of the lungs which are faint and homogeneous raise a strong presumption of Hodgkin's disease, a presumption which will be strengthened if there are found outlying deposits in the lungs, such as were described under Type 3. The various groups of nodes may be involved, the bronchial, bifurcation or bronchopulmonary (Figs. 4, 5, 6 and 7). Of greatest interest, however, is an involvement of the right paratracheal nodes which occurs so frequently in Hodgkin's disease as to acquire a major importance in the diagnosis. It occurred in no less than fourteen cases, either alone as a solitary manifestation of intrathoracic disease or, as was usually the case, in association with the other forms of the disease previously described (Figs. 3, 5 and 7).



Fig. 5.—Large lymphomatous mass at the root of the right lung; very large paratracheal nodes; case clinically simulated splenic anemia.

ENLARGEMENT OF PARATRACHEAL NODES

Enlargement of the paratracheal nodes is such a relatively rare phenomenon in intrathoracic disease as to warrant a slight digression at this point. Normally there is found on the right side of the trachea, just above the eparterial bronchus, a small group of lymph nodes. Owing to their deep situation, when they become enlarged they cannot be felt by palpation, nor do they produce physical signs. A moderate enlargement of these nodes, however, becomes noticeable on the roentgenogram by the production of a characteristic shadow. It is remarkable that the paratracheal nodes rarely participate in the enlargement of other groups of intrathoracic nodes. In a large number of cases of pulmonary and mediastinal new growths which have come under our observation, the paratracheal nodes were involved only once, and in this case they were only slightly increased in size. In pulmonary tuberculosis in adults in whom the bronchial nodes are usually affected, we can recall perhaps two or three cases of many thousands in which the paratracheal nodes were involved. In infants and children, on the contrary, these nodes are more often affected by the tuberculous

process, and they may then achieve a considerable size and give rise to dyspnea and stridor.

In Hodgkin's disease, these nodes appear on the plate as an oval shadow situated always to the right side of the trachea, in the upper mediastinum and below the

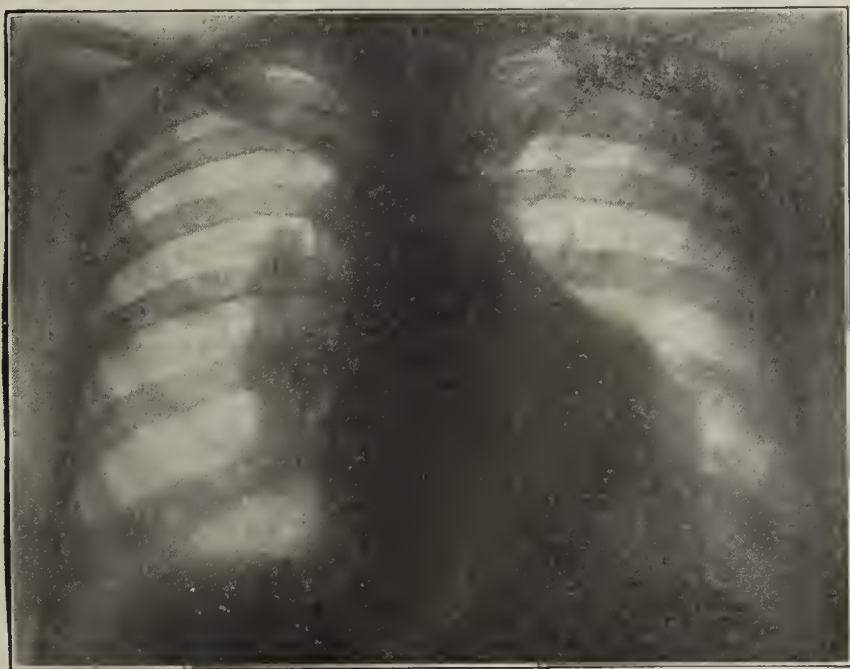


Fig. 6.—Large masses of nodes at both roots, on the left side extending beyond the left border of the heart; small paratracheal nodes.

sternal end of the clavicle. It varies in size from that of an almond to a hen's egg, and it is homogeneous in density.

We believe that the great frequency of involvement of these nodes in Hodgkin's disease, occurring in more than 50 per cent. of our cases, and its great rarity in other diseases with which it may be confused, may be of value in the diagnosis of obscure cases. We have in mind particularly those cases of splenic and abdominal Hodgkin's disease in which external glandular enlargement does not appear prominently in the clinical picture. A case of this type is illustrated in Figure



Fig. 7.—Large paratracheal nodes; lymphoma at the right root; small isolated foci in the right upper lobe.

5, in which the enormous spleen overshadowed the few cervical lymph nodes and simulated a splenic anemia.

The paratracheal nodes may be involved relatively early in the disease. On the other hand, they may persist after treatment when practically all other lymph nodes have receded. In a recent case, in which a small

recurrence developed at the angle of the jaw several years after apparent cure by roentgen-ray treatment, the plate showed the paratracheal nodes enlarged to the size of a walnut.

CONCLUSIONS

1. A large percentage of the cases of Hodgkin's disease have demonstrable intrathoracic lymphomas.

2. Although the roentgenogram in some cases presents nothing characteristic, in a considerable number a distinction from other forms of new growth or glandular enlargement can be made.

3. There is a frequent and unique enlargement of the right paratracheal group of nodes which occurs only rarely in other diseases.

4. In doubtful or atypical cases of Hodgkin's disease, the roentgen-ray examination of the chest may help to establish the diagnosis.

5. Roentgen-ray examination of the chest should be performed in all cases, before they are pronounced cured after treatment.

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HEMOLYTIC STREPTOCOCCI IN THE NORMAL THROAT AFTER TONSILLECTOMY*

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The rôle of hemolytic streptococci, especially as secondary invaders in such diseases as influenza, lobar pneumonia and measles, has been constantly emphasized in the reports of civil and military medical observers during the last two years. Hence it is a matter of importance to learn of the distribution of these organisms in normal throats under various conditions.

While most observers believe that the tonsils are often the site of growth of these organisms in normal throats, some maintain that even in normal throats the tonsils are practically always infected with hemolytic streptococci. There have recently been a number of reports of the incidence of hemolytic streptococci in normal nontonsillectomized throats as well as in throats after tonsillectomy. However, the results of many of these observations do not have much comparative value because of the failure of the investigators to include technical details in their reports. In 1906, Ruediger¹ found hemolytic streptococci in about 59 per cent. of normal throats, and Smillie² in 1917 reported very nearly the same proportion (50 per cent.). Since 1917 there have been many reports. Fox and Hamburger,³ and Levy and Alexander⁴ found that about 15 per cent. of recruits and about 83 per cent. of men who had been in service for some months were *Streptococcus hemolyticus* carriers, as shown by throat cultures. Surface smears from the tonsils and throats under various conditions have shown hemolytic streptococci to be present in normal throats in varying proportions of cases: Seventy per cent. were found positive by Irons

and Marine;⁵ 6 per cent. by Cumming, Spruit and Lynch;⁶ 28 per cent. by Nichols and Bryan;⁷ 22.5 per cent. by Opie and his co-workers;⁸ 44.5 per cent. by Blanton, Burhams and Hunter;⁹ 47 per cent. by Simmons and Taylor;¹⁰ 58 per cent. by Pilot and Davis;¹¹ and 57 per cent. by Tongs.¹² Blake¹³ reports that in the absence of streptococcus epidemics less than 10 per cent. of normal men in army camps harbor hemolytic streptococci in their throats, but that this proportion is increased by from 300 to 400 per cent. during streptococcus epidemics. It has also been shown that only cultures of the crypts of excised tonsils may reveal the organisms. Nichols and Bryan⁷ obtained positive crypt cultures in 75 per cent. of excised tonsils. Pilot and Davis¹¹ found that while hemolytic streptococci could be detected by surface swabbings of the tonsils in 61 per cent. of their cases, crypt cultures of the same hyperplastic tonsils after excision showed 97 per cent. to be infected by the organism. Similarly Tongs¹² pointed out that surface cultures of unexcised tonsils showed hemolytic streptococci in 60 per cent. of the cases, and that crypt cultures showed the organism in 83 per cent. of the same tonsils. Hence it is probable that in normal tonsils and throats hemolytic streptococci occur in even higher proportions than have been indicated.

The proportion of hemolytic streptococci in normal throats after tonsillectomy has been reported as being 13 per cent. by Nichols and Bryan;⁷ 23 per cent. by Simmons and Taylor;¹⁰ 15 per cent. by Pilot and Davis;¹¹ and 5 per cent. by Tongs.¹² All investigators who have examined throats after tonsillectomy agree that such throats harbor far fewer hemolytic streptococci than nontonsillectomized throats. I wish to report some observations on the incidence of hemolytic streptococci in the throats of tonsillectomized individuals in good health (Table 1).

TECHNIC

All throat cultures were thus made: A sterile cotton swab was gently but thoroughly rubbed against the walls of the tonsillar spaces, over the pharyngopalatine arch and the posterior wall of the pharynx, and at once used to inoculate an enrichment broth. This consisted of from 5 to 6 c.c. of plain broth (made with 15 gm. of Fairchild's sugar-free culture peptone, 5 gm. sodium chlorid, and distilled water sufficient to make 1,000 c.c.), to which had been added from 6 to 8 drops of defibrinated goat's blood. The organisms were cultivated for twenty-four hours in the enrichment broth, after which surface smears were made on 1.7 per cent. agar containing about 10 per cent. of defibrinated goat's blood, and shake cultures were prepared by

5. Irons, E. E., and Marine, David: Streptococcus Infections Following Measles and Other Conditions, J. A. M. A. **70**: 687 (March 9) 1918.

6. Cumming, J. G.; Spruit, C. B., and Lynch, Charles: The Pneumonias: Streptococcus and Pneumococcus Groups, J. A. M. A. **70**: 1066 (April 13) 1918.

7. Nichols, H. J., and Bryan, J. H.: The Tonsils as Foci of Infection in Streptococcus Hemolyticus Carriers, J. A. M. A. **71**: 1813 (Nov. 30) 1918.

8. Opie, E. L.; Freeman, A. W.; Blake, F. G.; Small, J. C., and Rivers, T. M.: Pneumonia at Camp Funston, J. A. M. A. **72**: 108 (Jan. 11) 1919.

9. Blanton, W. H.; Burhams, C. W., and Hunter, O. W.: Studies in Streptococcus Infections at Camp Custer, Mich., J. A. M. A. **72**: 1520 (May 24) 1919.

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13. Blake, F. G.: Relation of Streptococcus Hemolyticus Carriers to Streptococcus Epidemics in the Army, Ann. Otol., Rhinol. & Laryngol. **28**: 361 (June) 1919.

* From the John McCormick Institute for Infectious Diseases.

1. Ruediger, G. F.: Streptococci from Scarletinal and Normal Throats, J. Infect. Dis. **3**: 755, 1906.

2. Smillie, W. G.: Studies of Beta Hemolytic Streptococci, J. Infect. Dis. **20**: 45 (Jan.) 1917.

3. Fox, Herbert, and Hamburger, W. W.: The Streptococcus Epidemic at Camp Zachary Taylor, Ky., J. A. M. A. **70**: 1758 (June 8) 1918.

4. Levy, R. L., and Alexander, H. L.: Predisposition of Streptococcus Carriers to the Complications of Measles, J. A. M. A. **70**: 1827 (June 15) 1918.

inoculating and plating at 45 C. tubes of blood agar of similar composition. Like Tongs,¹² I found a somewhat larger proportion of hemolytic streptococci by the shake method than by the surface smear method. The plates were cultivated and observed for forty-eight hours. Organisms from hemolytic colonies when present were inoculated into plain broth, made as described, and after twenty-four hours' cultivation were again plated in blood agar by the shake method to observe the purity and hemolytic action of the strain. At the same time the staining

TABLE 1.—EXAMINATION FOR STREPTOCOCCUS HEMOLYTICUS

Case No.*	Age	Occupation	Time Since Removal of Tonsils	Result of Examination**
1†	25	Medical student	6 months	+β
2	31	Physician	3½ years	+α'
3†	23	Medical student	8 months	+β
4	24	Medical student	9 years	+α'
5	24	Medical student	2 months	—
6	26	Physician	3 months	—
7	24	Housewife	4 months	+α'
8	26	Medical student	7 months	—
9	24	Medical student	2 months	+α'
10‡	29	Physician	2 years	—
11	25	Medical student	11 years	—
12	27	Physician	6 months	+α'
13†	26	Physician	6 months	+β
14	26	Physician	6 months	+α'
15	25	Medical student	10 months	+α'
16	25	Physician	3 years	—
17	26	Physician	2½ years	+β
18	25	Physician	3½ years	—
19	24	Physician	2½ years	—
20†	23	Medical student	10 months	+α'
21	21	Medical student	1 year	+α'
22	23	Medical student	2 years	—
23	23	Medical student	—	—
24	24	Physician	7 months	—
25	33	Physician	5 years	+α'
26	22	Clerk	—	+β
27	24	Medical student	2 years	—
28	20	Formerly a sailor	1 year	—
29	31	—	2 years	—
30†	24	Medical student	9 days	—
31	22	Medical student	6 months	—
32	24	Medical student	7 months	—
33	25	Medical student	8 months	+β
34	11	School-girl	2 months	—
35	12	School-girl	2 months	—
36	26	Physician	4 years	+α'
37†	12	School-boy	2 weeks	+β
38	7	School-girl	3 months	+β
39†	24	Medical student	7 months	+α'
40	24	Medical student	2½ years	+α'
41§	22	—	5 years	+α'
42	28	Medical student	2 years	—
43	23	Medical student	1¼ years	+α'
44	27	Physician	2 years	—
45	27	Physician	6 months	—
46	16	Student	7 years	—
47	22	Medical student	9 years	—
48§	23	Medical student	12 years	—
49†	22	Student	8 years	—
50	21	Student	10 years	—
51	20	Student	4¼ years	—
52	22	Student	3 years	—
53	24	Student	15 years	+α'
54	21	Student	5 years	—
55	19	Student	7 years	+β

*Cases 7, 34, 35, 38 and 55 were female, all others were male. The general condition of all was good.
** In this column +β indicates presence of streptococcus hemolyticus β; +α' presence of *S. hemolyticus* α' and — negative results.
† Throat somewhat inflamed.
‡ Lingual tonsil present.
§ Some regeneration from tonsillar remnants.

reactions and morphology of the broth cultures were studied. From the same broth cultures, blood agar slants of 1.7 per cent. agar containing about 5 per cent. of defibrinated goat's blood were inoculated and kept at a temperature of 37 C. for twenty-four hours, after which they were sealed with paraffin and corks and placed in an ice-box for later use in fermentation tests.
The hemolytic streptococci found were gram-positive organisms which in broth formed chains of from five to sixty cocci, each strain forming chains of approximately the same length. Definite differences in the size of the individual cocci were common. On blood agar were noticed chiefly two types of colonies: one

markedly hemolytic, the individual colonies being surrounded after twenty-four hours by a hemolytic zone from 2 to 4 mm. wide, and another considerably less hemolytic, its surrounding hemolytic zone being less clear and usually only about 1 mm. wide. Microscopic examination of these colonies under low power revealed the fact that, while all of the corpuscles in the hemolytic zone of the first type of colonies were completely hemolyzed, hemolysis was not quite complete in the hemolytic zone of colonies of the second type, and at the same time the corpuscles which were not hemolyzed were little discolored. The first type of colony resembled that described by Brown¹⁴ as the colony of the Beta (β) type of hemolytic streptococcus, the second resembled Brown's¹⁴ Alpha prime (α') type of hemolytic streptococcus. The organisms are so designated. After cultivation in the enrichment medium almost always there was a great preponderance of either the Alpha prime or the Beta type of organism when either was present.

FERMENTATION TESTS

In the performance of the fermentation tests, one loopful of a twenty-four hour broth culture of hemolytic streptococci from preserved blood agar slants was transferred to from 1 to 2 c.c. of the carbohydrate broth (plain broth as described, to which was added, each to the amount of 1 per cent., 5 per cent. litmus solution and carbohydrate). No raffinose was available. Observations were made over a period of eight days, although the fermentation reaction was practically always plain after three days. Twenty-one strains were tested by the fermentation reactions, and the results are illustrated in Table 2.

TABLE 2.—RESULTS OF FERMENTATION REACTIONS

Number of Strains	Glucose	Lactose	Mal-tose	Mannite	Plain	Saccharose	Salicin	Inulin
8	+	+	+	—	—	+	—	—
13	+	+	+	—	—	+	+	—

COMMENT AND CONCLUSIONS

In the series of tonsillectomized throats of individuals in good health it was found that in nine, or 16.1 per cent., there were markedly hemolytic streptococci. In sixteen, or 29 per cent., of the throats were the less markedly hemolytic streptococci resembling Brown's¹⁴ Alpha prime type. Thirty, or about 55 per cent., of the throats examined revealed no hemolytic streptococci. There seemed to be no significance in the time elapsing between the removal of the tonsils and the bacteriologic examination of the throat for hemolytic streptococci. In several of the cases the Beta type of hemolytic streptococci was present in the absence of clinically visible changes in the throats. The fermentation reactions of these streptococci were typical of hemolytic streptococci. According to the classification of hemolytic streptococci by fermentation reactions as suggested by Holman,¹⁵ the organisms tested would be divided into two groups, *Streptococcus anginosus* (fermenting lactose but not mannite and salicin) and *Streptococcus pyogenes* (fermenting lactose and salicin but not mannite).
The method employed in this work differs from that of most investigators in that a routine preliminary cultivation of the throat cultures in blood broth was made. While some reports mention streptococci whose

14. Brown, J. H.: The Use of Blood Agar for the Study of Streptococci, Monograph 9, Rockefeller Institute for Medical Research, 1919.
15. Holman, W. L.: Classification of Streptococci, J. Med. Res. 34: 377, 1916.

hemolytic action is incomplete (Alpha prime type), none give very definite data on the proportion of such organisms. The Beta type of hemolytic streptococcus is probably the type referred to by most authors as hemolytic. Hence my findings, namely, that 16.4 per cent. of the tonsillectomized throats harbored markedly hemolytic streptococci, while higher than those of Tongs¹² and lower than those of Simmons and Taylor,¹⁰ agree quite closely with the observations of Nichols and Bryan,⁷ and Pilot and Davis.¹¹

THE REHABILITATION OF A MEDICAL RESERVE FOR THE ARMY*

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WASHINGTON, D. C.

The United States Army is now facing what may appropriately be characterized as a period of critical transition. Demobilization of the vast war machine built up during the past two years has been more or less successfully accomplished.

The permanent personnel of the regular establishment would welcome a speedy return to a peace time basis and the development of a military organization capable of functioning efficiently. In one of the hearings before Congress, not long ago, some one tritely remarked that nearly every permanent officer these days is carrying about in his pocket an army reorganization bill—the figment of his own fertile imagination. It is to be hoped and confidently can be predicted that the Congress, by avoiding the “extremists,” will hit on a happy medium and enact a law that will permit the army to develop along the lines which the experience gained in the world war has demonstrated will best meet the needs of our national ideals. What is most earnestly to be hoped for is a law which will provide the framework of a real military policy—that will-o'-the-wisp which has always eluded us. Even an imperfect plan is better than none at all. Nations, like individuals, require a goal at which to aim. As a nation we have for a moment had a vision which has fired us to supreme effort. Are we going to lapse back into the old habit of drifting with the current, or are we going to remember the thousands of young men we have left behind in France and turn our thoughts to a constructive program which, if it does not keep us out of wars in the future, will at least prevent the needless sacrifice inseparable from our chronic state of unpreparedness?

Diligent efforts are being made by our national legislators to get at the meat of the nut and formulate a basic military law embodying as many as possible of the good features developed by our experience in the world war, and eliminating, or at least trying to eliminate, such defects as have been demonstrated.

“In time of peace prepare for war” still holds good. We fervently hope that the present generation has seen

the last of war on a big scale. Nevertheless, we are not prepared to admit that the millenium has arrived or that an army's usefulness, in spite of its *raison d'être*, terminates with a war, although a study of our military history would indicate that that belief is very generally held. An individual applying the same reasoning would discontinue all life insurance on recovery from a dangerous illness on the theory that all risk of death had passed. From out the welter of the past few years the one fact which must have been impressed on the mind of every American is the utter folly of ignoring the basic principles of national preparedness and national defense, and calmly awaiting a declaration of war before attempting even to assemble, train, equip and properly classify and distribute the enormous number of men called to the colors. Such a policy pursued long enough will certainly result in our undoing. We cannot always hope to find some other nation willing to step into the breach and hold off the foe for years while we fumble and grope, legislate and investigate, waste human lives because we have no clothing or blankets, and spend billions of dollars without visible result in a belated and frenzied rush to prepare. Constructive legislation is rendered increasingly difficult after each war. War loans place a heavy burden of taxation on the citizen, and therefore public expenditures must be curtailed. For many years before the late war, army appropriations were rather less than 10 per cent. of the interest now being paid on our war debt. Tax payers grumble but accept the situation philosophically, never pausing to analyze the matter sufficiently to see that a more generous and broad-minded treatment of the question of national defense in the past would in all probability have obviated the necessity of raising billions on billions of money to prosecute the war just ended.

Today all branches of the military service are confronted with important and pressing problems, on the wise solution of which our national safety in the future may rest. It is proposed in this paper to present two of these problems which, while of moment to the whole military establishment, are vital to the Medical Department.

FIRST PROBLEM: ESTABLISHMENT OF ADEQUATE REGULAR MEDICAL CORPS

The Regular Medical Corps must be recruited up to its full authorized strength. More than 700 vacancies now exist. Under present conditions of pay and promotion, an Army commission seems destined to go begging. Compared with the rewards now enjoyed by his brother practitioner in civil life, the career of his military prototype is one of relative renunciation. It is freely granted that service conditions must be made much more attractive for the embryo military officer. As a result of legislation probably to be enacted during the present session of Congress, in the matter of increase in pay and allowances and speedier promotion (Captain after three years' service), it is believed that we may soon be able to hold out to prospective candidates sufficient inducement for them to join the regular corps. An additional incentive, the details for the practical application of which are now being studied and developed in the Surgeon-General's Office, and which was recently commented on editorially in *THE JOURNAL*,¹ will be a provision whereby properly qualified men in Class A medical schools, on

* Note, Jan. 16, 1920.—Time mellows all things. Since completion of this article, sentiment among the Medical Reserve seems to have undergone a very decided change for the better, if the number of applications for commission now pouring into the War Department can be accepted as a criterion. At this date a total of 8,000 Medical Reserve officers have already been enrolled, and in addition there are about 4,000 applications on hand awaiting action.—The Authors.

1. Securing Officers for the Army Medical Corps, editorial, *J. A. M. A.* 73: 1845 (Dec. 13) 1919.

the termination of their fourth year of study, can be offered internships, carrying pay, in our larger military hospitals—this with a view to affording them opportunity, while finishing their hospital year, of gaining an insight into the different phases of military life and thus making the appointment a stepping stone to a commission in the regular corps. Furthermore, the day may not be as remote as one might at first think when we shall have to resort to some form of governmental subsidy for the education of such medical students as may elect military careers on the termination of their classical courses, and decide to qualify as medical officers of the army under the financial assistance provided for them by the government. With the Medical Corps of the permanent establishment up to its full authorized quota, our peace time obligations can be met.

SECOND PROBLEM: ESTABLISHMENT OF AN ADEQUATE MEDICAL RESERVE

The second and more important problem has been made the title of this paper. The number of names on the present roster of the Medical Reserve Corps is far from satisfactory. From our experience in the recent war, it is obvious that it must be built up in time of peace to a point far beyond that ever achieved by us in the past.

What are the prospects? Under present conditions we are constrained to confess that they are not very bright. Let us briefly review some of the causes which lead us to entertain such a pessimistic conclusion.

During the war there were enrolled in the army approximately 30,000 medical officers from civil life. Prior to his discharge, each officer was requested to signify his desire with regard to accepting a commission in the Medical Section of the Officers' Reserve Corps on the inactive list. Excluding some 1,500 officers still in temporary service, the latest figures at hand reveal that only 5,000 medical officers from civil life who saw active service during war at home or abroad have so far elected further affiliation with our army reserve. Of this number, when appointments were eventually sent out, about one third declined and returned the commissions offered them. To be exact—to date (Dec. 1, 1919) 3,787 acceptances and 1,261 declinations have been received.²

In one representative list of declinations taken at random from the files of the Surgeon-General's Office and containing 327 names, the commissions sent out but declined were: two in the grade of lieutenant-colonel, fifty-five major, 181 captain, and eighty-nine first lieutenant. (In this connection it is of interest to note that approximately one sixth of these commissions offered but declined were in field grades.) From the foregoing, it will be seen that thousands of experienced medical officers have been discharged and returned to their practices in civil life, leaving behind them in the minds of their former military associates no question of doubt as to the keenness of their desire for an absolute divorce from the military service. Many have left us with nothing but an expression of the bitterness in their hearts. Dissatisfaction over their lot while serving with the colors is common.

In justice to them it should be said that while combat activities were on, they served bravely and patiently even while smarting under what appeared to be injustice and lack of appreciation. With their duty to the country fulfilled in fullest measure of devotion, a wave

of revulsion swept over many of those about to be discharged. Immediately following the armistice, universal discontent and dissatisfaction became rampant among the reservists. Some spared no pains to voice their indignation and disgust at the lot which fell to them during the war and the situation in which they found themselves when the armistice anticlimax overwhelmed them. Disappointed, their sole aim was to get out of the army as quickly as possible and forget it.

In the matter of securing initial commission and subsequent promotion, "political influence," "wire pulling" and "peanut politics" were openly charged. As one man put it, "Why shouldn't a man become disgusted when he was made to realize that 'pull and bull' won out over patriotism and efficiency in the matter of securing commissions and promotion."

While in some respects the foregoing typical statements are somewhat far fetched, the basic causes of the discontent now pervading the ranks of our ex-reservists are clearly understood and deeply deplored by those in the regular service. There is a psychologic and pecuniary foundation that requires no further discussion here. The fact remains that a commission in the Medical Section of the Officers' Reserve Corps at this time seems to be unattractive to the majority of physicians in civil practice.

Even among those who do not harbor any ill feeling over their treatment in the army during the war—and they, we feel confident, constitute the majority—a statement frequently heard is that commissioned status on the reserve list as now provided for carries with it no special prestige or advantage, but on the contrary, certain restrictions or obligations that the average medical man in civil life prefers not to assume. Furthermore, he will tell you it was amply demonstrated in the recent war that when the country needed medical officers they promptly responded, no matter what the personal sacrifice may have been, and that they all continue to remain sufficiently loyal and patriotic to respond in the future to any call of the nation for aid in time of actual hostilities. At any rate, he is "fed up" on the army and turns a deaf ear toward any proposition which would necessitate any further interest in it.

Many of them cite or dwell at length on the fact that the older officers—in point of service—of the Reserve Corps who joined the colors at the beginning of the war found themselves after several years of faithful and efficient service returning to their homes junior in rank to medical officers who had not joined the reserve in time of peace and did not do so until the war was well along. In fact, the recriminations now being directed at this phase of the civilian medical practitioners' military service have a very considerable basis in fact and constitute the crux of the whole question. How this situation arose will not be discussed here. It is well, perhaps, to point out that the administrative difficulties of hastily expanding a corps of about 400 officers to one of 30,000 under the confusion of rapid preparation for war are very great.

When it is borne in mind that the public is apathetic in time of peace toward any measure of military preparation, and that it had been impossible to secure legislation outlining a military policy to meet such an emergency, it is not surprising that mistakes and injustices occurred. They always have occurred and they always will occur until such time as a definite plan for the mobilization of the nation can be worked out

2. See Footnote, p. 450.

and put into effect before the emergency is on us. It is illuminating and extremely significant to observe that the reserve officer places this item of relative rank high up among the desiderata meriting consideration, and accords to it practically as much importance as does the regular army man. This is a psychologic factor which must be given due weight in attempting to devise a corrective for the condition now existing.

For purpose of illustration let us assume that in time of emergency two practitioners in the same community volunteer their services. Both receive commissions as first lieutenants and both perform equally meritorious service. When their services are no longer required, both return to their homes to resume practice; one, however, is now a lieutenant-colonel, while the other is still a first lieutenant. If it happens that the latter is the older and had become a member of the Reserve Corps before the war, attended camps of instruction, etc., his feelings can be better imagined than described. Obviously there must be something radically wrong with any system which can permit such injustice to occur.

A just promotion policy had not been formulated in time of peace. Moreover, such a policy could not have been worked out for the reason that we had no basic military policy on which our war effort was to be built. Such a policy can be elaborated and enacted into law only by the government, and this each succeeding administration has failed to do. It is one of the saddest commentaries on this lack of a policy providing for preparation in time of peace that so many of those splendid medical men serving at the front with combat troops during the war receive little or no recognition in the way of promotion for hard and dangerous duty well done. Many of them rendered brilliant service throughout all the battles participated in by the American Expeditionary Forces and found themselves still in their original grades when the war ended. Others, firm in the belief of the holiness of the cause, made the great sacrifice. Undying glory and honor have been brought to the medical profession. While it was a great privilege to have been permitted to serve, we shall have failed in our simple duty if we do not attempt to profit by the lessons of the war.

Not once but hundreds of time have we been told by medical officers that this subject of relative rank in the home community carries great weight with them.

It is a safe assumption that the Medical Officers' Reserve Corps as now constituted and conducted does not offer any alluring inducements to the thousands of experienced men who are returning to civil life with valuable military experience. We can ill afford to lose their sympathetic cooperation, their interest, and the knowledge they acquired in following the devious ups and downs of a military career during the past two years. And in this connection it cannot be too strongly emphasized that the Medical Corps of the Army can achieve progress in the cause of medical preparedness only as it works in cooperation with the civil medical profession of the country. The war has shown us that the problems of the former are likewise the problems of the latter. The time has passed when any country can hire men to fight its battles, and other men to salvage the human wastage of war. It is well that both the medical officer of the army and his civilian brother should meditate on this aspect of the nation in arms.

If we adhere to generalities and assume that inequality of promotion and consequent disturbance in

relative rank had more than anything else to do with bringing about the existing disaffection, where lies the remedy? How can the Reserve Corps be made an instrument for preparing the civil practitioner to assume his military obligations with efficiency and justice to himself? Radical changes are necessary. As to that, the civil medical profession and the medical officer of the army are well aware. It remains, therefore, to determine on a remedy.

PROPOSED REORGANIZATION OF THE RESERVE

The Medical Corps of the Army sponsored the inauguration of the Reserve Corps idea in this country at the time when General Robert Maitland O'Reilly was Surgeon-General of the Army. Its pioneer work in having the bill of 1908 enacted was later emulated by other branches of the military and naval services. Existing legislation governing the Reserve Corps, while sound in principle, is far from satisfactory and needs amendment in a constructive fashion. Therefore, if we are again to have a happy, contented, well-balanced and proficient reserve, cooperating and working in close harmony with its parent organization, the Medical Corps of the Army must again step out and propose the establishment of a reserve system which will embody the results of experience under the original reserve act prior to and during the war, retaining its good features and eliminating its defects. Among the latter we are disposed to accord lack of provision for promotion first place.

Our proposition calls for the assistance and cooperation of the general staff at the War Department, since many of the features desired could be put into effect by that body without further recourse to Congress; but where the latter course is necessary, the enactment of such simple legislation as will permit us to arrange the list of Reserve Corps officers just as is done with officers of the Regular Corps. How can this be accomplished?

FIRST STEP: A LINEAL ROSTER FOR RESERVE OFFICERS

Place all medical reserve officers on one lineal list and thereby establish (among themselves) relative rank, just as is done in the case of officers in the regular establishment. All officers are to be commissioned in grades from colonel down to and including first lieutenant and arranged on the list in order of their rank and subsequently promoted according to seniority. The proportion between the various grades should be the same as now authorized for the Regular Medical Corps. (Present legal allowances in Medical Corps are: colonels, 3.16 per cent.; lieutenant-colonels, 5.42 per cent.; majors, 23.7 per cent.; captains and lieutenants, 67.72 per cent.)

After readjustment in rank of those now in the reserve, and of such former members of the reserve as may rejoin under this new scheme has been made as described below, all original appointments to the reserve, in peace or war, and irrespective of the age or professional standing of the applicant, shall be made only in the junior grade—that of first lieutenant—the new appointee to take his place on the lineal list at the foot of that grade. This provision would place a premium on early enrolment in the reserve and a penalty on temporizing or great delay. Once commissioned in the reserve, a young medical man's relative position on the list is established and he will always have precedence on the *peace time list* over

those subsequently joining. Let the recruit begin at the bottom while he is young, preferably just out of medical school.

However, some exceptions to this rule would have to be provided for. Any officer of the Regular Medical Corps or of the National Guard who resigns his commission or is discharged under honorable conditions should be admitted to the reserve list in the grade and with the corresponding lineal rank he held in those forces when discharged. Such increments should be carried as extra files until they can be absorbed in the annual readjustment.

In this connection it should be remembered that a medical man cannot hold two commissions. If he is a member of the reserve he must resign in order to accept a commission in the National Guard. By doing so he will create a vacancy in the reserve, to be filled by the promotion of those below him on the lineal list. If he subsequently resigns from the National Guard and desires to resume a reserve status, he should be recommissioned in the reserve in the grade and take his place on the list in the same position he would have occupied had he not left it.

HOW TO INAUGURATE THE ROSTER

1. At any time within one year after the passage of the proposed act, admit to this newly created Medical Section of the Officers' Reserve Corps, on their own application and in the highest grade occupied by them, all medical officers who served during the world war and are eligible for reserve commissions.

2. Equitably distribute the number of various grades as legally authorized, computed on the total number of officers enrolled in the Reserve Corps.

3. Redistribute grades for purposes of promotion annually, based on the total strength of the reserve at the end of each calendar year.

In the initial adjustment, it shall be provided, however, that the minimum number of field grades authorized shall not fall below the reserve on a million men, i. e., 7,000 medical officers. This proviso would permit us to start off with a reserve list of at least 221 colonels, 379 lieutenant-colonels, 1,659 majors, and the balance in captains and lieutenants. For a reserve enrolment of 14,000 medical officers, our allowance would be 442 colonels, 758 lieutenant-colonels, and so on.

With the foregoing minimum allowance in field grades, every reservist could be assured of receiving a commission in the highest grade held by him during the war; and on recommendation of the Surgeon-General, many of those not suitably rewarded by promotion during the war could now be promoted. In fact, it would assure nearly every junior officer an extra grade. As additions to the reserve were made and the list grew, there would, of course, occur a corresponding increase in the higher grades, thus creating an opportunity for further promotion.

In the annual redistribution, should there be found in any year an excess of officers in the field grades, no demotions would be made, but further promotions to those grades would be suspended until the extra files had been absorbed either by eliminations in the grades showing the surplus or by additions at the bottom of the list, or by a combination of the two. In accomplishing the initial adjustment, the relative rank in each grade should be arranged, by recommission if necessary, and preferably in the order of age of the individual, with the result that older men would be

placed above the younger in each grade. While this is not essential, it is highly desirable and is a good principle to follow for the reason that it would stimulate a constant flow of promotion for those officers below them on the various lists; whereas with younger men at the top, considerable blocking of promotion will result. In other words, a young man remains on the list longer than an older man, with the result that the latter passes off it without enjoying a vacancy in the grade occupied by the former. It is believed that this primary readjustment could be equitably and fairly brought about in a methodical manner to the satisfaction of all concerned. Of course, some compromise would be necessary. Only one man could be No. 1 in each grade. Some man would have to be content with remaining for the time being No. 221 on the list of colonels, and another one No. 379 on the list of lieutenant-colonels and so on down—to use an army phrase—to the “goat” lieutenant, the last man who joined the reserve.

SECOND STEP: SUBSEQUENT OPERATION OF THE ROSTER

Now let us assume that what we might term the war-time or readjustment phase in the evolution of the new Reserve Corps has been accomplished as described above. Under the proposed scheme there may have been enrolled, let us say, 20,000 of our ex-war reservists. But to take a concrete example, assume only that the 7,000 officers noted above constitute the Medical Reserve Corps when the list is first established and printed. In other words, we would have 221 colonels, 379 lieutenant-colonels, 1,659 majors, and 4,741 captains and lieutenants (any increase above the 7,000 taken as an example would result in a proportionate increase in the various grades just given). After the lapse of one year, no further initial appointments in the higher grades would be made. From that time on, all appointments would be made in the lowest grade, or that of first lieutenant, and the applicant so appointed would, according to the date of his commission, take rank on the lineal list at the foot of first lieutenants. Promotion thereafter would be made just as in the regular corps, by seniority as vacancies occur. These vacancies in the various grades would be created, for example, by death, by discharge for cause, by resignation, or when the reservist reaches the age of 64 years. This is the retiring age for regular officers, and is favored over the 59 maximum now prescribed for reserve officers. The period of one year suggested above is not arbitrary, but it is evident that a time limit must be fixed before the expiration of which all ex-medical officers must have decided whether or not they wish to hold a commission in the Reserve Corps. This period would be the time required for bringing before the medical profession of the country the approved plan for the reorganization of the Reserve Corps.

Removal of a colonel from the list through the operation of any of the reasons given above would immediately result in the promotion of the senior lieutenant-colonel, the senior major, and the senior captain. Promotion to captain would be made after three years' service, and would not depend on vacancies. One point that we particularly desire to make clear here is that through the operation of such a list as proposed by us an officer on the reserve list is in line for promotion, and would be promoted as vacancies occur, irrespective of the fact that perhaps he had never served

a single day on active duty. Under this scheme, every man takes his place on the list and is considered eligible for promotion exactly as is every other officer on that list. No limitations should be placed on eligibility for service in grades. Appointed as first lieutenant, we see no reason why an officer should not after the lapse of twenty or more years, provided he has made a faithful effort to keep up with the progress of medico-military science, be fully capable of performing the duties of a colonel, in which grade he would probably find himself at that time if this plan is accepted. The point that we particularly desire to make clear is that under this

the records of 10,596 officers, is 1½ inches thick. For desk and ready reference purposes, this is a handy and convenient size.

With the Medical Reserve Corps organized and conducted on a lineal list basis as proposed above, the publication annually of a separate Medical Reserve section of this official Army Register is essential. In other words, we would have issued annually the present official Army Register, one volume of which would contain the names and records of "Officers of the Regular Establishment," and one or more volumes to contain the names of officers of the Medical Reserve (no volume should exceed 10,000 names). While true that the medical officers in the National Guard are prohibited from holding a commission in the Medical Section of the Officers' Reserve Corps, they nevertheless form part of our national reserve. There would be no objection to the publication of a separate register for these officers; but as their strength, based on past records, would probably never exceed an aggregate of 1,000 medical officers (the maximum number in 1916 was only 800 officers) there is no reason why their names, rank, National Guard assignments, military record, etc., should not be incorporated in the volume, immediately following the names of officers of the medical section, Officers' Reserve Corps. In this event the proper title for the register should read:

"OFFICIAL ARMY REGISTER"
(RESERVE MEDICAL OFFICERS)

instead of:

"OFFICIAL ARMY REGISTER"
(MEDICAL SECTION—OFFICERS' RESERVE CORPS)

We see no reason why each section of the Officers' Reserve Corps should not also publish a register. For example, we would propose that there be one register also for reserve infantry officers, another register for reserve quartermaster officers, and so on to cover all of the reserve officers enrolled by the army.

We would pattern the preparation of this register of reserve officers very much after that now being used for officers of the regular establishment. To make the register generally useful we would, however, embody certain changes therein. For example, we would arrange all officers under their different grades with their relative rank in each grade indicated by serial numbers. The first page of the register would start with the colonels and be headed by the name of the officer who was number one on the list of colonels. Colonels, of course, would be followed by a list of lieutenant-colonels and so on down to the junior lieutenants.

As for the regular register, the record would show for each officer, in the first column the name, rank, date of rank, military awards, and college and university degrees with date of these. In the second column could be shown the military service, such as dates of the various commissions, etc.

In the third column could be shown the home address, specialties or nature of practice in which engaged, hospital appointments, officerships in societies, etc. In the fourth column, place and date of birth and in the fifth, state from which appointed (the foregoing all to be shown in the first section of the register).

In another section of the same register could be shown a table of the distribution by states, this to be followed by casualties, showing by name, resignations, deaths and discharges during the year. This could be followed by insertion of histories of organizations and

1918. MEDICAL DEPARTMENT. 29

Name, rank, date of rank, and highest brevet rank.	Service in the Army		Born in	Appointed from
	In Federal service other than the permanent establishment.	In permanent establishment.		
MEDICAL CORPS.				
Surgeon General with rank of Major General				
Ireland, Merritte W. 4 oct 18	maj. surg. 45 U. S. Inf. 17 aug. 92 accepted 19 aug. vacated 9 July, 00 maj. surg. 30 June, 01 accepted 9 July, hon. dis. 30 June, 01	asst. surg. 4 May, 91 accepted 15 May, 91 capt. asst. surg. 4 May, 96 maj. surg. 3 Aug. 03 maj. med. corps. 3 Aug. lt. col. 1 May, 11 col. 15 May, 17	Ind.	Ind.
D. S. M.				
M. D. Detroit Coll. of Medicine, 90.				
M. D. Jefferson Med. Coll. 91.	brig. gen. med. corps, N. A. 18 May, 18 accepted 20 May, 18 maj. gen. U. S. A. (asst. surg. gen. A. E. F.) 8 Aug. accepted 25 Aug. vacated 30 Oct.	maj. gen. surg. gen. 4 Oct. 18 accepted 30 Oct.		
Colonels				
Arthur, William H. 1 Jan 11	maj. chf. surg. 4 June, 98 accepted 18 June, hon. dis. 30 Nov. brig. gen. med. corps, N. A. 5 Aug. 17 accepted 9 Oct. hon. dis. 29 Nov. 18	asst. surg. 18 Feb. 81 accepted 1 Mar. capt. asst. surg. 18 Feb. 86 maj. surg. 23 Aug. 93 maj. med. corps. 23 Aug. lt. col. 23 Apr. 08 col. 1 Jan. 11	Pa.	Md.
M. D. Univ. of Md., 77				
Stephenson, William 12 Apr 12	maj. brig. surg. 4 June, 98 accepted 23 June, hon. dis. 30 Apr. 99	asst. surg. 3 Dec. 83 accepted 15 Feb. 84 capt. asst. surg. 3 Dec. 88 maj. surg. 28 Apr. 00 maj. med. corps. 28 Apr. lt. col. 1 May, 08 col. 12 Apr. 12	Ma.	Me.
M. D. Columbia Univ., 80.				
Lane, Guy L. 6 Aug. 12	maj. brig. surg. 4 June, 98 accepted 18 July, vacated 2 Feb. 01	asst. surg. 3 Dec. 83 accepted 18 Feb. 84 capt. asst. surg. 3 Dec. 88 maj. surg. 2 Feb. 01 maj. med. corps. 2 Feb. 01 lt. col. 1 Jan. 09 col. 8 Aug. 12	Va.	Va.
M. D. Univ. of Va., 79.				
Crosby, William D. 7 Dec. 12	maj. brig. surg. 4 June, 98 accepted 15 June, hon. dis. 30 June, 00	asst. surg. 3 Dec. 83 accepted 18 Feb. 84 capt. asst. surg. 3 Dec. 88 maj. surg. 2 Feb. 01 maj. med. corps. 2 Feb. 01 lt. col. 1 Jan. 09 col. 7 Dec. 12	Mass.	N. Y.
B. S. Beloit, 79. M. D. Columbia Univ., 82.				
Gandy, Charles M. 16 Apr. 13	maj. brig. surg. 4 June, 98 accepted 20 June, maj. chf. surg. 7 Jan. 99 accepted 30 Jan. hon. dis. 22 Mar.	asst. surg. 3 Dec. 83 accepted 18 Feb. 84 capt. asst. surg. 3 Dec. 88 maj. surg. 2 Feb. 01 maj. med. corps. 2 Feb. 01 lt. col. 1 Jan. 09 col. 15 Apr. 13	N. J.	N. J.
M. D. Jefferson Med. Coll., 79.				
McCaw, Walter D. 9 May, 13	maj. brig. surg. 4 June, 98 accepted 15 June, hon. dis. 30 Nov. maj. surg. 42 U. S. Inf. 17 Aug. 99 accepted 19 Aug. vacated 2 Feb. 01	asst. surg. 20 Aug. 84 accepted 28 Aug. capt. asst. surg. 20 Aug. 89 maj. surg. 2 Feb. 01 maj. med. corps. 2 Feb. 01 lt. col. 1 Jan. 09 col. 9 May, 13	Va.	Va.
D. S. M.				
M. D. Med. Coll. of Va., 82. M. D. Columbia Univ., 84				
Kean, Jefferson R. 25 Apr 14	maj. brig. surg. 4 June, 98 accepted 22 June, maj. chf. surg. 30 Jan. 99 accepted 18 Feb. lt. col. chf. surg. 21 Feb. accepted 4 Mar. hon. dis. 17 Apr. maj. surg. 17 Apr. accepted 22 Apr. vacated 2 Feb. 01 brig. gen. med. corps N. A. 26 June, 18 accepted 12 July,	asst. surg. 8 Dec. 84 accepted 18 Jan. 85 capt. asst. surg. 8 Dec. 89 maj. surg. 2 Feb. 01 maj. med. corps. 2 Feb. 01 lt. col. 1 Jan. 09 col. 23 Apr. 14	Va.	Va.
M. D. Univ. of Va., 83.				

A page (reduced) from the official Army Register, 1918.

scheme a reservist may never see any active service—except such attendance at camps of instruction as he may elect—yet a steady flow of promotion is assured.

THIRD STEP: PUBLICATION OF A SEPARATE MEDICAL RESERVE SECTION OF THE OFFICIAL ARMY REGISTER

The War Department now publishes annually a compilation known as the Official Army Register. This contains the names, records, etc., of all officers of the regular army. During the war its publication was suspended, the last prewar register being issued in December, 1915. The publication of this register was resumed for the year 1918.

For those readers who have never seen an issue of this document, we might add that it is a paper covered book 9 by 6 inches and for the 1918 issue, containing

such other items of historical data as would prove of general or official interest. This might well include a brief history of the organizations and operations of all the sanitary organizations utilized during the world war but which have now gone out of existence.

Schedules of pay tables of the army should follow this, and lastly the general alphabetical index of all the names contained in the register. Basic laws affecting the reserve corps should be inserted in fly leaf.

This register would prove a very useful document. It would make an excellent reference record, something that we now sadly lack. During the war, regular officers in charge of large projects knew absolutely nothing of the make-up of the Medical Reserve Corps. The possession of a copy of this register would have proved invaluable to them in making selections and assignments. Every officer in the reserve should be furnished a copy of this register annually. In that way he would become acquainted with the names, relative rank and location of other reserve officers, particularly those in his own or nearby communities. It could also be placed on sale at the Government Printing Office at cost price, and made available for libraries, medical societies, etc., which would be interested in having copies for reference.

Reference to the register would definitely fix the lineal rank of every officer whose name is borne thereon just as is now possible for officers of the regular establishment. Another thing, as the years went on it would be a complete record of a man's service from the time he joined, when his name was away down on the list of lieutenants, to the present when perhaps he might be well up on the list of colonels. "Know ye one another!" So much for the book.

FOURTH STEP: TRAINING OF RESERVE OFFICERS

The training of reserve officers will be discussed in brief and only because it has some relationship to our scheme and will require careful consideration if it is adopted. If a young man joins the reserve today as a first lieutenant, and as the years go by is successively promoted through the grades of captain, major, etc., until twenty-five years hence, let us say, he is a colonel on the list, and may have attained that rank without ever having had a single day of active duty—should we remain content to let the matter rest there? Most emphatically, No! We believe that no reservist would accept promotion to a higher grade without at least making a faithful effort to keep abreast of the medico-military requirements of the grade in which he would have to serve were he suddenly ordered out in time of war to join the colors. In fact it will be necessary to *require* of all reservists some attention to training or instruction, and eliminate those who fail to attach any great importance to that end of their military status. It is safe to assume that any fair minded and conscientious reservist would demand instruction in the event that the war department did not provide and require it. But in imparting this instruction by no means should reversion to the old order of things be permitted. However, the entire subject of training of our forces has not yet been developed, and any ideas that we might advance now would be premature until we become familiar with the basic fabric on which our reorganization is to be built. In a general way, however, we might add that the Medical Department desires to maintain two schools, one at Washington which will be known as the Medical Department Technical School and in which will be taught strictly professional work,

and another one to be established at some camp not yet selected and to be known as the Medical Department Field Service School, where instruction in all field matters will be given. In addition to these two schools, Medical Department personnel will also have the option of access to training camps, particularly those in which combined maneuvers are held.

At the Medical Department Field Service School we hope to maintain complete exhibits of all Medical Department units, sanitary devices, etc., with sufficient trained personnel always on hand to demonstrate their uses. For example, among many other exhibits one should be able to see there a sanitary train in operation, an evacuation hospital complete and ready to function, and at times a standard hospital train. When our educational program has been placed on a firm foundation, we should permit all reservists largely to follow their own inclination and elect the time, place and character of the course which they desire to take. With a large reserve list, all the men on it, by means of suitable questionnaires sent out at stated intervals, will be encouraged to elect the kind of work they desire to follow if called into active service. Some would elect administrative work, others mobile base or evacuation hospital instruction, and still others duty with combatant organizations.

A complete pamphlet on all Medical Department training resources should then be compiled and distributed among reserve officers. We should make these instruction centers so attractive and a residence therein so interesting that the reservist, instead of spending all of his vacation in the mountains or at the seashore, would take a part at least at one of these centers. They should be open for attendance by these officers the year round, barring, of course, climatic conditions where necessary. Then say to the reservist: "The door is open, come as often and stay as long as you like." To meet the expense item, there should be written into any basic training law a provision that any reserve officer proceeding from his home by the most direct route to the training center he elects is automatically (under his commission) placed on active duty and entitled to the legal traveling expenses, pay, etc., during the time that he is proceeding to, remains at, and is returning from the training center; the authority for such pay and allowance while under instruction not to exceed that for one month in any calendar year, but to be cumulative up to four years. This clause would enable the reservist, if he so desired, to attend the instruction center for four months on full pay once every four years or for two months every two years, in the event that he did not care to spend his annual monthly vacation in this manner.

Herein we are attempting only in a general way to state how we believe training, particularly for reserve medical officers, should be developed and encouraged. Any plan adopted would necessitate the incorporation of many details that need not be recited here. For example, at some of the centers there would necessarily have to be some check made on the attendance. A man would probably be required to write direct to the center beforehand and receive permission to come at a certain time, in order that he might be assured of accommodations.

Furthermore, we would reduce didactic instruction to an absolute minimum. Instruction should be by demonstration and actual working exhibition of the specialty in which the reservist is interested. Going through squads right, squads left, right hand salute,

left hand salute, and lining up with mess kits should be relegated to the background. Of course the reservist recruit, the man just out of college, who knows nothing of soldiering would need some instruction along these lines. In fact, he would probably be the first to suggest it. Nevertheless, we want to emphasize the fact that this feature of his instruction should be carried on only long enough to give him an insight into military requirements and to help him to adapt himself to military customs. With it, he can save himself needless embarrassment when called to the colors; without it, he would only be adding to his troubles in such a contingency.

Another point to be emphasized is avoidance of taking up too much of the student officers' time with paper work. For those men particularly interested in it, every opportunity should be extended to familiarize them with this subject; but for the average reservist we would urge very little of this work. If successful in developing our proposed Medical Service Corps, we should always in the future have an ample number of trained officers to carry on this work in hospitals and other sanitary formations and free medical officers from the necessity of devoting their time to this phase of what has heretofore been an irksome task.

FIFTH STEP: PROMOTION IN TIME OF WAR

As predicted above, for a long time to come at least we shall hope that this question will not cause us any great concern. Let us put our house in order by establishing our peace-time list on a methodical and equitable basis. The matter is briefly treated in a subsequent paragraph; but here it is desired to emphasize the urgent necessity of devising some system of promotion in time of war to protect the interests and reward the reservists who have had years of service on the peace-time list.

The adoption of our peace-time list would form a foundation for and greatly facilitate the equitable distribution of promotion in war. It is safe to assume, however, that selective promotion will always prevail in time of war. Also at this time if the excellent principle followed in the recent war is adhered to, the medical officers of the Regular Corps, Reserve Corps, and National Guard become part of the combined or greater U. S. Army. The minute they enter on active service, all National Guard and reserve officers are recognized as being on the same footing as the regular officers, and lose their reserve and National Guard identities.

All new appointments to a war army should be made only in the lowest grade—that of first lieutenant. All promotions into the higher grades of the combined army should be made from one of three lists mentioned—i. e., the former regular list, the former reserve list, and the former National Guard list. For purposes of equalizing promotion as far as possible we would have all men who are promoted to a higher grade in the U. S. Army during war time automatically create vacancies in the other lists when they leave them. "On paper" only this would result in double promotions and enable seniors on the list who are not in a position to render service that attracts attention and results in selective promotion to enjoy at least some promotion as a result of their relative position on their own lineal list. It is only natural in war time that promotion shall go to the man on the ground. To that extent there is a considerable element of chance. The man who is immediately available and who has demon-

strated his fitness for a larger task will naturally be selected, even though another man of equal or greater ability is known but not immediately available.

On the declaration of war, no further appointments to the Medical Reserve Corps or National Guard would be made. All commissions would be made in the U. S. Army. All officers on the regular, reserve or National Guard lists retain the permanent rank held during peace time on those lists, but automatically become members of the "Medical Corps, U. S. Army," the great war time pool which recognizes no distinction such as regular or reserve. All new appointments to the U. S. Army during war are to be made in the grade of first lieutenant, all selective promotions to be temporary and made in that army. Assuming that all men on the regular; reserve or National Guard lists are proficient, they should enjoy a normal flow of promotion during war time even though they may not be singled out for selective promotion. To effect this and remedy a fault recognized during the last war, every time a man is promoted to the combined war list let it be assumed for purpose of computation only that he has temporarily created a vacancy in his old lineal list and that it results in the promotion of the seniors in each grade on that list below him. In other words, this scheme would result in "double" promotion.

SIXTH STEP: REVISION OF TABLES OF ORGANIZATION AS THEY AFFECT MEDICAL DEPARTMENT DISTRIBUTION

This does not require any legislation—it is strictly a matter for adjustment by the General Staff at the War Department, and on recommendations made by the Surgeon-General it is now receiving consideration by that body. Unquestionably, inequality of promotion has been indirectly influenced in the past by disproportionate and unfair distribution of grades in existing tables of organization. During the war, whenever the question of promotion for a medical officer arose, it seemed extremely difficult to convince the deciding officer that promotion in the Medical Department had absolutely no connection whatever—as far as legal allowances were concerned—with any table of organization. Medical Department allowances are computed only on the total authorized enlisted strength of the army, and are expressed in one aggregate which, in turn, by the same law is proportionately distributed in the various grades. As mentioned above, tables of organization for Medical Department personnel concern only the War Department—not Congress—and represent merely an effort to foresee and provide for the needs of the specific unit concerned. In other words, they show the proper distribution of the legal allowance of medical personnel and provide for the army by congressional enactment. Quite the contrary situation exists for the line of the army, the basic organization of which is prescribed by Congress in terms of tables, plus certain allowances for a detached officers' list. Heretofore, the Medical Department has attempted to parallel the line system by recommending tables of organization for essential units and then pooling for general distribution and assignment as needed, the officers remaining after the requirements of these tables have been met. The Medical Department "pool" is analogous to the line detached officers' list. Previous tables of organization recommended by the Medical Department have not provided a proper proportion of officers in the higher grades for units serving

with an expeditionary force. This faulty distribution has resulted in throwing into the pool a relatively large and disproportionate number of officers in the field grades—in other words, the higher rank has been reserved for officers in the home territory to the corresponding disadvantage of officers serving in the theater of operations.

An effort is now being made by the Surgeon-General to remedy this condition by effecting a more harmonious equalization in distributing the grades authorized for all Medical Department officers and noncommissioned officers borne on the tables of organization. Any man serving in an expeditionary force should have an equal chance for promotion with those in the home territory. This parity can be maintained only through proper distribution of the legally authorized grades. Places with higher rank must be authorized for our officers who are serving at the front. Furthermore, by authorizing a fair proportion of higher grades in tables of organization for the Medical Department, army, division and other commanders will be automatically relieved of the handicap of which many of them complained during the late war: this with reference to their inability to recommend promotion of a man in their own command simply because a place apparently did not exist for him in tables of organization. This left many vacancies that were never filled, and denied to reservists the promotion to which they were legally entitled. If a generous commander, in an effort to reward meritorious service, recommended a medical officer for promotion, he stood a good chance of losing his services because of the necessity of transferring him elsewhere where a place for him under tables of organization could be found. In accordance with the principles enunciated above, the more important changes proposed in tables of organization now under consideration are: division surgeon to be a colonel; each battalion surgeon to be a major; sanitary train commanding officer to be a colonel; field hospital battalion commanding officer to be a lieutenant-colonel; medical laboratory section of sanitary train to be in charge of a major; evacuation hospital (750 beds) to have one colonel, two lieutenant-colonels, seven majors and twenty-six captains and first lieutenants, a total of thirty-eight; mobile surgical hospital (250 beds), one lieutenant-colonel, two majors and sixteen captains or lieutenants, total nineteen; base hospital (1,000 beds), one colonel, two lieutenant-colonels, seven majors, twenty-nine captains and lieutenants, total thirty-nine; convalescent camp (1,000 beds), one colonel, two lieutenant-colonels, two majors, twelve captains and lieutenants, total seventeen; camp hospital, one lieutenant-colonel, three majors, eight captains or first lieutenants, total twelve; hospital train, one major, three captains or first lieutenants.

CONCLUSION

In our opinion the methods now prescribed for enrolling, classifying, training, promoting and calling to active service the medical reserve of the country are far from satisfactory. The organization of the reserve must be revamped and based on more scientific principles. The plan we are proposing may not be ideal, but we offer it as an effective means for betterment. Discussion of any of the features of our proposition, particularly with reference to constructive suggestions for improving existing or prospective conditions, in the columns of this journal or by correspondence direct with the writers, is invited. If this article results in

concentrating a little more thought at large on this very important phase of our national preparedness, the principal object of the writers will have been accomplished.

Surgeon-General's Office.

THE BROAD TAPEWORM IN MINNESOTA

FURTHER FACTS AND CONSIDERATIONS

W. S. NICKERSON, S.D., M.D.
LONG LAKE, MINN.

The recent article by Riley¹ is important in calling attention to the frequency of occurrence of the broad tapeworm in Minnesota, and especially in putting on record evidence of two more cases of native infestation by *Dibothriocephalus latus*. I desire to call attention to some other facts overlooked or not considered in the paper of that author.

NATIVE FOCI OF INFESTATION

Four clear-cut cases of native infestation have been reported. The first of these is the case of Dr. O. W. Parker of Ely, Minn., reported by me in 1906.² This, Riley refers to as "the only recorded case . . . not clearly explicable on the theory that the parasite was an importation."

The second case was that of Dr. Olaf A. Olson of Minneapolis, demonstrated by me before Section F. (Zoology) of the American Association for the Advancement of Science in Minneapolis (1910) and briefly reported in 1911.³ As this report did not appear in a medical journal, it seems to have been unnoticed by physicians. Riley, who evidently intended to give full credit to my work, has also overlooked it. Under these circumstances I may be excused for quoting a part of it here.

This case occurred in a woman who was born and has always lived in Hennepin County, Minn., never having been out of the state except once for a visit in North Dakota. While there, she ate dried and smoked fish (otherwise uncooked), and it was soon after her return home that she experienced symptoms attributed to the tapeworm. The infection must therefore have occurred in America and from the eating of American fish.

The other two cases are those reported by Riley.¹ We have, therefore, four unquestionable cases on record in which the patient acquired the parasite in this country—in three of the cases definitely in Minnesota, in the other either in Minnesota or in North Dakota.

Stiles⁴ says that "it is probable that immigrants will infect the fish in some of our lake regions." The case of Dr. Parker (reported in 1906) demonstrated that this had already occurred before the publication of Stiles' prediction.

Riley claims that the general view of medical men is that "there is very little evidence at present to justify an assumption that native foci of infection exist in this country." However true this may have been in the past, it must be said that for the future any such view

1. Riley, W. A.: The Broad Tapeworm, *Dibothriocephalus latus*, in Minnesota, Additional Records, J. A. M. A. **73**:1186 (Oct. 18) 1919.

2. Nickerson, W. S.: The Broad Tapeworm in Minnesota, J. A. M. A. **46**:711 (March 10) 1906.

3. Nickerson, W. S.: Some Data Concerning *Dibothriocephalus latus* in America, with Report of a Second Case of Infection Acquired in the United States, Science **33**:270 (Feb. 17) 1911.

4. Stiles, C. W.: Osler's Modern Medicine, **1**:563, 1907.

on the part of physicians can no longer be justified on the ground of lack of evidence, but instead must be attributed to their lack of knowledge of the facts. In reality, the case of Dr. Parker was enough to establish absolutely the existence of one focus of infection in America. As the number of reported cases becomes greater, more definite knowledge will be gained concerning the extent and number of such foci.

FREQUENCY OF *DIBOTHRIOCEPHALUS LATUS* INFESTATION IN AMERICA

Riley quotes Stiles⁴ as stating that over thirty cases have been recognized in the United States, chiefly among foreigners. In 1911³ I reported:

I have collected from physicians reports of the occurrence of the fish tapeworm (*Dibothriocephalus latus*) of man in sixty-five cases, fifty-one of which were in Minnesota. But six of these have been previously mentioned in literature. The hosts in two cases were Swedes, in one a Japanese, in two native-born, and the others with few if any exceptions were Finns.

From my experience in collecting these instances I feel certain that Riley's belief that "there are sections of Minnesota in which it is by all odds the commonest of the large tapeworms of man" is absolutely correct. It may be further stated that this condition will be found in any region, whether in Minnesota or elsewhere, which has a predominance of Finnish immigrants in its population. Furthermore, I feel certain that any desired number of cases within reason could be obtained. The number reported was sufficient to establish the prevalence of the worm in Minnesota, and its special frequency among Finns. I did not continue the search for more cases.

I very much doubt that it is more abundant in Minnesota than in several other states in which the sources of the population and the conditions of life are essentially similar. It is quite possible that an equal amount of study of helminthologic conditions in adjacent states might show *D. latus* as abundant there as in Minnesota.

THE PAUCITY OF PARASITOLOGIC EVIDENCE IN HUMAN CASES

It is worthy of note that none of the four known cases of native infestation with *D. latus* was reported by the physician who treated the case, and in neither of the cases which I reported were the special significant facts secured by the attending physicians until at my request they made secondary investigations. I wish to recognize fully the courtesy of these gentlemen in getting these facts for me; but the essential and significant point is that the facts were brought to light only through the cooperation of a physician and a parasitologist. It seems a safe assumption that, had it depended on attending physicians to obtain the evidence, no case of native infestation would have been recorded and relatively few cases of *D. latus* infection would have been reported. And what is true of this human parasite is probably equally true of many or most other species. For parasitologic data our main reliance must be on parasitologists. Physicians have small interest in parasitic cases beyond relieving their patients from the unwelcome guests; and most of them have very meager knowledge of the parasites removed. All tapeworms are alike to them, and any data based on their determinations (diagnoses) are therefore of doubtful value. It is probably not overstating the case to say that helminthologic determinations made by physicians who have not also been trained as zoologists

are of no greater value than diagnoses of intra-abdominal conditions (for example, appendicitis) made by zoologists who have not also had a medical training.

As people suffering from parasites very naturally and properly go to physicians for treatment, it follows that few cases of animal parasitism in man come to the attention of parasitologists. Thus is explained the paucity of data on human parasitology in this country, and also the questionable accuracy of many of these.

PARASITOLOGISTS AS CONSULTANTS

Few physicians realize that about as much study and experience are required to make a competent parasitologist as to make a competent physician; and competence in one field no more implies competence in the other in one direction than in the reverse. To be both physician and parasitologist is as rare as to be both physician and lawyer. In view of these facts and of the greatly increased rôle which animal parasitism has been shown in recent years to play in the causation of human disease, it becomes important that cooperation between these two classes of scientific workers be brought about. The physician who has to treat a case of human parasitism needs the benefit of consultation with a parasitologist, although in most cases it would be no more necessary for the consultant to see the patient than it would for the pathologist who diagnoses a tumor removed at operation. But the proper diagnosis of the case is dependent on the report of the specialist in both cases, and the degree of special knowledge required is equally great. The importance of a reliable diagnosis is generally recognized in the tumor case but not in the parasite case.

A difficulty in securing to the physician such consultation arises from the fact that parasitologists are not as numerous nor so easily accessible as pathologists—just as cases calling for their services are probably not as common as those calling for the services of the pathologist. This difficulty may, however, be overcome. The zoologists of the Bureau of Animal Industry in Washington are ready at any time to make determinations and reports of human or other parasites sent them. Furthermore, in most state universities and in many other universities, colleges and agricultural colleges there is some competent member of the zoological department who would be willing to make determinations of human parasites and give any needed suggestions or advice at little or no charge.

STATE PARASITOLOGISTS

It would seem best, however, that the state university should be made a central clearing-house for all such cases within the state. Some member of the department of zoology should be appointed or recognized as state parasitologist on whom would fall the task of receiving, classifying and reporting on human parasites sent him. Notices should be sent out to physicians giving directions for preserving and forwarding specimens accompanied by proper data and offering them the benefit of free determinations and any needed suggestions. In this way opportunity would be provided for the gathering of useful knowledge which is now lost and statistics so gathered would have the advantage of reliability. Physicians would receive helpful direction and suggestions as to possible sources of infestation, prophylaxis and problems for investigation.

The main question is, Can physicians be made to realize their need for such aid as I have suggested, and will they take enough interest in the matter to send in the specimens?

Clinical Notes, Suggestions, and New Instruments

REPORT OF A CASE OF SEVERE HEAD TETANUS WITH RECOVERY *

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This case is presented as one not uncommon in the services of large hospitals today, and as showing the ready response to antitoxin even after the onset of symptoms.

History.—A Finn, aged 36, admitted at 2 p. m., Nov. 8, 1919, to the service of Dr. Evan Evans, nine days previously, while returning from work late at night, had been waylaid by several men, beaten about the head and robbed. When he regained consciousness next morning he found he had a large laceration of the left ear and scalp. The wound was sutured at a nearby hospital, but tetanus antitoxin was not administered, so far as could be ascertained. He returned to the same hospital during the following week for dressings. On the seventh day a friend noticed that the left side of his face was flattened; on the eighth day the flattening was more marked and the patient had difficulty in opening his mouth. On the afternoon of the ninth day he presented himself to the emergency department of the Roosevelt Hospital.

UNITS OF ANTITOXIN ADMINISTERED

Date	Subcutaneous	Intravenous	Intraspinal
Nov. 8	3,000 (2 p. m.)	8,000 (4:30 p. m.)	5,000 (5 p. m.)
Nov. 9			5,000 (10 a. m.)
Nov. 9			5,000 (4 p. m.)
Nov. 10			4,000 (2 p. m.)
Nov. 18	1,500		

Physical Examination.—There was a complete left facial paralysis of peripheral type and marked trismus, the patient being able to open his mouth not more than 1 cm. There was a deep laceration, 4 cm. in length, at the posterior aspect of the left ear and scalp, which had been closed with five horsehair sutures. There was a small amount of foul smelling, purulent discharge, and a diffuse redness and swelling around the wound. The pupils were equal, regular, and reacted sluggishly to light. The neck showed moderate opisthotonos. The superficial abdominal reflexes were present; there was a moderate Kernig reaction; the knee jerks were hyperactive but equal; Babinski reflex was ++; there was no ankle clonus, paralysis or stiffness. The temperature was 99.2 F., respirations 20, and pulse 80.

Laboratory Findings.—Urine tests were negative except for a trace of albumin. The blood showed: white blood cells, 14,000, with 81 per cent. polymorphonuclears; red blood cells, 5,000,000; hemoglobin, 75 per cent. (Sahli); Wassermann reaction negative. Bacteriologic: On the morning following admission, two stab cultures were made in glucose agar tubes from the deepest part of the wound. After twenty-four hours of incubation, growth had occurred along the stab, with the formation of gas. Smears from the culture showed numerous long, slender, gram-positive bacilli with a large clear spore at one end, which morphologically were *B. tetani*. There were also small, gram-negative bacilli present in large numbers. These were later identified as *B. coli*. Inoculation was made direct from the original stab culture into the root of the tail of a white mouse. The mouse died in fourteen hours with marked stiffening of the extremities.

Treatment.—1. General Measures: The accompanying table gives the number of units of antitoxin administered. It can be seen that the greater part of the antitoxin was given by the intraspinal method. In addition to this, 1,500 antitoxin units were applied locally to the surface of the wound for two weeks. The diet consisted of fluids, such as milk, cocoa and eggnog with the addition of large amounts of sucrose and lactose.

2. Local Measures: At the time of admission the sutures were removed and the wound opened wide. The following morning the wound was washed with hydrogen peroxid, then with 3.5 per cent. tincture of iodine, followed by 1,500 units of antitoxin, and a dry dressing was applied. The local treatment was not started until the culture had been taken. The wound was dressed each day with the foregoing routine. The injection of antitoxin along the course of the left facial nerve was taken into consideration, but was abandoned on the advice of Dr. Park of the New York board of health.

Clinical Course.—November 8, the patient was admitted.

November 9, he was stuporous, and complained of pain at the site of the intraspinal injection; trismus was complete; opisthotonos was more marked; no vertebral motion was possible.

November 10, the Kernig and Babinski reflexes were more marked and the knee jerks more active. There was bradycardia; pulse from 50 to 60.

November 11, the knee jerks were less active, with the left greater than the right. The Babinski reflex was maximal. Herpes simplex appeared on the lips and the external nares. The patient complained of being stiff all over.

November 14, trismus and opisthotonos were decreasing and the neck was not so rigid. The knee jerks were feeble, with the left greater than the right. Kernig's sign and bradycardia were still present.

From this time on the patient began to show a gradual diminution in the signs. The trismus and opisthotonos gradually decreased in severity. The knee jerks, however, again became very active on November 15, and remained so in decreasing proportion until November 25. The Babinski and Kernig reflexes became negative, November 17, and on this day the neck and back were freely movable. The facial paralysis did not show signs of returning function until November 22; December 1, the facial paralysis was still present but there was daily increase in function, and the trismus had entirely disappeared. The wound was allowed to heal by granulation with frequent dressings and became entirely closed by Jan. 1, 1920. At no time during the course of the disease was there a local or general convulsion, and the patient did not seem especially sensitive to external stimuli. There was a slight fever on the second day, but none subsequently. The patient was finally discharged, with a slight remnant of the facial paralysis but with no other symptoms.

ACUTE VERONAL (BARBITAL) POISONING: REPORT OF A CASE

S. J. TAUB, M.D., CHICAGO

History.—Mrs. G. E., a married white woman, aged 28, had been accustomed to using from 10 to 20 grains of barbitol almost every night during the last two years following a hysterectomy for fibroids. Her health had been good except for attacks of nervousness and insomnia. Three days previous to my visit, she ate some shrimp salad in a restaurant and became suddenly ill two hours later, with nausea, vomiting, abdominal pains and diarrhea. On advice of her husband that night she took 50 grains of barbitol, purchased in the form of 5-grain "veronal" tablets, in order to get some sleep. The vomiting was much less but the diarrhea continued through the night and the patient felt stuporous, drowsy and very weak. During the next day she took 100 grains of barbitol again in order to sleep off the effects of what she called ptomain poisoning from eating shrimp salad.

Examination.—I saw her the evening of the same day, Dec. 24, 1919. She was in bed and appeared seriously ill; she was in a stuporous condition and answered questions very slowly. Her voice was very faint and had a prolonged, drawling expression. There was some confusion but no disorientation. The face had an ashy gray hue and the lips were very pale.

The nails were cyanotic and she complained of being very cold. The temperature was 97.5, pulse 52, and respiration

* From the Medical Wards of the Roosevelt Hospital.

12. The pupils were dilated and reacted to light and accommodation. The tongue was heavily coated and the breath fetid. The heart was regular in action and slow (52). The skin was cold and dry, and it presented a slight yellowish hue.

The patellar, triceps and biceps reflexes were very sluggish. Sensibility for pain, touch, heat and cold was about normal. On attempting to walk to the bath room, she staggered and had to be assisted. There was a marked ataxia of both the lower and upper extremities. She could not hold anything in her hands.

Treatment and Result.—The patient was immediately given an ampule of camphor in oil, 1 c.c., into the deltoid muscle. An attempt was made to pass a stomach tube, but this was impossible because of the patient's poor condition. Strychnin, $\frac{1}{30}$ grain, every two hours, alternating with atropin sulphate, $\frac{1}{400}$ grain, was given by mouth. Heat was applied externally to keep up the body temperature.

December 25 the patient was somewhat improved, although the diarrhea continued and she felt very weak. Lethargy and drowsiness persisted and she slept at intervals but was easily aroused. The ataxia had not disappeared.

There was typical hematoporphyrinuria, December 25, which persisted for three days, until December 28. After the fourth day, December 26, she was able to sit up in a chair, but the ataxia persisted until December 29, the end of one week.

1204 East Forty-Seventh Street.

REPORT OF CASE OF INTUSSUSCEPTION WITH GANGRENOUS APPENDIX IN EIGHT MONTHS OLD BABY

ROBERT K. BUFORD, M.D., HANSFORD, W. VA.

History.—A well nourished girl, aged 8 months, referred by Dr. G. S. Hartley, while sitting up in bed playing, commenced crying with severe abdominal pain, which was evidently of paroxysmal character, and was followed by vomiting. The child became pale and listless. The bowels had moved three times during the day; the last stool was normal and contained no blood. On palpation of the abdomen, a tumor mass was found in the right hypochondriac region. The body assumed a position of opisthotonos following another sudden paroxysm of pain. Rectal examination was negative. Blood and mucus, but no fecal matter, were obtained by enemas. A diagnosis of intussusception was made and the baby was brought to the Sheltering Arms Hospital within thirty-six hours after the onset, and I saw her, in consultation with Dr. Hartley, and confirmed his diagnosis. A tumor mass was demonstrated by fluoroscopic examination.

Operation and Result.—A right rectus incision was made under ether anesthesia. An ileocecal intussusception was found, the ileum being invaginated into the cecum, which was pushed up into the ascending colon. The appendix was gangrenous throughout. The involved intestines were injected but showed no gangrene. There was some free fluid, serous in character, in the peritoneal cavity. The blood supply of the obstructed intestine was not impaired. The intussusception was reduced by a slow general milking process; the appendix was removed and the wound closed in the usual manner without drainage. The operation was performed in twenty minutes, and the baby was awake before leaving the table.

Postoperative treatment consisted in the prevention of reverse peristalsis, and in stimulation, nourishment, and combating intestinal toxemia. Plain morphin sulphate was given as indicated, beginning with $\frac{1}{20}$ grain and in increasing quantities every hour until $\frac{1}{6}$ grain was reached. Then as a routine measure, this drug was continued in doses of $\frac{1}{6}$ grain every four hours for the first seventy-two hours. The toxins were counteracted by proctoclysis and hypodermoclysis of physiologic sodium chlorid and 5 per cent. glucose solutions, respectively.

No nourishment was given by mouth for the first thirty-six hours, after which time, breast milk was fed every two hours in one-half ounce feedings. This was continued until the morning of the fourth day, when the child was put to the

breast and allowed to nurse ten minutes every four hours until the mother began menstruating. Artificial feeding was then resorted to until the subsidence of all menstrual phenomena; at alternate periods it was given all the distilled water it would take.

The wound healed by first intention and the baby was discharged from the hospital three weeks after operation.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS*

(Continued from page 393)

PURGATIVE PILLS

PODOPHYLLUM

Podophyllum was introduced by the "eclectics" during the period when these practitioners endeavored to substitute drugs of "kindly" action for those drugs, used by the "regular school," that were harsh and dangerous when employed without the necessary admixture of brains. Calomel was anathema to them, and not without cause. So they hunted for a substitute for this drug, and believed they had found it in podophyllum, which came to be known as the "vegetable calomel."

One of the points in which podophyllum resembles the mild mercurous chlorid is the comparative insolubility of its resinous active principles in the acid stomach and their solubility in the alkaline intestinal secretions. As in the case of calomel, its action seems to be especially exerted on the upper portion of the small intestine. Thus, Ringer quotes some dog experiments by Anstie in which it was found that, after injection of an alcoholic solution of resin of podophyllum into the peritoneal cavity, the small intestine, especially toward the lower end of the duodenum, was extremely congested; and, in some instances, the lower part of the duodenum was extensively ulcerated. The large intestine was but slightly engorged. Although the injections were poured into the abdominal cavity, the peritoneum itself was not at all inflamed, even around some unabsorbed granules of the resin.

Mode of Action.—Podophyllum is an irritant to skin and mucous membranes. It tends to act as a purgative even when applied to ulcers or raw surfaces, or when given hypodermically, though the local irritation produced precludes its practical employment in this manner. It must be classified as a drastic cathartic in view of the fact that overdosage produces gastro-enteritis. A sufficiently small dose, from 0.003 to 0.006 gm. ($\frac{1}{20}$ to $\frac{1}{10}$ grain) of the resin, produces merely laxative effect; in doses of 0.008 to 0.030 gm. ($\frac{1}{8}$ to $\frac{1}{2}$ grain) this resin is an active purge. A single dose of 0.05 gm. (1 grain), or a daily dose of 0.10 gm. ($1\frac{1}{2}$ grains), as a general proposition should not be exceeded. Excessive dosage may produce bloody and slimy stools, especially in children. It may occasion, even in medicinal doses, considerable colic and sometimes nausea. Podophyllum has little tendency to produce after-constipation. Hence it is suitable for prolonged use.

* This is the eighteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

Unfortunately, it is a rather uncertain cathartic, a dose, adequate to purge one person violently, being inoperative in another. Its dosage, therefore, should be small at first and gradually increased as necessary. Likewise does the time required for action vary from a few hours to twelve or twenty-four hours or more. Combination with some other agent, such as aloes, might rectify some of these defects.

Indications.—Podophyllum is worth a trial in cases of "biliousness," especially those of the frequently recurring type, in which the repeated administration of calomel would be contraindicated because of danger of mercurial poisoning. The syndrome of "biliousness" need not be present in its full evolution. Thus, certain types of sick headache are relieved by agents of this class better than by anything else. So may certain cases of periodically recurring attacks of indigestion. As podophyllum cannot possibly act as an antiseptic—an action that, as we have seen, is doubtful in case of calomel—a more suitable explanation for the special value of the "cholagogues" in "biliousness" than that based on the theory of antiseptic action might be built on Alvarez¹ theory of "reverse peristalsis." He believes that the syndrome of biliousness is produced by a focus of excessive irritability in a lower portion of the digestive tube, for instance, a chronically inflamed appendix, which upsets the normal gradient of irritability that should become progressively less as we proceed from above downward. Now it is not unreasonable to assume that some of these purges, with special action on the upper portion of the small intestine, might, by increasing the irritability of the duodenum and jejunum, restore the previously upset "gradient of forces." This is merely offered as a working hypothesis for experimentation. It cannot as yet be even dignified with the term theory.

Method of Administration.—The resin of podophyllum is the only preparation of this drug that should be employed. The name "podophyllin" has been applied to this mixture of alcohol-soluble and water-insoluble principles. In view of the desirability of limiting the ending "in" to pure principles, the use of this word in the present popular sense is unscientific, and should be abandoned. Let us remember that habits of speech produce and reflect habits of mind.

Resin of podophyllum may be prescribed in the form of a 1:60 alcoholic solution (1 grain to the dram), one or two drops of which may be given on a lump of sugar to children, three or four drops to adults. It is usually given in the form of pills. However, the nicest way of giving it is in the form of tablet triturates, each containing 0.0006 gm. ($\frac{1}{100}$ grain), one or two of which may be given every hour for from four to ten doses.

COMBINATION OF ALOES AND PODOPHYLLUM

As podophyllum is one of the slowest of all cathartics in action, combination with rapidly acting purgatives is irrational, as is also the case with aloes. On the other hand, combination of podophyllum with aloes impresses one as rational, not only because of similarity in time required for action, but also because of difference in point of chief attack. An experiment should be devised—and might easily be performed by classes of medical students—to test the question whether we have in such combination a real case of heterotopic synergism. Should a patient present a combination of the special indications for these two cathartics, they might be

suitably combined in one pill. The National Formulary contains a formula for such a pill under the name, *Compound Pills of Aloes and Podophyllum*, each of which contains:

	Gm.	gr.
Aloes	0.065	1
Resin of podophyllum	0.0325	$\frac{1}{2}$
Extract of belladonna leaves	0.016	$\frac{1}{4}$
Extract of nux vomica	0.016	$\frac{1}{4}$

For reasons given in a previous article, the last two ingredients might as well be omitted. Not only are they useless, but they might do harm, the belladonna by producing dryness of the mouth, and the nux vomica by increasing the reflex excitability and "nervousness" in neurasthenics. But why give the patient a "hand-me-down" article at any time, when he comes to us for individual measurement and fit? Not only is this not best for the patient, but it is even worse for the physician. By getting into the lazy habit of prescribing ready-made preparations, he loses in aptitude and power of devising combinations of his own. How miserably dependent we become when we practice prescribing according to formularies will be painfully evident to the routine C. C. pill and A. S. and B. pill prescriber, who might desire to reform. But it is worth the effort; and the attempt to get out of the rut should be made before a sclerotic condition of habits of thought and action have made such a change impossible.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

CHLOROXYL.—Cinchophen hydrochloride.—Phenylcinchoninic acid hydrochloride $C_6H_5C_6H_5NCOOH.HCl$. The hydrochloride of 2-phenyl-quinoline-4-carboxylic acid.

Actions, Uses and Dosage.—The same as that of cinchophen (see New and Nonofficial Remedies, 1920, p. 224) Phenylcinchoninic Acid (Cinchophen) and Phenylcinchoninic Acid Derivatives.

Manufactured by Eli Lilly and Co., Indianapolis, Ind. U. S. patent No. 1,306,439 (June 10, 1919; expires, 1936).

Chloroxyl Tablets 5 grains.—Each tablet contains chloroxyl 0.325 Gm. (5 grains).

Chloroxyl is a yellow crystalline powder with an astringent, slightly bitter taste. It is insoluble in water, ether or chloroform, but slightly soluble in alcohol.

When dry, chloroxyl melts at about 223 C.

Accurately weigh about 2 Gm. chloroxyl, add 250 Cc. half-normal volumetric sodium hydroxide solution and heat on a boiling water bath for one hour. Determine the excess of sodium hydroxide by titration with half-normal hydrochloric acid volumetric solution, using phenolphthalein as indicator. Chloroxyl contains not less than 12 per cent. nor more than 12.8 per cent. combined hydrochloric acid (each Cc. sodium hydroxide solution is equivalent to 0.00912 Gm. HCl).

Dissolve 2 Gm. chloroxyl in 10 Cc. solution sodium hydroxide: heat to boiling, and while hot add acetic acid until no further precipitate is formed. Cool, decant the supernatant liquid and wash the precipitate with distilled water until it is free from acetic acid. Dry the precipitate at 100 C. This precipitate responds to the U. S. P. tests for phenylcinchoninic acid.

Inexpensive Breakfast Food.—DR. J. G. GRANT, Akron, Ohio, writes: Most people are now interested in reducing the high cost of living. For those who use wheat breakfast food, I have a suggestion, after having tested this plan more than a year: Buy wheat from a farmer or dealer and grind it in a coffee mill or food grinder. For two dollars I bought a spice mill, which is larger than a coffee mill. This food is excellent and many times cheaper than that sold in packages.

1. Alvarez, W. C.: The Syndrome of Mild Reverse Peristalsis, J. A. M. A. 69: 2018 (Dec. 15) 1917.

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SATURDAY, FEBRUARY 14, 1920

EFFECTS OF QUININ ON THE TISSUES

There are circumstances in which the vigorous action of adequate quantities of quinin in the circulation is highly desirable. The alkaloid itself is rather insoluble; but some of the salts of quinin are fairly soluble, and are absorbed with considerable readiness from the gastro-intestinal canal. The Pharmacology of Useful Drugs,¹ issued by the American Medical Association, makes it seem probable that too much importance has been attached to the influence of the degree of solubility of the salts of quinin on their absorption, and too little attention to the selective capacity of the gastro-intestinal tract for absorbing them. In the United States, in contrast with European countries, quinin sulphate is the salt generally prescribed, although the hydrochlorate is decidedly more soluble and ought to be preferred. However that may be, numerous endeavors have been made to secure more effective quinin therapy, particularly in malaria, by modes of administration other than the usual oral path.

Bacelli first suggested the intravenous injection of solutions of salts of quinin when the symptoms of malaria are so severe as to threaten grave peril to the patient. Subcutaneous or intramuscular injection has also been recommended and frequently employed, particularly in critical cases. Despite the use of care in giving such treatment, much discomfort and pain may be caused; and even if aseptic precautions are studiously applied, a considerable amount of induration if not actual abscess formation is likely to occur at the site of injection. Most therapists recognize this danger and warn against it.

That tissue necrosis is produced by strong solutions of quinin salts need not be a surprise when it is recalled that for more than half a century the substance has been regarded by toxicologists as a protoplasmic poison capable of destroying various forms of animal and vegetable cells. The suggestion has at times been made that, because of the observed tissue damage following intramuscular injections, this mode of administration should be abandoned. A recent experimental inquiry

by Colonel Dudgeon² of the British Army Medical Service on the effects of injections of quinin into the tissues throws new light on the actual conditions developed by the procedure. It had been suggested that in order to avoid the untoward results, intramuscular medication should be carried out only with dilute solutions. Dudgeon points out, however, that injection of quinin in solutions so dilute as to avoid edema and tissue necrosis is not of practical utility in man. Concentrated preparations of quinin produce more intense necrosis than do dilute ones; but when the latter are such as to be of therapeutic value, they also excite the tissue changes at the site of infection.

A concentrated solution of quinin is absorbed rapidly from the tissues even in patients who are moribund. Dudgeon insists on the necessity of realizing that tissue necrosis—spreading edema and local blood destruction—are produced by the solvents frequently employed for quinin administration; and the effects are only slightly inferior to those excited by the quinin salts and the alkaloid. No advantage was gained by the addition of oil or by injecting the alkaloid dissolved in alcohol or ether. Necrosis of blood vessels in the area of injection is a common result. This leads, according to Dudgeon, to hemorrhages into the tissues. Extensive damage of these sorts in the neighborhood of an important nerve trunk may result in nerve palsy.

It may be that a choice between disadvantages will dictate the continuance of intramuscular injections of quinin. If so, the limitations and dangers of their use in practice need to be appreciated clearly and specifically. Daily doses administered for periods of a week and more in the gluteal region—a favorite site of injection—are not unknown. Such cases have been found, further, to retain only fragments of healthy tissues in the muscular tracts involved. Hence one can appreciate the force of Dudgeon's warning that repeated intramuscular injections of quinin should not be given into the same area of muscle or tissue directly adjacent, because otherwise permanent injury of muscle or nerves may result.

THE MENTAL CONDITION PRECEDING SUICIDE

It is a curious but well substantiated fact, commented on some time ago in *THE JOURNAL*,³ that there are fashions in suicide just as there are in almost every other human activity. Indeed, the fashion changes not only with regard to the methods employed for terminating existence, but also in the whole attitude of peoples toward suicide. In the days of the ancients, suicide was not regarded as a crime. The Stoic school of philosophy taught that every person had the right to decide whether or not to continue in this life.

In the United States alone about 10,000 persons annually terminate their existence by self destruction.

2. Dudgeon, L. S.: On the Effects of Injections of Quinin into the Tissues of Man and Animals, *J. Hyg.* **18**: 317 (Oct.) 1919.

3. The Style in Suicide and Homicide, *Current Comment*, *J. A. M. A.* **73**: 1367 (Nov. 1) 1919.

1. Hatcher, R. A., and Wilbert, M. I.: *Pharmacology of Useful Drugs*, Chicago, American Medical Association, 1915.

This large number of deaths naturally brings up the question of the prevention of suicide, which in turn leads to a consideration of its causes. Since self destruction is no longer countenanced by public opinion, the number of suicides has decreased considerably, and it is safe to assume that persons seldom resort to the procedure unless they are mentally abnormal or unless there are strong reasons of an unpleasant nature. Certain psychiatrists, Forbes Winslow, for example, have held that invariably persons who commit suicide are mentally abnormal; but there is little doubt that this view is not correct. In the case of criminals, particularly, there is evidence of deliberate suicide by persons perfectly capable of understanding the nature of the act. The fact remains, however, that in existing circumstances the majority of those who take their own lives are mentally abnormal. Recently Brend,⁴ in discussing the mental condition preceding suicide, has shown that probably 50 per cent. of all such persons are definitely insane, and that most of these are suffering from melancholia, chronic alcoholic insanity, or the hebephrenic form of dementia praecox. The statistics from certain European army hospitals indicate that patients suffering from psychoses, particularly those of the manic-depressive type, are much more likely to commit suicide than patients suffering from neuroses. Neurotic persons frequently discuss suicide and express fear that they will do away with themselves, but they hardly ever reach the point of actually attempting self destruction. Figures quoted by Brend show that among 3,700 patients suffering with neuroses there were only one suicide and two unsuccessful attempts, whereas among 3,000 patients suffering from psychoses there were three successful suicides and 105 unsuccessful attempts. It is tolerably clear, therefore, that a considerable proportion of all suicides occur in mentally abnormal persons.

The question of the prevention of suicide is intimately associated with the early detection and treatment of insanity. At present, agencies for the early detection and treatment of insanity are conspicuous chiefly by their absence. This is true not merely in the United States but throughout the world. Some progress has been made in combating this condition by the establishment of psychopathic hospitals and by the educational efforts of bodies like the National Committee for Mental Hygiene and its allied state committees; but material progress will not be made until the public has been educated to a more acute appreciation of the importance of the early detection of mental disease, and until the facilities for the early treatment of mental cases under voluntary commitment to a hospital for the insane have been widely extended. It is quite certain that more widespread education in mental hygiene would result in a reduction in the number of suicides.

AMEBIC DYSENTERY IN THE UNITED STATES

Scarcely thirty years have elapsed since Osler¹ published what is believed to be the first report in this country of a case of dysentery in which amebas were found in the stools. Not long afterward, Lafleur² reported another case and demonstrated the living parasites. Welch remarked on this occasion that it was the second case of dysentery reported on this continent and the first exhibit of the organism before a medical society in this country.

We have been inclined to regard intestinal amebiasis as something belonging to the tropics and foreign to the United States. The disorder has consequently been expected only in persons who have recently returned from tropical countries. Nevertheless, amebic dysentery has been by no means unknown in the Southern United States, and sporadic cases have been reported from time to time in New England, as well as in the Eastern, Central and Western states. In 1909, Patterson³ collected records of the disease in twenty-four states, many of them in the Northern sections of the country. Since then practically all of the states have been shown to harbor patients with amebiasis.

Although this type of dysentery has rarely been epidemic in temperate climates, occasional outbreaks have been known to occur, as for example in the German army in East Prussia in 1901.⁴ More recently, the special examinations of the feces of very large numbers of persons for intestinal parasites have directed attention anew to the possibility of the existence of amebiasis in this country to an extent formerly unsuspected. Instructive instances have been furnished by the division of parasitology of the California State Board of Health.⁵ As a result of a circular letter to forty-five hospitals at points widely distributed throughout the state, a total of fifteen cases of amebic dysentery was reported from eight of these institutions. Out of seventeen cases there were at least six in which the disease seems to have been contracted in California. If a necessarily cursory survey brought to light such a number of cases, it can scarcely be doubted that amebiasis is more prevalent than the identified instances directly indicate.

The situation is complicated further by the undoubted existence of carriers who reveal absolutely no dysenteric symptoms, yet harbor the parasitic organism in some form. Although the motile stages of *Endameba dysenteriae* are very sensitive to change and cannot readily withstand conditions outside of the hosts, this

1. Osler, William: On the Amoeba Coli in Dysentery and in Dysenteric Liver Abscess, Bull. Johns Hopkins Hosp. 1: 53 (May) 1890.

2. Lafleur: Demonstration of Amoeba Coli in Dysentery, Bull. Johns Hopkins Hosp. 1: 91 (Sept.) 1890.

3. Patterson, H. S.: Endemic Amoebic Dysentery in New York, with a Review of Its Distribution in North America, Am. J. M. Sc. 138: 198, 1909.

4. Strong, R. P.: Amebic Dysentery, cited in Osler's Modern Medicine 1: 489.

5. Cort, W. W., and McDonald, J. D.: Amebic Dysentery in California, J. Infect. Dis. 25: 501 (Dec.) 1919.

4. Brend, W. A.: The Mental Condition Preceding Suicide, Practitioner 103: 1401 (Dec.) 1919.

is not equally true of the cysts of the organism. When the latter are voided with the feces, they are apparently very resistant. They survive for considerable periods in water; and this fact is important in relation to the spread of amebiasis. Ordinary bacterial examination of water will not reveal the presence of endamebic cysts. The water may carry contamination to garden produce as well as directly into the drinking supply.

The California investigators, Cort and McDonald,⁵ have pointed out that countries with long, dry seasons or those with long periods of temperature below the freezing point will find in natural conditions a considerable check on the distribution of amebiasis. However, conditions might occur in almost any country at almost any time under which there would be sufficient moisture and a high enough temperature to make possible the transfer of the cysts in a viable condition from one person to another. On the other hand, as Cort and McDonald further point out, California is unique in having certain conditions favorable to the spread of amebic dysentery. Within the state are large numbers of people from countries where the disease is prevalent, many of whom are undoubtedly carriers. A large majority of these raise garden produce, or become cooks and domestic servants. The state also has extensive irrigated areas that are seldom, if ever, visited by a freezing temperature for a considerable period. California is also uniquely situated with respect to the introduction of the disease. Yearly there have come in a large number of immigrants, the greater part of whom have settled in the state. These immigrants have come principally from Japan, China and India, where intestinal protozoa are common.

WHAT IS SO-CALLED SCIENTIFIC DRINK CONTROL?

The legal controversies and the debates that have been initiated by the enforcement of nation-wide prohibition in the United States have unexpectedly emphasized that many of the essential facts regarding alcohol and its action are not yet known to science. This is surprising, in view of the extent to which alcohol has been and still is being consumed by man. Nevertheless, it is true that there exist scarcely any manuals which may be referred to by the general reader for authoritative statements of unbiased expert opinion regarding a subject of such widespread interest. Most of the evidence is tinged either with the prejudice of the temperance fanatic or the insidious propaganda of ex parte influence.

The markedly lowered death rate from alcoholism following the legal prohibition of alcoholic beverages in one of our largest American cities was recorded recently in *THE JOURNAL*.¹ In Great Britain the lessened number of convictions for drunkenness follow-

ing the decreasing sale of alcoholic drinks during the war period has frequently been cited. It is becoming evident throughout the civilized world that either the most objectionable results of drinking must be eliminated by some sort of reform or else the prohibition wave is certain to sweep beyond the shores of the Atlantic. Thus the problem of drink regulation has been brought into new relief. The chairman of the Central Control Board for Liquor Traffic in England, Lord D'Abernon,² has thus expressed the hope of the reformers who face the alternative of liquor suppression:

If by the method of regulation on physiological principles we can secure adequate results for the health and sobriety of the nation, these results will be attained with less apparatus, with less risk of creating alternative evils, with less loss of revenue, with less disturbance of trade and less abrupt violation of the habits of the community.

Prohibition as a national possibility has still for the most part to demonstrate its results and its limitations in this country. It is a new social experiment on a huge scale. Meanwhile we may do well to examine judiciously the scientific basis of some of the proposals of those who would regulate rather than prohibit the liquor traffic. Aside from the irritant action of concentrated solutions on the mucous membranes, the pharmacologic or toxicologic effects of alcohol depend primarily on the concentration which it attains in the circulating blood. The Advisory Committee of the Central Control Board in London, including scientists of recognized talent, has directed the investigation of the comparative effect of identical doses of alcohol in dilute or concentrated solutions, respectively. The outcome showed that with dilute solutions the maximum level of alcohol in the blood is lower than when the drug is taken in concentrated form.

The bearing of this on the difference between alcohol in the forms of beer, wine and distilled liquor is obvious. But it was further demonstrated that the same amount of alcohol taken in the form of beer was decidedly less intoxicating than spirits diluted to contain the same dose of alcohol in equal volume. The reason is not demonstrated; but since beers contain ingredients other than alcohol, it is presumably allied to the well known fact that alcohol taken with foods is absorbed more slowly than when it is drunk on an empty stomach. The cocktail and analogous drinks are thus condemned on physiologic principles.

Lord D'Abernon, who presumably speaks with the authority of large groups of conservative Britons, has also discussed the plan of discontinuity of drinking hours—a device, somewhat comparable to the preferment of dilute alcoholic beverages, intended to decrease the evils of drunkenness simply by diminishing the amount of liquor drunk at one time. Experience in Great Britain has unexpectedly disclosed that restricted

1. Prohibition and the Death Rate, editorial, *J. A. M. A.* 74: 109 (Jan. 10) 1920.

2. D'Abernon: The Scientific Basis of Drink Control, Address at the Autumn Conference of the Society for the Study of Inebriety, Oct. 14, 1919; *Brit. Jour. Inebriety* 17: 73 (Jan.) 1920.

hours for liquor traffic do not accomplish the end sought.

The oxidation and elimination of alcohol proceed at only a moderate rate. According to Mellanby's experiments, the quantity of alcohol included in 2 pints of beer—about 45 c.c. of alcohol—requires an interval of three or four hours before it is completely burned or excreted. Superimposing an extra dose of alcohol within the interval brings the risk of inebriation. Lord D'Abernon points out that no benefit will result, therefore, through drinking less concentrated alcoholic beverages at intervals curtailed and regulated by law, if liquors of high alcoholic content can be consumed within the limited period.

We are told that it is more important to regulate how a nation drinks than how much it drinks. One may accept the principles of the use of drinks of low alcoholic content and the regulation of drinking hours, perhaps so as to make them coincide more nearly with meal hours, as the essential conditions for any promising system of drink control short of prohibition. But it remains to be demonstrated that rationing beer, or restricting the opening hours of the saloon, or any other governmental system short of the elimination of the liquor traffic, will accomplish for human welfare what is expected of prohibition in the United States. Nowadays scientific experiments are being conducted on a national scale.

Current Comment

NEW TARIFF ON DYE PRODUCTS

An event of uncommon interest to the medical profession is the amendment adopted by the subcommittee of the Senate Finance Committee to the bill placing a duty on dyes imported into the United States. This amendment places a tariff of 45 per cent. on the higher saccharids, adonite, arabinose, dulcitol, galactose, inosite, inulin, levulose, mannitol, mannose, melizitose, raffinose, rhamnose, sorbitol and xylose. Prior to the war these chemicals came exclusively from Germany. Their manufacture in this country started as a result of stoppage of importations. Medical officers of the army succeeded in having these chemicals manufactured in the United States, and this protective tariff will, it is believed, save this industry and permit its future development. The tariff was advocated by Professor Stieglitz, chairman of the Committee on Synthetic Drugs of the National Research Council, by Colonel Reasoner, in charge of the field medical supply depot at Washington, and by Colonel Russell of the Army Medical School. Colonel Russell said:

"Many of the rare sugars are used in bacteriology in the differentiation of various disease-producing micro-organisms. It is a well established fact that certain bacteria as, for example, the bacillus of typhoid fever, use certain sugars and from them produce acids and other products which we can measure or detect if present only in small amounts; some organisms, such as the colon bacilli, produce not only acid, but gas, which is caught in a fermentation tube, measured

and analyzed. The differentiation of the real from the pseudo-organisms of diphtheria and some other diseases depends on sugar fermentations and on animal experiments.

The quantities used in any one test are quite small but a large variety, and a good supply of the principal sorts is indispensable, and we should not be satisfied to rely in the future on other countries for products of such fundamental importance, but should aid the growing industry which is now being organized in the United States.

SPEAKING OF GLANDS —

Although the glands of internal secretion have been a source of interest to the medical profession for some time, it is only recently that the attention of the lay public has been called to these structures. During the recent illness of one of our noted statesmen, widespread discussion of one of these glands was common, even in polite society. The subject was considered from every possible point of view, and it is doubtful whether there is any well-informed person today who has not some vague idea of the functions of this particular structure. Later, sensational newspapers made much of the discovery—if it should be called such—of the Frenchman Voronoff, that the interstitial cells of the testes might be used to stimulate growth, and as the newspapers would have it, perpetuate youth. Little has appeared in scientific literature concerning this point. However, Macht¹ has just reported that feeding of prostate gland tissue to tadpoles resulted in stimulation of the metabolism, hastening metamorphosis, with the further result that the size of the tadpoles was not diminished, but in many cases actually increased. This effect was produced by feeding the desiccated prostate of the ram, the bull and also that of human origin. It has been known for some time that feeding of thyroid tissue also hastens metamorphosis. In the case of the thyroid, however, there is a shrinkage or dwarfing in the size of the tadpoles as contrasted with the observation that prostate feeding produces increased size and more rapid growth. Controlled experiments made with other desiccated glands fail to produce a similar effect. We are thus beginning to gain an inkling of knowledge regarding certain growth-producing factors of the human organism. One may yet see "gland fathers" and "gland mothers."

WHAT IS THE MATTER WITH ARKANSAS?

Arkansas evidently still elects to be the dumping ground for quacks, charlatans and half-baked medical practitioners coming from schools not recognized in the majority of states. A legislative effort was made recently to secure a new practice act by which this could be prevented, but the bill was killed. Instead of having a single board with a reasonable minimum standard of educational qualifications for those who are to obtain the legal right to treat human disorders, Arkansas has at present divided the authority among six different boards. It now has not only a regular board of medical examiners but also a homeopathic board, an eclectic board, an osteopathic board, a chiropractic board and an optometry board. Any other cult

¹ Macht, D. I.: On the Effect of Prostate Feeding on the Development of Tadpoles, *J. Urol.* 3: 411 (Oct.) 1919.

seeking recognition could doubtless easily secure it in the wide open and generous state of Arkansas. Through the eclectic board in Arkansas, a low grade so-called eclectic medical school in Kansas City, the Kansas City College of Medicine and Surgery, not recognized in Missouri—its home state—continues to exist, since its graduates have easy entry into Arkansas. Through the existence of the several boards, others may prey on the public of Arkansas without first obtaining reasonable qualifications of preliminary and medical education. How long are the people of Arkansas going to stand for such flimsy protection against ignorance and incompetence? Do they appreciate the fact that they themselves are and will be the sufferers?

DEATHS FOLLOW THE EATING OF RIPE OLIVES

The death of six persons in Memphis, Tenn., following the eating of ripe olives, with a fatal prognosis in a seventh case, are reported in the General News department in this issue. Investigation has already revealed the fact that these deaths were due to *Bacillus botulinus*, the olives being packed by the "cold pack" method. The brief report thus far available indicates that the food product in question was a part of a salvaged stock and that the olives when found possessed a noticeably pronounced foul odor. Deaths have previously been reported from the same source in Canton, Ohio, Detroit and New York, and wide prominence has been given to the fact that all of these deaths followed the eating of ripe olives. And yet there will no doubt continue to be persons who will eat noticeably spoiled food, just as there are persons who attempt to outrace railroad trains over grade crossings, persons who step off moving street cars backward and some who refuse vaccination against smallpox.

COMMERCIAL DOMINATION OF BIOLOGIC THERAPEUTICS

The danger of commercialized therapeutics has been enormously increased by the introduction of biologic products. These substances offer a rich field for the commercially minded, first, because of the remarkable results which seem to have followed the use of certain products of this type; second, because the field is new and the mode of action of these substances not readily understood and, third—and most important—because, by the very nature of the problems involved, few physicians are well informed concerning them. The influenza epidemic of last year was widespread and fatal in character. It stimulated earnest research in methods of prevention and cure. We were all in a frame of mind to grasp at any straw. Here and there some worker would cry "Eureka"—only to be disappointed when his product was actually put to the test. However, there were more than enough manufacturers ready to place any product on the market with specious claims that could not be positively denied. Vaccines, serums, proteins—all were advanced with such glowing statements as to their properties that only those physicians who kept their

feet firmly on solid ground could resist the appeal. Now we have had another epidemic—mild, it is true—but the memories of last year make the average physician ready to accept anything which promises hope, and the manufacturers—"make hay while the sun shines." Physicians have been and are being deluged with literature on the prophylaxis and treatment of influenza. So far as we know, few publications have contained any word of warning on these matters. One exception has just come to notice: the *Medico-Military Review*, a semimonthly mimeographed publication sent to medical officers of the Army by the Surgeon-General's Office. This says:

YOU ARE REMINDED that so far a comprehensive analysis of results obtained by the use of monovalent and polyvalent vaccines in the prevention of influenza has not demonstrated their value. Much carefully controlled experimental work is now being carried out on this subject both in civil institutions and in the Army, and any worthwhile advances will be reported in the *Review* from time to time. If a prospective vaccine is developed, it will be prepared at the Army Medical School for general distribution and all medical officers will be duly notified. The general use of the present commercial polyvalent protective against influenza is not considered desirable. Numerous telegrams and other requisitions are being received for influenza vaccine. In view of the fact that no prophylactic influenza vaccine is available, such requisitions should be discontinued.

Association News

ELECTIONS BY BOARD OF TRUSTEES

Council on Pharmacy and Chemistry

At the annual meeting of the Board of Trustees held at the headquarters of the Association, February 6, Drs. F. G. Novy, Ann Arbor, Mich.; G. W. McCoy, Washington, D. C., and George H. Simmons, Chicago, were elected members of the Council on Pharmacy and Chemistry.

Editorial Boards of Publications

The following were elected members of the editorial boards of the special journals published by the Association as indicated: Dr. Joseph L. Miller, Chicago, *Archives of Internal Medicine*; Dr. Fritz B. Talbot, Boston, *American Journal of Diseases of Children*; Dr. Frederick Tilney, New York, *Archives of Neurology and Psychiatry*, and Dr. Samuel T. Orton, Iowa City, to fill the unexpired term of Dr. August Hoch, deceased, *Archives of Neurology and Psychiatry*.

THE NEW ORLEANS SESSION

Hotel Reservations for the New Orleans Session

The chairman of the Local Committee on Hotels, Dr. J. J. Wymer, 1216 Maison Blanche Building, New Orleans, urges those who plan to attend the annual session of the Association at New Orleans, April 26 to 30, to make hotel reservations promptly. (For hotel headquarters see THE JOURNAL, Jan. 10, 1920, p. 110.) The Committee on Hotels will gladly assist those who do not secure reservations at the hotel of their choice to arrange for comfortable lodgings.

By Boat to New Orleans

The schedule of the Southern Pacific Steamboat Line announces a boat to leave New York on Saturday, April 24, and to arrive in New Orleans at 9 a. m. Wednesday, April 28. The boat will lie at the Canal Street Pier, New Orleans, until Saturday, May 1. Passengers may make arrangements so that they may occupy state rooms for the three days on which the sections meet. In this way, they will be assured of comfortable lodgings while at New Orleans.

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., who is arranging parties to go by boat to New Orleans, reports that already he has received a number of inquiries indicating interest in the proposed excursion, and wishes to learn as promptly as possible how many desire to join these parties in order that definite arrangements may be completed. Tentatively, he estimates that the time necessary for the round trip by boat will be about, but not over, two weeks; that the cost of the trip will be practically equivalent to railroad fare and the cost of sleeping car accommodations and meals. If the demand warrants, one party will sail from New York and another from some point on Chesapeake Bay. The latter will stop at Old Point Comfort and Havana. The plans are that these boats shall arrive at New Orleans on Tuesday afternoon in time for the General Meeting, the opening meeting of the Scientific Assembly, and the passengers will occupy their state rooms during the time of the annual session. While in New Orleans, breakfast may be obtained on the boat.

Pullman Sleeping Cars May Be Parked at New Orleans

Physicians from different points are planning to charter Pullman coaches which will be parked practically in the center of the city so that they may be occupied during the time of the annual session. This use of Pullman coaches is common at the Mardi Gras and other large gatherings in New Orleans. It provides reasonably comfortable lodgings at moderate rates. Parties starting from different points may charter a Pullman car and retain it throughout the session, in this way being assured of comfortable accommodations on the going and returning trip as well as while in New Orleans. The terms, including the charges, may be obtained from the railroad ticket office at the point from which such parties will start for New Orleans.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Baby Clinic at Little Rock.—The United Charities Association, Little Rock, has opened a baby clinic at the Armory City Park, where a nurse is in attendance from 1 to 3 p. m. to instruct mothers on the care of babies. On Wednesdays from 1 to 2 p. m. babies will be weighed and examined by the physician in charge. When babies are too ill to be brought to the station the nurse will visit the home.

Hospital News.—Governor Brough has issued a proclamation calling on the people of the state to support the campaign for raising \$300,000 for the erection of a children's hospital in Arkansas. Plans for the hospital have been completed. It will be of fireproof construction throughout. The site for the hospital has not been selected.—Through the cooperation of the city and the Medical Department of the University of Arkansas, the free dispensary in the Isaac Folsom Clinic Building, Little Rock, has been reorganized and reopened. A pharmacy, a laboratory and a roentgen-ray department have been installed, and a clinical clerk has been employed.

ILLINOIS

Cost of Influenza.—The state director of health estimates that the influenza-pneumonia epidemics of 1918 and 1919 have cost the people of Illinois more than \$125,000,000. The value of the life of an adult is placed at \$3,000 and that of a child at \$500. During the year ended June 30, 1919, there were 223,683 cases of influenza and pneumonia, with 25,222 deaths.

Chiropractor Serving Jail Sentence.—Mrs. Emma Calvin of Monticello is now serving a jail sentence for violating the medical practice act. Mrs. Calvin is a member of the Illinois Association of Chiropractors, and the secretary of the association, with headquarters at Joliet, has sent out a letter to other chiropractors urging that Mrs. Calvin be supplied with reading matter during her incarceration.

Personal.—Dr. Albert R. Trapp, Springfield, is reported to be seriously ill with pneumonia.—Dr. Charles E. Dorr, Worden, was recently attacked on the street by a coal miner and sustained fractures of the nasal and one of the malar bones.—Dr. William H. Grayson, Granite City, the oldest member of the Tri-City Medical Society, was the guest of honor at a banquet given by that organization, January 23.

What Medical Freedom Advocates Want.—The advocates of "medical freedom" propose the following as a section of the bill of rights in the contemplated new constitution of the state of Illinois: "The free exercise and enjoyment of the profession and practice of the art of healing, without discrimination shall be forever guaranteed; and no person shall be denied any of his opinions in the field of that art; but liberty of conscience hereby secured shall not be construed to dispense with sanitation in the sense of cleanliness, or excuse acts of licentiousness, or justify practices inconsistent with the peace and safety of the state. No person shall be required to obey, or to pay taxes to support, any practitioner or any system of healing against his consent, nor shall any preference be given to any school or system of healing."

Chicago

Joint Meeting.—At a joint meeting of the Chicago Medical Society and Chicago Pathological Society held February 11, papers were read by Dr. Harry Gideon Wells, on the "Pathological Characteristics of Tumors in Mice, and Their Relation to Human Tumors," illustrated by lantern slides, and by Dr. Maude Slye, on "The Inheritability and Biological Characteristics of Tumors," illustrated by charts.

Indictments.—Indictments were returned by the Federal Grand Jury, January 21, against William H. Sage, former head of the narcotic division of the Internal Revenue Bureau, Dr. Joseph A. Greaves and Hyman Cohen, proprietor of the William H. Sage Drug Co., charging them with violation of the Harrison Narcotic Law.—Dr. Anna B. Schultz is reported to have been arrested, January 23, charged with writing wholesale prescriptions for liquor.

MAINE

Work of State Laboratory.—More than \$36,000 was saved to the people of Maine during 1919, through 10,000 free tests made by the diagnostic laboratory of the state department of health at Augusta, of which Dr. Herbert E. Thompson, Augusta, is director and Mrs. Ruth Patten is biologist. Of these tests 5,837 were made for venereal disease; 1,063 for diphtheria; 1,827 for tuberculosis; 380 for typhoid; 243 for malignancy, and the remainder for miscellaneous conditions.

New Officers.—At the fifty-first stated meeting of the Cumberland County Medical Society, Dec. 12, 1919, Dr. Francis J. Welch, Cumberland, was elected president; Dr. Daniel Driscoll, Cumberland, vice president, and Dr. Erastus E. Holt, Jr., Cumberland, secretary-treasurer.—York County Medical Society held its ninety-ninth annual meeting in Biddeford, January 7, and elected Dr. Frank W. Smith, York Village, president; Dr. Paul S. Hill, Saco, vice president; Dr. Arthur L. Jones, Old Orchard, secretary, and Dr. Carl G. Dennett, Unity, treasurer.

Venereal Disease Clinics.—Five free clinics for persons suffering from venereal disease who are unable to pay for treatment have already been established in the state. These are at the Augusta Health Center with Dr. George A. Coombs, in charge; at the Mason Dispensary, Portland, with Dr. Gustav A. Pudor, in charge; at the Eastern Maine General Hospital, Bangor, with Dr. Harrison J. Hunt, in charge; at the Bath Health Center, with Dr. Langdon T. Snipe, in charge, and at Dr. Miner's hospital, Calais, with Dr. Walter N. Miner in charge. Clinics will soon be in operation at Rockland and Waterville.

Public Health Work.—Under the direction of Dr. Leverett D. Bristol, Augusta, commissioner of health, a new era of public health work opened in Maine this year when the state was divided into eight health districts with a full-time district health officer in each district. With one exception the new district officers were physicians, qualified both by general practice and by previous health work in their various communities. The new officers are Dr. Clarence F. Kendall, Biddeford; Dr. James W. Loughlin, Damariscotta; Dr. Guy H. Hutchins, Presque Isle; Dr. Edward P. Goodrich, Lewiston; Dr. John F. Stevens, Millinocket; Dr. Henry D. Worth, Bangor, and Alton S. Pope of Waterville.—Legislation went into effect, January 1, providing that a local health officer, either for full or part time, shall be employed by

every community or group of communities in Maine, and such appointments are slowly being made in the different towns, subject to the approval of the commissioner.

MARYLAND

New Officers.—The Caroline County Medical Society at its annual meeting elected Dr. Stephen S. Stone, Ridgely, president, and Dr. John R. Downes, Preston, secretary-treasurer.

Personal.—Dr. George F. Sargent has purchased property near Towson, which he will open as a sanatorium.—Dr. William E. Martin, Harrisonville, who has been ill has recovered and resumed practice.—Dr. Ida M. Kahn of China, in charge of the first woman's hospital at Nanchangfu, and for two years in charge of a hospital for women at Tientsin, spoke at a meeting at the Y. M. C. A. in Baltimore, February 8, on her work in China.

Hospitals Crowded.—Baltimore hospitals, with one exception, are crowded to their capacity with patients. The only hospital whose public ward is not crowded is the Johns Hopkins, the largest in the city. Dr. William L. Moss, Baltimore, president of the Maryland Hospital Conference Association, sounded a warning to the community in reviewing the situation, as the condition is growing more critical every day, with the danger from the spread of influenza and pneumonia. At the office of the supervisors of city charities, where patients may be designated to the free wards, it was said that the situation never had been so serious. The closing of the two colored wards at the Maryland General Hospital because of a shortage of nurses constitutes another serious problem in the hospital situation, as it affects the care of the colored patients.

MISSOURI

Porter Addresses Academy.—Dr. John L. Porter, Chicago, delivered an address before the Kansas City Academy of Medicine, February 13, on "Differential Diagnosis of Chronic Joint Diseases."

Personal.—Dr. Emmett McD. Bridgford, Santa Fe, is reported to be critically ill.—While a grand jury at Kansas City, January 15, was considering criminal charges against him, Dr. John W. C. Boone, Kansas City, is reported to have shot and wounded the husband of the woman who had preferred the charges.

License Suspended.—For soliciting patronage through agents in violation of the medical practice act, the state board of health is said to have suspended the license of Dr. Oscar A. Young, Excelsior Springs, for a period of one year from Nov. 10, 1919. Dr. Young appealed to the circuit court of Clay County which sustained the action of the board.

NEW YORK

State Aid for Tuberculous.—The legislature has been asked to appropriate \$1,000,000 for state aid to tuberculous patients. The bill proposes to license boarding houses in the country for the care of tuberculous patients, and to assure medical supervision and proper sanitary conditions.

Personal.—Dr. Thomas B. Carpenter, Buffalo, has been appointed director of laboratories of the department of health of Buffalo to fill the place of Dr. William G. Bissell, deceased.—Dr. George R. Little, Schaghticoke, has been elected and Dr. Stanton P. Hull, Petersburg, reelected a member of the board of directors of the Rensselaer County Tuberculosis Association.

Semicentennial of Society.—The semicentennial anniversary of the Jenkins Medical Society was celebrated at the New York Athletic Club, January 8. Dr. Henry Moffat, Yonkers, presided as toastmaster, and addresses were made by a number of prominent physicians of New York City. The membership of the society is made up of physicians of Mount Vernon and Yonkers.

Postgraduate Course at Albany.—A course in infectious diseases and public health will open at the Albany Medical College, March 4, and sessions will be held each Thursday until the last week in April. An additional day will then be devoted to practical demonstrations, and thereafter the class will be in session on Thursdays and Fridays until June 18. The course will be in charge of Dr. Charles C. Duryee, Schenectady, to whom all communications and applications should be made.

Appropriation to Fight Influenza.—A call on the legislature, February 2, for an appropriation of \$50,000 to combat

the influenza epidemic, met with instantaneous response. From January 23 to February 2, there were reported to the state department of health, 799 cases of pneumonia, with 139 deaths, and 5,850 cases of influenza, with twenty-one deaths. Advices received at the department of health indicate that influenza is prevalent in rural districts and in Syracuse, Jamestown, Poughkeepsie, Mount Vernon and Albany.

New York City

Venereal Disease Lectures.—During the month of December, audiences totaling 3,400 men and women attended forty-three lectures on venereal diseases given under the auspices of the division of lectures of the bureau of public health education.

County Society Discontinues Prosecution of Illegal Practitioners.—Owing to the expense incident to this work the Medical Society of the County of New York has taken action discontinuing the collection of evidence and the prosecution of cases of unlawful medical practice. Hereafter all cases of unlawful practice which, in the opinion of censors, require investigation or prosecution, will be reported to the police department of the city and the district attorney for action.

Establish and Protect Priority to Medical Discoveries.—At a meeting of the section on historical medicine of the New York Academy of Medicine, February 4, a committee composed of Dr. Robert T. Morris, Dr. Thomas L. Stedman and Dr. A. L. Soresi suggested the creation of a special medical board that should establish and protect the priority of ideas relating to medical subjects. This board should correspond to the patent office; it should patent in its name all new surgical instruments and pay a royalty to the inventors, much as publishers deal with writers of medical books.

Associated Physicians of Long Island Elect.—At the twenty-second annual meeting of the Associated Physicians of Long Island, January 31, the following officers were elected: president, Dr. Henry Goodwin Webster, Brooklyn; vice presidents, Drs. Harris A. Houghton, Bayside, Hugh Halsey, Southampton, and Joshua M. Van Cott, Brooklyn; secretary, Dr. James Cole Hancock, Brooklyn, and treasurer, Dr. Edwin S. Moore, Bay Shore. Following the scientific session a dinner was served at the Montauk Club, after which addresses were made by Father John L. Bedford, Brooklyn; Hon. Walter C. Burton, postmaster, Brooklyn, and the Hon. Regis H. Post, ex-governor of Porto Rico.

OKLAHOMA

Tuberculosis Clinic Organized.—Under the direction of Drs. William E. Lamerton, Julian Field and the public health nurse of Garfield County. Enid has opened a free tuberculosis clinic.

New Officers.—At the annual meeting of the Central Oklahoma Medical Association held in Enid, January 20, Dr. William H. Rhodes was elected president, and Dr. Harry F. Van Dever, secretary-treasurer, both of Enid.

Personal.—Dr. Francis B. Fite, Muskogee, has been unanimously selected by the city commissioners to fill the vacancy as mayor.—Dr. Dock Long, Duncan, has been appointed chief physician of the bureau of tuberculosis of the state department of health.—Dr. and Mrs. David A. Myers, Lawton, were seriously injured in San Antonio, Texas, January 6, in a grade crossing accident in which their automobile was struck by a train.—Dr. James C. Hawkins has been appointed health officer of Blackwell, succeeding Dr. Arlington R. Havens, resigned.

OREGON

Woman Appointed Deputy Health Officer.—Dr. Emma Maki Wickstrom, Portland, has been appointed deputy health officer of Multnomah County and has been assigned to duty with the court of domestic relations.

Hospital Item.—Owing to the need of more hospital space in Portland it is reported that the building at East Second and Multnomah Streets which was begun several years ago will be converted into a hospital of about 100 beds.

New Officers.—At the annual meeting of the Coos-Curry County Medical Society Dr. George Earl Low, Coquille, was elected president and Dr. Philip J. Keizer, North Bend, secretary.—The Portland Ophthalmological and Otolaryngological Society at its annual meeting elected the following officers: president, Dr. John F. Beaumont, Portland; vice presidents, Drs. Sherman E. Wright and Ralph A. Fenton, Portland, and secretary-treasurer, Dr. C. Gertrude

French, The Dalles.—At the annual meeting of the Central Willamette Medical Society which includes Linn, Benton and Lincoln counties, in Albany, December 5, Dr. Robert Bruce Miller, Lebanon, was elected president; Dr. Robert A. Jayne, Philomath, vice president; Dr. Robert L. Wood, Lebanon, secretary-treasurer.

PENNSYLVANIA

New Secretary-Editor.—At the meeting of the council of the Medical Society of the State of Pennsylvania, Dr. Frederick L. Van Sickle, Olyphant, was elected executive secretary and will be the editor of the *Pennsylvania Medical Journal* beginning with the July issue.

Epidemics.—The department of public health has instituted active measures for combating the threatened epidemic of influenza. A letter has been sent to each physician emphasizing the necessity of prompt report of all cases of influenza and pneumonia.—The health authorities of Erie have taken possession of the government dormitories at Fourth and Cascade Streets for use as an emergency hospital during the prevalence of scarlet fever.

Arrest of an "Association Doctor."—Alleged to be one of the smoothest "quacks" operating in this country, Dr. John Newhall Kirk was arrested, February 6, by chief county detective, Major S. O. Wynne, at the instance of Dr. Edward Martin, the state health commissioner. At the same time a fugitive warrant from Baltimore was served on the physician. Dr. Kirk was operating here as elsewhere under the name of "Association Doctors."

Philadelphia

Mary Scott Newbold Lecture.—Dr. Alonzo E. Taylor delivered the third of the Mary Scott Newbold lectures before the College of Physicians, February 6, on "Post War Conditions and Problems of Civic Organization in Europe."

New County Officers.—At the business meeting of the Philadelphia County Medical Society, held January 21, Dr. Herman B. Allyn was elected president; Dr. Benjamin F. Devitt, vice president; Dr. James Morton Boice, secretary; Dr. Charles Scott Miller, assistant secretary, and Dr. Edward A. Shumway, treasurer.

Packard Lecture.—Sir Arthur Newsholme, M.D., K.C.B., lecturer of public health administration, School of Hygiene and Public Health, Johns Hopkins University, delivered the annual Frederick A. Packard Lecture of the Philadelphia Pediatric Society in Thompson Hall, College of Physicians, February 10, on "Neo-Natal Infant Mortality."

Campaign for Woman's Medical College.—The campaign to raise \$250,000 as an extension fund for the Woman's Medical College of Pennsylvania is two thirds completed, as the result of an intensive drive from January 8 to January 20. On March 11, the seventieth anniversary of the founding of the college will be marked by special exercises, and the building will be open to the public. Five teams organized by women interested in social and civic welfare are working for a \$60,000 memorial fund as a tribute to the late Dr. Anna Howard Shaw.

VIRGINIA

Health Department Issues Bulletin.—The health department of Norfolk has initiated a monthly digest of its activities, in which current health problems are discussed.

Personal.—Dr. Ira H. Thomas, Aldie, has retired on account of ill health, after thirty-one years of practice.—Dr. Joseph E. Taylor has been appointed city coroner of Danville, succeeding Dr. Edward H. Miller, Jr., Danville, resigned.

Influenza.—Up to January 28, 1,001 cases of influenza had been reported in Richmond, with only four deaths. An appropriation of \$10,000 to combat influenza was asked from the finance committee of the Richmond city council, January 27, by health officer, Dr. Ernest C. Levy.

Society Reorganized.—The Southwest Virginia Medical Society was reorganized at a meeting held recently at Pulaski. Meetings of this organization had been suspended since 1916. The membership of the organization includes residents of the counties of Pulaski, Montgomery, Wythe, Smyth and Washington. Members of the profession from counties contiguous to those included and from the cities of Roanoke and Bristol are eligible as associate members.

Dr. Wilson R. Cushing, Dublin, was elected president; Dr. Joseph A. Noblin, East Radford, vice president; Dr. Alfred B. Greiner, Rural Retreat, secretary-treasurer.

WASHINGTON

Personal.—Dr. Ralph Hendricks, Spokane, was reelected health officer and secretary of the health board of Spokane, January 9.—Dr. James T. Mason, Seattle, has been appointed a member of the state board of health succeeding Dr. Henry H. McCarthy, Spokane, term expired.—Dr. Claude A. Lewis, Fairfield, has been elected mayor of Fairfield.—Dr. Richard Connell, North Yakima, has been appointed physician of Yakima County.—Dr. Charles C. Benedict, Enumclaw, has been appointed local surgeon for the Milwaukee railway system.

New Officers.—Lewis County Medical Society at its annual meeting, Dec. 8, 1919, elected Dr. James M. Sleicher, Chelalis, president; Dr. Frederick J. Hackney, Centralia, vice president, and Dr. Rush Banks, Centralia, secretary.—Whatcom County Medical Society at its annual meeting elected the following officers: president, Dr. Hays A. Compton, Bellingham; vice presidents, Drs. Albert M. Dawson, Bellingham, Charles S. Hood, Ferndale, and Carl C. Hills, Custer; secretary, Dr. Edward L. Brinson, Bellingham.—King County Medical Society at Seattle, January 8, elected as president, Dr. Homer D. Dudley; vice president, Dr. Herbert E. Coe, and secretary-treasurer, Dr. Howard J. Knott, all of Seattle.—Spokane County Medical Society at Spokane, January 8, chose as president, Dr. Arthur T. R. Cunningham; vice president, Dr. James D. Windell; secretary, Dr. Fred G. Sprowl; corresponding secretary, Dr. Edward S. Jennings, and treasurer, Dr. John H. R. Brodrecht, all of Spokane. By a vote of 65 to 30 the society denied the right of any member to engage in contract work.

WEST VIRGINIA

Personal.—At the fourth annual meeting of the West Virginia State Hospital Association, at Parkersburg, Dr. Joseph A. Guthrie, Huntington, was unanimously reelected president of the organization.

State Society Meeting.—At the meeting of the Little Kanawha and Ohio Valley Medical Society in Parkersburg, January 20, it was decided that the annual meeting of the West Virginia State Medical Association be held at Parkersburg, May 18 to 20.

WISCONSIN

Personal.—Prof. Henry C. Tracy, A.M., Ph.D., Milwaukee, has been appointed professor of anatomy in the University of Kansas, Lawrence and Rosedale.

Office Building for Physicians.—The Beloit Physicians and Surgeons Club, January 16, inaugurated a movement toward securing an office building, medical laboratory, and club room for physicians and dentists, to cost \$100,000. A committee consisting of Drs. Arthur C. Helm and Harry E. Burger was appointed to take charge of this matter. At this meeting, Dr. Arthur C. Helm was elected president, Dr. Virgil D. Crone, vice president, and Dr. Benjamin Fosse, secretary-treasurer.

CANADA

Personal.—Dr. James Third has resigned as professor of medicine in Queen's University, Kingston.—Dr. Harold P. Rogers, Toronto, has returned after four years' service in Mesopotamia and Syria.—Dr. Alfred K. Haywood, medical superintendent of the Montreal Hospital, has been appointed chairman of the committee of the Canadian National Council for Combating Venereal Disease. The council will interest physicians throughout Canada in the venereal disease problem and in plans of the Dominion government for its solution.—Dr. C. M. Sellery, Toronto, who served overseas in England and France, has been appointed a medical missionary in China, and will take up his work in August.—Dr. John Noble has been elected chairman of the Toronto Board of Construction.

GENERAL

Secretary Houston Requests Appropriation to Combat Plague.—Secretary of the Treasury Houston, in a communication to Congress, has requested supplemental appropriation in the sum of \$250,000 to enable the Public Health

Service to continue its work of controlling the outbreak of bubonic plague discovered in New Orleans last October. Since that time the Public Health Service has been spending \$50,000 monthly to effect suppression and control of this disease.

Appreciation of Work of Rockefeller Institute.—The Rockefeller Institute for Medical Research has received a letter from Surgeon-General William C. Braisted, U. S. Navy, testifying to his appreciation of the valuable aid rendered by the institute in connection with the War Demonstration Hospital, New York City. The assistance was not limited to the active period of the war, but continued after the signing of the armistice and indicated a high standard of efficiency in the institute both as to personnel and equipment.

Bequests and Donations.—The following bequests and donations have recently been announced:

Montefiore Home, Hebrew Orphan Asylum, Sanatorium for Hebrew Children, Blind Asylum of New York, Skin and Cancer Hospital, Servants for the Relief of Incurable Cancer, Beth Israel Hospital and Henry Street Nurses's Settlement, all in New York, each \$3,700 by the will of Emma Feuchtwenger.

Clarence Barker Memorial Hospital, Biltmore, N. C., a gift of \$50,000, from Mrs. Walker Rathbone, Bason.

Columbia University for the equipment of surgical research laboratories, an anonymous donation of \$6,000.

Grace Hospital, Toronto, \$500 by the will of the late Dr. Charles E. Treble, Toronto.

Boat Trip to Mississippi Valley Conference.—The Mississippi Valley Conference on Tuberculosis will be held at Duluth, Minn., September 2, 3 and 4. The Mississippi Valley Council has chartered the *S. S. North American*, which will leave Chicago, August 30, and returning will reach Chicago on the morning of September 7. The cost of the trip, including war tax, sleeping accommodations and breakfasts in Duluth, will be \$80. The only additional expense will be luncheons and dinners at Duluth during the three days of the meeting. Reservations may be made on application to Mr. James Minnick, superintendent of the Chicago Tuberculosis Institute, 8 South Dearborn Street, Chicago.

Recommendations Regarding Yale School of Medicine.—After a study of a survey and report as to the School of Medicine of Yale University, Dr. Fred T. Murphy presented his views to the committee on educational policy, which unanimously recommended the following minutes which have been adopted by the corporation:

1. That there is a clear and definite opportunity and obligation of the university to medical education.
2. That the Yale School of Medicine has a valuable nucleus of men and material and sound traditions, which rightly justify the development of an institution for medical education of the highest type.
3. That the corporation accept as a policy the development of a medical school of the highest type to include the pre-clinical and clinical years of instruction upon such principles of medical education as may be approved by the corporation, after conference with the medical faculty.
4. That every effort be made to obtain at the earliest possible date the necessary funds with which to expand and develop the buildings, the equipment, the instruction, and the research, and the service, in accordance with the best ideals of modern medical education—as an essential unit of our university plan for development.

A Modern Almanac.—The Miners' Safety and Health Almanac for 1920 (Miners' Circular 26), compiled by the U. S. Public Health Service, has just been issued by the Bureau of Mines of the Department of the Interior. This is the second year that the Bureau of Mines has issued this calendar. In addition to the usual information, it contains instructions on the prevention of various diseases and accidents, and shows the miner how he can reduce the risks of his occupation. He is told that sickness means loss of time and money, and that it may mean reduced efficiency or permanent incapacity. There are special articles on influenza and pneumonia, miners' consumption, miners' nystagmus, contagious diseases among children, prevention of coal dust explosions, malaria, flies, typhoid fever, pure drinking water, school inspection, adenoids, "patent medicines," venereal diseases, sanitary housing, dust and ventilation in mines, mine gases and sanitary privies. The reader is advised that "patent medicines" are unnecessary, useless and a waste of money; that frequent and routine physical examinations are a good thing; that clean drinking water is just as essential as clean food, clean air or clean homes. The booklet is copiously illustrated and well printed. Thus the almanac, formerly a medium for the dissemination of misinformation regarding "patent medicines," has become also a worthy agency in providing accurate information on the prevention of accidents and disease.

Botulism from Eating Ripe Olives

Newspapers of February 8 reported deaths following the eating of ripe olives, this time in Memphis, Tenn. Previous deaths occurred in Canton, Ohio, Detroit and New York, and have been reported in *THE JOURNAL*. *THE JOURNAL* asked Dr. B. W. Fontaine, associate professor of medicine in the Memphis Medical College, for an account of these cases. He telegraphs the following report:

"Thursday afternoon, February 5, at a luncheon given by a weekly social club at the home of Mrs. M. V., there were three guests, the hostess and a 10 year old boy. Later on the husband of the hostess and the husband of another guest joined the party, making seven in all, each person partaking of the refreshments. The first illness, the case of Mrs. H., began ten to twelve hours later, death occurring some time Friday morning, Mrs. H. being found dead in bed at 8:30 a. m. The next death was the hostess, Mrs. V. on Saturday morning at 5 a. m.; the third death, another woman, Saturday afternoon; the fourth, the husband of Mrs. V., Saturday afternoon; the fifth, another guest, Sunday morning; the sixth, the 10 year old boy, Sunday afternoon. The last guest is now seriously ill and is not expected to survive, making six deaths and the seventh case probably fatal. The initial symptoms were referred chiefly to the throat and eyes; the most noticeable symptoms were sensations of constriction about the throat and inability to swallow. Double vision soon occurred in all the cases and was finally followed by blindness. No gastro-intestinal symptoms occurred, except in the case of the boy, who was slightly nauseated. In all of the cases respiration was extremely labored and the pulse was very fast. Prostration was extreme, the temperature was subnormal. All of the patients were entirely conscious to the time of death. Necropsies were not permitted.

"Investigation by the health department discloses the fact that the menu at the luncheon consisted mainly of ham sandwiches, lettuce salad and whole ripe olives. No alcoholic liquors were drunk. Investigation of the jar from which the olives were taken showed that it had contained about fifty olives. Nine olives were found in a dish on the table. It is estimated that each guest must have eaten from four to six olives. The olives were of ripe variety, packed by the cold process in brine and were in a glass jar, having a tin top with a rubber seal under the cap, bearing the number 3X3602, put on by a rubber stamp. Just below the top, around the neck was a paper band, bearing the word 'Jumbo.' On the main label, just below the band were the words: 'Supreme Curtis Olives Corporation, Los Angeles, U. S. A.' In the middle of the label, in large type were the words: 'Curtis quality, 16 ounces net' and a picture of three or four large black olives. The olives found in a dish on the table had a very objectionable and pronounced foul odor. In the kitchen on the drain-board was found the empty jar containing about twelve drops of the brine, which also gave the same disagreeable odor. The olives were obtained from a store in Memphis of which the principal business is buying and selling salvaged merchandise. The olives were transported by the firm from one of their branch houses in Montgomery, Ala. Investigation reveals that many cases of the same brand of olives were sold by this house. Ten or twelve jars were still unsold, which had finally reached Memphis. Examination of the olives by the city chemist and bacteriologist showed them to be soft and black and to have been preserved in brine. The contents of the other jars, similar to the jar in question, and put up by the same company, bearing the same label and packing number were without odor and wholesome so far as gross appearance was concerned.

"Bacteriological studies in the limited time, necessarily being hurried and incomplete, have revealed an anaerobic motile bacillus, gram positive, morphologically and culturally identical with *Bacillus botulinus*. Injection of the original brine in minute quantity, about one hundredth of a cubic centimeter subcutaneously, into a guinea-pig resulted in death in nine hours, with symptoms of labored respiration, ruffling of the hair and dilatation of the pupils, the four feet outstretched."

FOREIGN

Mortality of Lisbon.—It is stated from Lisbon that the mortality for the year 1918 exceeded that of any previous year. The number of deaths was 17,071 or 5,543 more than the previous year. The number of deaths caused by the influenza was 3,692; seven deaths were due to typhus fever. No mention is made of the death rate.

Prize for Orthopedic Research.—The Rizzoli Orthopedic Institute at Bologna, Italy, announces that the competing articles or appliances sent in to compete for the Umberto I prize of 3,500 lire must be in the hands of the president of the institute before Dec. 31, 1920. The prize is awarded for the best work or invention in the field of orthopedics and competition is open to physicians of all countries. The provisions for the competition will be sent on demand. Address the President, Instituto ortopedico Rizzoli, Bologna, Italy.

Surgeons Form Association.—Surgeons representing the surgical staffs of all the great teaching hospitals of Great Britain assembled in London, January 8, under the chairmanship of Sir Rickman J. Godlee, London, and organized the "Association of Surgeons of Great Britain and Ireland," thus following the precedent set by members of the medical staffs several years ago. The association will be representative of British surgeons, will represent British interests at international surgical congresses and will foster scientific meetings of surgeons from time to time at various centers. Sir John Bland-Sutton, London, was elected president of the association.

Physiology at the Paris Aviation Show.—The sixth Salon de l'aéronautique, which was held at Paris the last week of December, was a striking demonstration of the progress on the medical side of aviation since the last Salon in 1913. Two sections were devoted to physiology; one more especially civilian and aeronautical, the other essentially military and devoted to the study of aviation in general. It had six subsections showing the general examination of the candidate for aviation, the examination of the nervous system and the senses, a full display being made of the instruments and apparatus used in the various tests. Among the exhibits in the subsection for examination of circulation and respiration were much enlarged photographs of the blood pressure and pulse curves showing the effect of fatigue on athletes and aviators. The various devices for studying and overcoming the effect of rarefaction of the air included Dr. Barsaux's automatic oxygen inhaler. This supplies 35 liters an hour per person, and automatically increases this supply progressively up to 150 liters at 8,000 feet. The Salon exhibited further data showing that there are now fourteen companies of aerial navigation in France and that between May and November, 1919, they had a record of 1,079 voyages, covering 442,180 kilometers and carrying 1,356 passengers, without the loss of a single person. The organizers of this physiology exhibit were Dr. Crouzon, a leader in the medical features of aviation, and Dr. M. de Fossey, who is styled by the *Journal de médecine de Bordeaux*, in its report of the exposition, "the *cheville ouvrière* of this remarkable medical exposition."

LATIN AMERICA

Quarantine Against New Orleans Lifted.—It is stated from El Salvador that the quarantine affecting all ships from New Orleans has been lifted.

Dr. Lefás Goes to Paraguay.—Dr. Emmanuel Lefás, of Paris, has accepted the chair of pathology in the school of medicine of Paraguay, and will arrive in Paraguay about the middle of February.

Personal.—Dr. B. K. Ashford, Col., M. C., U. S. Army, of Porto Rico, has been visiting in Cuba. Sessions in his honor have been held by the Association of the Medical Press of Cuba and the Society of Clinical Studies.

New Nurses' School at Nicaragua.—Dr. Luis Sequeira, of Bluefields, Nicaragua, is about to establish a school for nurses in that city. There will be only twelve pupils admitted at first and teaching will be free of charge.

Election of Officers.—The Sociedade Brasileira de Neurologia, Psiquiatria e Medicina Legal recently elected its officers for the new year: president, Prof. J. Moreira; vice president, Prof. Abreu Fialho, and secretary-general, Dr. M. Pinheiro.

Medical Students in Cuba.—The number of students enrolled in the School of Medicine and Pharmacy of the University of Havana during the year 1919-1920 is 1,560,

distributed as follows: medicine, 1,037; pharmacy, 312; dentistry, 170; veterinary 41.

Deaths in the Profession.—Dr. Horacio Rodríguez, aged 36, was the first victim in the profession to succumb to typhus during the prevailing epidemic of typhus at Valparaíso, Chile. He was connected with the Asistencia Pública, in direct charge of typhus patients, and leaves a widow and two children.

Health Certificates for Colombian Travelers.—The office of public health of Colombia has issued regulations decreeing that passengers traveling on outbound ships must be provided with a physician's certificate to the effect that they are not suffering from any contagious disease.

Medical Society of Caracas.—At a recent meeting held by the medical society of Caracas the following officers were elected: president, Dr. J. Sanabria Bruzual; vice president, Dr. B. Perdomo Hurtado; treasurer, Dr. Andrés Pietri; secretary, Dr. Jiménez Rivero; librarian, Dr. Salvador Quintero, and editor of the journal, Dr. Salvador Córdova.

New Leprosarium.—A model leper hospital, equipped to accommodate several hundred patients of both sexes and all ages, is being built some distance outside the city of São Paulo. Well appointed laboratories will be established within the hospital to conduct research on the disease. The leper colony will have all the facilities pertaining to an independent community, including police and fire departments, light and water services, cemetery, and postal and telegraph offices.

Government Services

Major Phelan Receives Special Appointment

Major Henry du R. Phelan, U. S. Army, has been appointed representative of the Historical Branch, General Staff, U. S. Army, as liaison officer between the French and American historical sections and attached to the American Embassy, Paris.

What the Government is Doing for the Disabled in War

According to the Federal Board for Vocational Training the status of those who were disabled in the world war is as follows: in tuberculosis sanatoriums, 46,000; in hospitals for treatment, 18,000; in asylums, 19,000; taking vocational training, 27,912, and 5,000 refused government training, making a total of 115,000. In addition there are about 200,000 men who are only slightly disabled.

A Lapel Button for Members of the Officers Reserve Corps

A circular, issued by the War Department, January 17, states that a lapel button for members of the Officers' Reserve Corps has been approved, optional for wear on civilian clothes only. The button is of gold, one-half inch in diameter with the face enameled in the color of the facing of the arm or corps of the service. It has the letters U. S. R. in the center. The button is to be issued by the Quartermaster's Department.

Influenza in Naval Stations

The *Naval Medical Bulletin*, issued to medical officers of the United States Navy, reports mild epidemics of influenza at the Great Lakes Station, and also in the Marine Barracks at Quantico, Va. The type of the disease is reported to be the same as last year, but not so virulent. A few cases have occurred at Gulfport, Miss., and at Charleston, S. C. Special attention is invited to the importance of placing the sick under treatment at once and modifying the routine, if necessary, so that the well may avoid unnecessarily close contact with each other, overexposure to cold and wet and fatigue.

Medical Corps Section of Army Relief

A campaign for a new membership in the Medical Corps Section of the Army Relief Society is under way. The object of the society is the relief and education of widows and orphans of enlisted men of the regular army and it is requested that all members of the Medical Corps or some member of their family become members of the organization.

The dues are \$1 a year. Application may be made to Mrs. Merritte W. Ireland, the Wyoming, Washington, D. C., or Mrs. M. A. Delaney, the Northumberland, Washington, D. C.

Government Needs Physicians

The United States Civil Service Commission announces that a number of physicians are needed in the Indian Service, the United States Public Health Service, the Coast and Geodetic Survey and the Panama Canal Service. Both men and women are eligible, salaries of \$200 a month are offered with prospective promotion and higher pay. Information and application blanks will be obtained from the commission at Washington, D. C., or the civil service board at any of the principal cities in the United States.

Care of Discharged Soldiers

Over 10,000 discharged, disabled soldiers were undergoing treatment in Public Health Service hospitals, or under contract with private hospitals, during January, according to tabulated returns. The number of applicants for treatment under the war risk act is constantly increasing, as the men become familiar with the fact that they are entitled to free treatment. The United States Public Health Service is now operating forty-three hospitals for the care of discharged, disabled soldiers, sailors, marines and war nurses, who are beneficiaries of the War Risk Insurance Act.

Army Turns Over Hospital Equipment to Fight Epidemic

The Secretary of War has been permitted to turn over to the State of Kansas emergency hospital equipment of the army to check the present influenza epidemic in that state. The Senate moved with unusual speed on this resolution, which was passed the day it was introduced. Senator Curtis and Governor Allen of Kansas asserted that the Topeka High School has been converted into a temporary hospital and that 150 influenza patients are being treated there. Similar conditions exist in many of the Kansas state institutions. This is the first instance where state government officials have asked for emergency relief from the War Department.

Medical Veterans of the World War

Col. Frederick F. Russell, M. C., U. S. Army, secretary of the Medical Veterans of the World War, states that during January, 143 new members joined, making a total membership of 2,542, divided as follows:

Medical Corps, U. S. Army.....	1,116
Medical Corps, U. S. Navy.....	46
Medical Corps, U. S. P. H. S.....	59
Contract Surgeons, U. S. Army.....	85
Acting Assistant Surgeons, U. S. P. H. S.....	44
Members Local Board	512
Members Examiner, Local Board.....	174
Members Medical Advisory Board	506

Army Hospitals in Operation

On January 9, fourteen army hospitals were in operation with 14,370 bed patients, distributed as follows:

U. S. General Hospital No. 28, Fort Sheridan, 2,800; Walter Reed General Hospital, Takoma Park, D. C., 1,675; U. S. General Hospital No. 2, Fort McHenry, Md., 1,447; Letterman General Hospital, Presidio, San Francisco, 1,245; U. S. General Hospital No. 41, Fox Hills, N. Y., 1,518; U. S. General Hospital No. 21, Denver, Colo., 1,088; U. S. General Hospital No. 6, Fort McPherson, Ga., 914; U. S. General Hospital No. 19, Oteen, N. C., 887; U. S. General Hospital, Fort Bayard, N. M., 698; Base Hospital, Fort Sam Houston, Texas, 713; U. S. General Hospital No. 31, Carlisle, Pa., 560. U. S. General Hospital No. 43, Hampton, Va., 319; U. S. General Hospital No. 20, Whipple Barracks, Ariz., 351; Army and Navy General Hospital, Hot Springs, Ark., 155.

U. S. General Hospital No. 20, Whipple Barracks, Ariz., and No. 43, Hampton, Va., will be closed February 15, and such patients as require further treatment will be transferred to other hospitals.

Neurosurgical Unit in Richmond

It is announced that Richmond, Va., has been selected as the place of the fourth district, embracing Virginia, Maryland, District of Columbia and West Virginia, in which a neurosurgical unit is to be established to treat and care for veterans of the world war suffering from injuries of

the brain, spinal cord and nerves. Arrangements have been made to give treatments at Memorial Hospital, Richmond, and the Retreat for the Sick. The personnel of the unit includes Drs. Claude C. Coleman, Paul V. Anderson and John H. Baird, all of Richmond; Dr. William F. Mercer, Richmond, will have charge of all cases of diseases of eye, ear, nose and throat; Asst. Surg. Clavel T. Wilfong, U. S. P. H. S., will treat all office cases discharged from hospitals in Richmond, and all cases sent through hospitals in Richmond will be under the care of Dr. William R. Jones, Richmond.

Legislation for Care of Mental and Nervous Diseases in Men of Army and Navy

A bill has been introduced by Congressman Edward J. King, of Illinois, "to provide for the segregation and care of men in the Army and Navy afflicted with mental and nervous diseases." The bill provides for the appointment of a Board of Sanitarium Commissioners to be composed of five medical officers in the Army and Navy. The board is authorized to select and purchase a site and erect a hospital thereon for the care and treatment of soldiers and sailors afflicted with mental or nervous diseases. At present men suffering from these disorders are confined at the Saint Elizabeth Insane Hospital in the District of Columbia and other similar government institutions for the insane. The purpose of this legislation is to care for these men at a separate institution where their maladies may be given special treatment and where the sufferers will not be placed in the distressful environment of an insane hospital, as is now the practice. It is understood that the bill was introduced at the request of the American Legion. Senator McKellar, of Tennessee, has introduced the same bill in the Senate.

The Discharged Soldier's Problem

The United States Public Health Service is making wide advertisement of the channels through which a discharged soldier may receive treatment at the hands of the Public Health Service to which he is entitled as beneficiary of the Bureau of War Risk Insurance. He may obtain treatment through: 1. Application to the examiner of the Public Health Service in the soldier's locality on presentation of an honorable discharge as evidence of his right to such treatment. The examiner will examine him, treat him, and make provision for necessary hospital care and will also instruct him in making out the necessary forms to be forwarded to the Bureau of War Risk Insurance and to the Federal Board for Vocational Education. 2. Application to the Bureau of War Risk Insurance by letter, requesting examination and treatment. The bureau notifies the district supervisor who in turn notifies the patient to report to an examiner, giving the examiner's name and address and issuing transportation for travel when necessary. 3. Application to the American Red Cross, the American Legion, county or state board of health, or to welfare organizations who will either direct him to the nearest examiner of the service or will take up his case with the district supervisor.

Health Conditions of the Army

For the week ending January 30 the admission rate for disease was considerably greater than for the previous week, because of the rise of the influenza epidemic. Influenza patients are being kept in the hospital until all symptoms of the disease have disappeared and the possibility of pneumonia following has been guarded against. This period is at least ten days after the temperature has become normal. For this reason the noneffective rate of the Army is very high. The increase in the number of new cases of influenza concerns not only the home forces, but also the American forces in Germany and in Siberia.

It is noted that the present epidemic of influenza in the United States is not as severe in type as that which occurred in 1918. For comparison, the figures from Camp Grant, Ill., are cited: This camp had a most pronounced epidemic, both in 1918 and in the present year. At the time of highest incidence in 1918, one person out of every 4.28 contracted influenza, whereas in the present epidemic, one person out of 11.4 contracted the disease. In 1918 one of each 16.86 contracted pneumonia; this year one of 141.61. In the 1918 epidemic, one person of 47.62 died; this year, one of 399.01 died.

Foreign Correspondence

PARIS

Jan. 8, 1920.

The Camphor Scarcity

The embargo placed on camphor by the Japanese government, which seek to make Japan the sole source of supply for the crude gum, has given impetus to the manufacture of synthetic camphor. This scarcity of crude camphor, which is reaching an acute stage and threatens to stop the preparation of pure gum in American laboratories, has caused manufacturers in the United States to make an effort to establish a laboratory for the manufacture of synthetic camphor which would produce sufficient quantities of camphor to supply the needs of their industries. Also at Segni, Italy, a laboratory for the manufacture of synthetic camphor has recently been established, and a similar enterprise is about to be launched in France.

Since oil of turpentine can be secured very cheaply by the distillation of resinous woods, it is easy to produce synthetic camphor at a reasonable price. In all cases in which a hydrocarbon is to be used in the manufacture of synthetic camphor, oil of turpentine proves the most available. It happens that France is a large producer of oil of turpentine, and it is possible to increase still further our pine forests—the seaside pine in the western part of France and the Aleppo pine in the Southeast and in Algeria. The Comité interministériel des plantes médicinales, in collaboration with the Office des matières premières, is engaged at the present time in collecting information on the subject of the manufacture of synthetic camphor, and in the near future it proposes to call a meeting of technicians and manufacturers with a view to taking immediately the necessary steps to assure to France, as soon as possible, its normal supply.

But it is to be hoped that the natural camphor may keep its place alongside the synthetic product, the manufacture of which is furthered by the existing circumstances. In this connection it may be well to mention that the camphor laurel grows naturally in some of our colonies, notably in Tonkin (Indo-China), and also in Algeria, where the camphor produced from the leaves is identical with that produced from the same kind of trees in Japan.

Reorganization of the Municipal Chemical Laboratory

The municipal council of Paris is considering the interesting proposition of reorganizing the municipal chemical laboratory. The purpose of this laboratory when originally founded in 1878 was to protect the public against fraudulent adulteration of wines, but the principal function of the laboratory at this time would be the suppression of frauds in general. The plan is to make of it a center of scientific study.

Opposition to Paid Courses of Medical Instruction

Contrary to the current practice in Germany, where university professors often give paid courses of instruction, this custom has not been accepted in this country and has been at times severely criticized; for example, the paid graduate medical course organized by Dr. de Lapersonne, professor of clinical ophthalmology of the Faculté de médecine de Paris, has recently been quite severely criticized by "A Reader" in the *Journal des Praticiens*:

"I admit that an eminent physician who is known by his writings, his researches, or his skill in teaching, and being duly authorized, may announce paid courses of instruction. The poor man who has no private fortune, as is so often the case, cannot spend his time without compensation. He may not receive the 15,000 francs of a regular professor, which he needs to support himself and family; but that a regular professor of the Faculté de médecine de Paris should require fees of his students surpasses all belief, and we cannot protest too vigorously against such tendencies, which threaten to become general."

Exhibit of French Pharmaceutical Products in Canada

M. Beaubien, Canadian senator, recently paid a visit to the Comité Français des Expositions à l'étranger, and during the course of his visit suggested a plan by which French interests in Canada might be served, namely, by an exhibit of French products. But, as the distances between the cities of Canada are very great, he suggested that the exhibit be put on wheels, explaining that, in a train of eight coaches, samples of all French products, and more particularly, pharmaceutical products, might be exhibited. Two coaches might be placed at the disposal of the representatives of the

exhibitors. This traveling exhibit may be taken through all of Canada, remaining from two days to a week in various cities, according to their importance. Moving pictures would accompany the exhibit.

Preferential Milk Tickets for Prospective Mothers

At the suggestion of Professor Pinard, the prefect of the department of the Seine has sent out instructions to the maires of twenty arrondissements of Paris, relative to supplying prospective mothers with preferential milk tickets. These tickets will be issued on presentation of a certificate, signed by an obstetric nurse of any of the Paris hospitals and setting forth the necessity of a milk diet, the quantity of milk needed daily, and the duration of the regimen.

Tuberculosis in the Regions of France Evacuated by the Germans

Dr. Calmette, assistant director of the Institut Pasteur de Paris, who, in his capacity of director of the Institut Pasteur de Lille, has been conducting an inquiry into the state of the public health of Lille during the years of German occupation, has recently communicated the sad results of his investigation. He thinks the ravages of tuberculosis, both glandular and pulmonary, in the countries of the North were due to the restrictive diet to which the children were subjected during the period of occupation. Tuberculous children who have been sent out into the country or to the seaside have improved remarkably. Calmette recommends that such therapeutic treatment be continued and that all schoolchildren be examined carefully from time to time. He also advises the establishment of antituberculosis dispensaries for adults. Calmette adds that the appeals of Germans in favor of German children who are suffering in great number must not allow us to forget the lamentable consequences of the inhuman conduct the Germans showed, during the long period of occupation, toward our own children.

History of Medicine and Pharmacy

At the last meeting of the Société française d'histoire de la médecine it was decided to hold a congress of the history of medicine and pharmacy at Antwerp, Aug. 7-12, 1920, coincident with the kermess and the celebration of the Olympian games. The principal subjects thus far selected for discussion are: Medical iconography and epigraphy; a chapter from the history of welfare movements in various countries; medical bibliography; monastic and collegial medicine in Belgium, and the mobiliary equipment of apothecaries.

LONDON

Jan. 22, 1920.

The Prevention of Influenza

In view of the possibility of another epidemic of influenza this winter, the ministry of health has been studying the measures to limit its incidence and mortality, and has revised a memorandum previously issued on the subject. The difficulty of securing a continuous record of true influenza has made it impossible to forecast with any confidence the arrival of the next wave. We do not yet know the nature of the virus, and the laboratory has not yet furnished a specific form of treatment or prevention. Pfeiffer's bacillus cannot be regarded as the essential causative organism, but for present purposes is looked on as an important secondary or coincident agent responsible for many of the fatal complications. As infection is conveyed by coughing, sneezing and even loud talking, overcrowding should be avoided. The evidence collected by the ministry shows that acute and temporary overcrowding in trains, cars and places of entertainment is more important than overcrowding in the home. Personal protection includes good ventilation, good food, gargling the throat and douching the nose with 1:5,000 potassium permanganate. Face masks are advised for those attending the sick, but not for the public. As regards vaccines, it is laid down that since we are uncertain of the primary cause, no form of inoculation can be guaranteed to lessen materially the incidence of the disease. Vaccines may, however, lessen the dangers of complications. Drugs are of little avail. When attacked, the patient should take to bed. A standard polyvalent vaccine prepared from strains of Pfeiffer's bacillus, pneumococcus and streptococcus appears to reduce materially the liability to complications and the risk of death. Therefore, it should not be neglected. The bacteriologists of the Medical Research Committee believe that in the previous government vaccine the proportion of Pfeiffer's bacillus was too small, and that better results might follow the use of a vaccine in which this microbe forms the dominant constituent and of which a much larger

dose is given. The ministry has accordingly made arrangements for the preparation of a considerable quantity of prophylactic vaccine made from the new formula. This will be issued in bottles of 25 c.c. each to health officers for distribution on demand, and free of charge to physicians, who will be expected not to charge their patients for the vaccine used. It is further proposed to arrange for the preparation of vaccines in selected localities from the strains of microbes associated with local cases of influenza. The prevention by quarantine of the importation from abroad is regarded as impracticable. Health authorities should distribute information to the public by leaflets, posters, notices and lectures. In Sheffield during the last epidemic a "pool" of unattached physicians was formed with good results, their services being placed at the disposal of physicians as required. In the larger areas, part of such a pool might be formed from the health authorities' own staffs.

Increased Remuneration for Panel Physicians

The increase in the cost of living in this country since the war has amounted to more than 100 per cent. and has led to demands for increased wages in practically every calling. As reported in THE JOURNAL, physicians have increased their fees by 50 per cent. The panel physicians demanded from the government an increase of the capitation fee from \$2 to \$3.25. A deputation of the Insurance Acts Committee of the British Medical Association was received on the subject by the minister of health, Dr. Addison. He offered to seek the authority of Parliament to pay an increased fee of \$2.75, with a mileage fund of \$1,500,000 for rural physicians. The deputation said that it would feel bound to its constituents not to accept this, but it was empowered to ask for arbitration, which it did. After discussion, the minister announced that the government would accede to this request. The arbitrators' award will operate from April 1, the government agreeing to pay in the meantime a capitation fee of \$2.75. The government reserved its freedom to institute at a subsequent date any inquiry that might be thought desirable, in the light of the award and the cost of its working, into the question whether service as good or better could be secured with the same or less expenditure of money, under some other system.

As a result, no doubt, of this increase the government has decided to increase by 6 cents the weekly contributions paid, of which 4 cents will fall on the employer and 2 cents on the employed person. The rate of sickness benefit is to be increased to \$3.75 a week in the case of men and \$3 in the case of women. Maternity benefit is to be increased from \$7.50 to \$10. Sanatorium benefit is to be removed from the acts, the treatment (other than domiciliary) of tuberculosis, among both the insured and the uninsured, being recognized as falling within the province of the local authorities. A state system of medical referees is to be established, toward which the societies will make a small contribution by way of payment for each case referred.

New Hospital for Tropical Diseases in London

The study of tropical diseases in London originated in the Seamen's Hospital at Greenwich, where sailors suffering from tropical diseases are received from all parts of the world. A branch hospital for tropical diseases, containing thirty beds, was established in the East End of London, at the Albert Docks. Among the patients are Europeans of all nations, Asiatics, Africans, West Indians and natives of British and other colonies. A laboratory was built in connection with the hospital, and more than 2,000 physicians were trained in the study of tropical diseases. But the accommodation became inadequate. In the "University Quarter" of London, at Endsleigh Gardens, a hospital established for officers during the war was therefore secured. In this much more central and accessible position the several departments of the London School of Tropical Medicine will be housed. The riverside wards will be retained for patients who, for various reasons, should not be taken to the new hospital. But hundreds of cases of tropical disease in the chronic stage will be available for study in the latter.

Death of Sir Thomas Frazer

Sir Thomas Frazer, M.D., F.R.S., emeritus professor of materia medica and clinical medicine in the University of Edinburgh, one of the most distinguished investigators of his time, who did much in laying the foundations of modern pharmacology and therapeutics, has passed away at the age of 79. Born in Calcutta of Scotch parentage, he was educated in Edinburgh. On graduation he obtained a gold medal for his thesis on the action and uses of Calabar bean

(*Physostigma venenosum*). He was appointed assistant to the celebrated Sir Robert Christison in the materia medica department of the University of Edinburgh and, like him, he became a great authority on poisons. Among his earlier papers, which have become classical, were "The Antagonism Between the Actions of Physostigma and Atropia," and "The Kombé Arrow Poison" (*Strophanthus hispidus*). On the resignation of Sir Robert Christison in 1877, he was appointed professor of materia medica in the University of Edinburgh. He was also appointed physician to the Royal Infirmary, and as a clinician attained the first rank. In conjunction with Prof. Crum Brown, he made an important investigation into the chemical constitution and physiologic action of poisons, for which the Royal Society of Edinburgh awarded them a prize. It was mainly through his investigations that strophanthus came into use in therapeutics. Some of his best known work was on snake poison. His original observations, made individually or in association with Major Elliot, continued the investigations of Lauder Brunton and Joseph Fayrer on cobra poisoning. Much of our knowledge of the effect on cardiac action of cobra venom is due to his work. When, in 1894, Calmette published his researches into the immunity against snake venom that followed repeated injections of small doses of rattlesnake poison, Frazer, who had already gone over the same ground, gave valuable confirmation to Calmette's work, as well as further points as to the nature of the protective action of the anti-toxic serum. Other original work of the first importance emanating from him was on the salicyl compounds in acute rheumatism, the nitrites in the dyspnea of asthma and bronchitis, bone marrow in pernicious anemia, opium, morphin and codein in diabetes, and potassium bichromate in gastric affections. He was one of the first, if not the first, to teach the expression of dosage in terms of body weight and to analyze pharmacologic action into its component parts. All his work was characterized by accuracy and thoroughness. In 1894 he delivered the graduation address at the University of Edinburgh in which he uttered a warning that has been needed ever since and is still needed: He pointed out that recent advances in organic chemistry had led to the discovery of a host of complex substances with possible pharmacologic actions which afforded a great opportunity to charlatanism. He considered that physicians as well as commercial chemists were advocating for all sorts of disease the employment of drugs to which no proper trial could be given. The determination of the physiologic action of any substance might require at least six months' study by a skilled investigator. Like many of the leaders of the profession, he suffered badly in the war. He lost one son on submarine service, and another, as well as a son-in-law, in France. One of his sons is a well-known New York physician and is at present with the American army on the Rhine.

Marriages

DWIGHT CHASE SIGWORTH, Lieut., M. C., U. S. Army, Stanton, Neb., on duty at Alcatraz Barracks, Calif., to Miss Irene L. Cratty of Elgin, Neb., at Long Beach, Calif., February 14.

HENRY BLOODGETT MCINRYRE, Lieut.-Col., M. C., U. S. Army, New York City, on duty at Fort McHenry, to Miss Gladys E. Miller at Mamaroneck, N. Y., January 31.

EDWARD FRANKLIN YOUNGER, Lynchburg, Va., to Miss Bessie Mason of Campbell County, Va., in Washington, D. C., December 15.

THOMAS WISTER EDMUNDS, Danville, Va., to Mrs. Sallie Davis Penn of Reidsville, N. C., in Baltimore, December 20.

CLARENCE WALTER ADAMS, Visalia, Calif., to Miss Marie Genevieve Rogers of Spokane, Wash., December 15.

CHARLES LYNDON OUTLAND, Tarboro, N. C., to Miss Alice Louise Sadler of Richmond, January 21.

HARRY EMMICK LEE, Detroit, to Miss Jamie Florence Greenlee of Studley, Va., December 31.

DR. BENJAMIN F. DAVIS, Chicago, to Miss Marie Lucille Brickson, Stoughton, Wis., February 7.

CLARENDON RUTHERFORD to Miss Ella Williams McCauley, both of Chicago, February 4.

HARRY S. BERMAN, Detroit, to Miss Caroline Block of Richmond, December 23.

MILO KIRK MILLER to Miss Freda Anita Stracke, both of Chicago, January 10.

Deaths

Elmer Ernest Southard ☉ Cambridge, Mass.; Harvard University Medical School, 1901; aged 43; chairman of the Section on Nervous and Mental Diseases of the American Medical Association; died in New York City, February 9, after two days' illness from pneumonia. He was born in Boston and was graduated in arts and in medicine by Harvard University. He later studied at Senckenberg Institute, Frankfurt on the Main, and in the University of Heidelberg. On his return to the United States he became instructor in neuropathology in his alma mater; later assistant professor, and since 1909 Bullard professor of neuropathology. He was assistant visiting pathologist to the Boston City Hospital in 1904 and 1905; assistant physician and pathologist of the Danvers (Mass.) State Hospital from 1906 to 1909; pathologist of the Massachusetts Commission on Mental Diseases in 1909, and director of the Boston Psychopathic Hospital since 1912. He was a director of the Eugenic Record Office, Cold Spring Harbor, N. Y.; a member of the board of scientific directors of the Bedford Hills Laboratory, Bureau of Social Hygiene, New York; a director of the Massachusetts State Psychiatric Institute, and member of the editorial board of the *Archives of Neurology and Psychiatry*. During the war Dr. Southard was director of the U. S. Army Neuropsychiatric Training School, Boston unit, and major in the Chemical Warfare Service. He had devoted particular attention to the pathology of the brain and nervous system in dementia praecox, and published important original investigations on this subject. He also advanced an original classification of the psychoses which had aroused considerable interest. His most recent publication is a large volume on shell-shock and other neuropsychiatric problems, an epitome of war neurology. In his death the medical profession loses a specialist of broad vision, a clinician who was preeminently a neuropathologist with broad training and insight into the problems of general medicine.

Sir James Alexander Grant, K.C.M.G., one of the most distinguished physicians of Canada; died, February 6, at his home in Ottawa, aged 89. He was born in Inverness, Scotland, Aug. 11, 1831, was graduated from McGill University in 1854, and obtained the degrees of M.R.C.P., M.R.C.S. (Eng.) and in 1864 the F.R.C.S. (Edin.). A year before his graduation he passed the examination of the College of Physicians and Surgeons of Quebec, and after graduation located in Ottawa. He was a member of the Provincial Medical Council from 1866 to 1869, and its president in 1868-1869. He was a member of parliament from the council of Russell in 1867, and later from Ottawa City, serving altogether fourteen years. He was made president of the Canada Medical Association in 1874; president of the Royal Society of Canada in 1903; vice president of the International Medical Congress in 1887; was president of the General Hospital, Ottawa, and chief of staff for twenty-five years. In 1887 he was made Knight Commander of Sts. Michael and George, and in 1910 was given the freedom of the city of Inverness. He was an active and honorary member of many scientific societies, and of late years had devoted much of his time to geology.

John Abner Mead, Rutland, Vt.; College of Physicians and Surgeons in the City of New York, 1868; aged 78; a veteran of the Civil War; for several years assistant physician at the Insane Hospital, Flatbush, L. I.; surgeon-general of Vermont in 1878 and 1879; first mayor of Rutland; a member of the state senate in 1892 and of the house of representatives in 1906; lieutenant-governor of Vermont in 1908-1909, and governor from 1910 to 1912; died, January 12, from pleuropneumonia.

Emil Augustus Herig. Saginaw, Mich.; University of Berlin, Germany, 1866; aged 79; formerly president of the board of health, health officer and city physician of Saginaw; coroner of Saginaw County; chief of staff of the Bliss Hospital, Saginaw, and attending physician to the Saginaw General Hospital; once president of the Saginaw Valley Medical College; a veteran of the war between Prussia and Austria in 1866; died, January 21.

Robert William Carter, Montclair, N. J.; College of Physicians and Surgeons in the City of New York, 1904; aged 44; who went to the Philippines as a missionary of the Presbyterian Board at Dumaguete Maasin and Albay; was invalided

home, ill with tropical sprue in 1913; returned to Dumaguete in 1917, and two years later was transferred home; died in the Presbyterian Hospital, New York City, November 21, from sprue.

Julius Stimpson Clark, Melrose, Mass.; Georgetown University, Washington, D. C., 1869; aged 81; a veteran of the Civil War; a member of the Massachusetts Medical Society, and for seven years president of the Middlesex District Medical Society; from 1870 to 1878 health officer, city physician and police surgeon of New Orleans; president of the medical board of the Melrose Hospital; died, January 20, from pneumonia.

James Jefferson Johnson ☉ Braggs, Okla.; Memphis (Tenn.) Hospital Medical College, 1897; aged 43; a specialist on diseases of the eye, ear, nose and throat; who entered the Army in 1913, and was discharged as captain, M. R. C., July 10, 1919, and was then attached to the American Red Cross Commission to Siberia; died in Siberia, December 13, from typhus fever, and was buried at Irkutsk.

Frederick James Bowles ☉ New York City; University of the City of New York, 1884; aged 67; a member of the American Academy of Ophthalmology and Oto-Laryngology, and the New York Academy of Medicine; ophthalmologist, otologist and laryngologist to the Bloomingdale clinic; died in the Post-Graduate Hospital, New York City, January 28, from pneumonia.

William Lewis West, Indianapolis; Miami Medical College, Cincinnati, 1876; also a druggist; cashier and later president of the First National Bank of Oakland City, Ind.; president of the Farmers and Merchants National Bank, Fort Branch, Ind., and the Citizen's Bank and Trust Company of Princeton, Ind.; died, January 2, from heart disease.

R. K. Prewitt, Ackerman, Miss.; Kentucky School of Medicine, Louisville, 1882; aged 77; once president of the Choctaw County (Miss.) Medical Society and local surgeon for the Mobile, Jackson and Arkansas City Railroad; a Confederate veteran; representative in the legislature from Choctaw County in 1896; died, January 22.

Francis B. Nofsinger, Kansas City, Mo.; University of Nashville, Tenn., 1864; aged 82; surgeon in the United States Navy during the Civil War; who established the first packing house in Kansas City in 1859; postmaster from 1889 to 1893; county assessor and president of the city council; died, January 6, from cerebral hemorrhage.

Edward Grant Birge, Iowa City; Johns Hopkins University, Baltimore, 1907; aged 31; formerly instructor in the department of preventive medicine and hygiene in Harvard University Medical School, and later state epidemiologist of Iowa; captain, M. R. C., U. S. Army, and discharged, Aug. 10, 1919; died, February 4, from pneumonia.

Francis Alonzo Bailey, Hillsboro, Ore.; Willamette University, Salem, Ore., 1870; aged 80; a medical cadet in the Confederate Service during the Civil War; twice president of the Oregon State Medical Association; for several terms mayor of Hillsboro and a member of the city council; died, January 23, from pneumonia.

Edward William Spragge, Toronto; M.R.C.S. (Eng.), L.R.C.P. (Edin.), 1868; aged 76; also a licentiate of the Ontario College of Physicians and Surgeons in 1869; for than forty-seven years medical officer of the Toronto police force, and surgeon to the Canadian Pacific Railway Company; died, December 31.

Parker Lloyd Berge, Brainerd, Minn.; University of Minnesota, Minneapolis, 1913; aged 31; a member of the Minnesota State Medical Association; who as a lieutenant, M. C., U. S. Army, was attached to the Aviation Corps for two years, and was discharged, July 7, 1919; died, January 22, from heart disease.

James Albert Rutledge ☉ Woodmen, Colo.; Rush Medical College, 1866; aged 58; formerly a practitioner of Elgin, Ill.; medical director and superintendent of the Modern Woodmen of America Sanatorium since 1911; a specialist in tuberculosis; died in a hospital in San Francisco, February 3, from influenza.

Tucker Henderson Frazer ☉ Mobile, Ala.; University of Alabama, Mobile, 1888; aged 60; dean and professor of obstetrics in his alma mater; head of the American Red Cross in Mobile during the world war; died in the Southern Infirmary, Mobile, January 26, four days after an operation for appendicitis.

James Elias Seay, Birmingham, Ala.; University and Bellevue Hospital Medical College, New York City, 1899; aged 41; a member of the Medical Association of the State

of Alabama; surgeon to the Birmingham Southern Railroad; died, January 26, from cerebral hemorrhage.

Abraham Feldman, Hammonston, Calif.; College of Physicians and Surgeons, Los Angeles, 1916; aged 30; a member of the Medical Society of the State of California; lieutenant, U. S. N. R. F., and relieved from active duty, July 11, 1919; died, January 20, from pneumonia.

Theodore H. Swayne, Chihuahua, Mexico; Northwestern University Medical School, Chicago, 1895; aged 59; also a graduate of the Faculty of Mexico Medical School; for many years a practitioner of Chihuahua and local railway surgeon; died, January 9, from pneumonia.

George Victor Genzmer, Verona, N. J.; Albany (N. Y.) Medical College, 1913; aged 28; assistant surgeon, lieutenant, U. S. Navy, and on duty for two years at Pelham Bay Hospital, and relieved from active duty, Sept. 4, 1919; died, January 30, from pneumonia.

Charles Edward Treble, Toronto, Ont.; College of Physicians and Surgeons, Toronto, 1901; aged 43; in charge of the roentgen-ray department of the Wellesley Hospital; while making his rounds in Grace Hospital, October 29, died suddenly from heart disease.

Hudgins S. Ellis, Memphis, Tenn.; College of Physicians and Surgeons, Memphis, 1911; aged 36; a member of the Tennessee State Medical Association; died suddenly in St. Joseph's Hospital, Memphis, January 25, from acute dilatation of the heart.

Mary Frye Barry, Washington, D. C.; Northwestern University Woman's Medical School, Chicago, 1887; aged 60; for ten years a practitioner of Colorado, and once a member of the state legislature; died in Colorado Springs, Colo., December 8.

Harry Stoddard Clever, Tuscarawas, Ohio; University of Pittsburgh, 1897; aged 46; a member of the Ohio State Medical Association; health officer of Tuscarawas; died in Grant Hospital, Columbus, Ohio, January 20, from heart disease.

Charles O. Warner, Warsaw, Ill.; Washington University, St. Louis, 1863; aged 89; assistant surgeon of volunteers in the Army during the Civil War; for many years a member of the local school board; died, January 15, from bronchial asthma.

George R. Green, Muncie, Ind.; Medical College of Indiana, Indianapolis, 1878; aged 68; a member of the Indiana State Medical Association, and lecturer on history of medicine in the Indiana Medical College; died, January 24, from pneumonia.

Riley J. Drew, Alma Center, Wis.; Medical College of Indiana, Indianapolis, 1904; aged 45; a member of the State Medical Society of Wisconsin; died, December 28, in Sacred Heart Hospital, Eau Claire, Wis., from bronchial pneumonia.

Joseph Aurelius Young, Caldwell, Idaho; University of Illinois, Chicago, 1903; aged 41; was accidentally drowned, January 20, when his automobile slid off the ferry platform at Froman's ferry into the Snake River.

May Cushman Rice ☉ Chicago; Northwestern University Woman's Medical School, Chicago, 1896; aged 56; a specialist in roentgenology and electrotherapeutics; died, February 4, from pneumonia following influenza.

Sylvanus Joy, Tillsonburg, Ont.; University of the City of New York, 1854; Queens University, Kingston, Ont., 1857; aged 85; for forty-five years local surgeon for the Grand Trunk system; died, October 31.

Robert Kearns ☉ Middletown, N. Y.; College of Physicians and Surgeons in the City of New York, 1888; aged 54; a specialist in diseases of the ear, nose and throat; died, January 21, from septicemia.

Maurice Henry Miesse, Circleville, Ohio; College of Physicians and Surgeons in the City of New York, 1868; aged 76; a veteran of the Civil War; died, January 21, from cerebral hemorrhage.

John Eugene English, Baraboo, Wis.; Rush Medical College, 1883; aged 68; for thirty-seven years district surgeon for the Chicago and Northwestern system; died, January 24, from myocarditis.

Frank A. Sabin, Anna, Ill.; Berkshire Medical College, Pittsfield, Mass., 1861; aged 84; an honorary member of the Illinois State Medical Society; died, January 26, from arteriosclerosis.

Robert Addison Stevenson, Toronto; McGill University, Montreal, 1871; aged 73; chairman of the staff and chief of

the medical service of Grace Hospital, Toronto; died, November 12.

Thomas T. Zerbe, Schaefferstown, Pa.; University of Pennsylvania, Philadelphia, 1869; aged 74; for two terms a member of the state legislature; died, January 26, from cerebral hemorrhage.

Thomas Kelly Proctor, Sulphur Springs, Texas; University of Louisville, Ky., 1895; aged 60; a member of the State Medical Association of Texas; died last month, from carcinoma.

George Henry Albers, Cincinnati; Miami Medical College, Cincinnati, 1887; aged 57; a member of the Ohio State Medical Association; died, January 19, from cerebral hemorrhage.

John Schulze, Racine, Wis.; Bennett Eclectic Medical College, Chicago, 1894; aged 68; for more than half a century a druggist of Racine; died, January 26, from diabetes.

Edward E. Engel, St. Louis; Washington University, St. Louis, 1877; aged 66; for thirty-two years a practitioner of Prairietown, Ill.; died, January 21, from cerebral hemorrhage.

Christopher Columbus Lathers, Lieut., M. R. C., U. S. Army, Washington, D. C.; Howard University, Washington, D. C., 1914; aged 40; died, January 23, from pneumonia.

John M. Wiltshire ☉ Chillicothe, Ohio; Starling Medical College, Columbus, Ohio, 1865; aged 85; a veteran of the Civil War; died, January 17, from valvular heart disease.

Victor Knapp, Ferdinand, Ind.; Medical College of Ohio, Cincinnati, 1881; aged 62; a member of the Indiana State Medical Association; died, January 10, from uremia.

Alexander Crawford ☉ Mount Vernon, Iowa; Rush Medical College, 1883; aged 61; formerly health officer of Mount Vernon; died, January 10, from angina pectoris.

John M. Littler, Fortville, Ind., and Indianapolis; Kentucky School of Medicine, Louisville, 1876; aged 72; died in St. John's Hospital, Anderson, Ind., January 19.

Orson S. Parker, Aurora, Ill.; Tulane University, New Orleans, 1892; aged 52; a member of the Illinois State Medical Society; died, February 5, from pneumonia.

Noah J. LaRose, Zion City, Ill.; Eclectic Medical Institute, Cincinnati, 1885; aged 68; health officer of Zion City since 1902; died, January 18, from influenza.

Franklin Newton Hudson, Gadsden, Ala.; University of Nashville, Tenn., 1874; aged 71; died at the home of his daughter in Birmingham, Ala., January 20.

Joseph A. Liddell, Cedartown, Ga.; Medical College of Georgia, Augusta, 1879; aged 65; a member of the Medical Association of Georgia; died, January 1.

Henry Harlan Townshend ☉ Hedgesville, Mont.; John A. Creighton Medical College, Omaha, 1896; aged 51; died, January 10, from cerebral hemorrhage.

Edward Burns Hughes, Canton, Ill. (license, Illinois, 1878); aged 78; died at the home of his sister in Ipava, Ill., January 23, from senile debility.

Charles Buchanan Young, Lynchburg, Va.; Hahnemann Medical College, Philadelphia, 1881; aged 68; died, January 13, from cerebral hemorrhage.

Wallace G. Bobb ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1880; aged 59; died, January 25, from pancreatitis and septicemia.

Alexander Duff Stevens, Dunham, Que.; McGill University, Montreal, 1857; died in the General Hospital, Sweetsburg, Que., November 22.

Charles H. Wells, Philadelphia; Hahnemann Medical College, Philadelphia, 1891; aged 55; also a dentist; died, January 19, from pneumonia.

Charles Franklin Banta ☉ Eureka, Ill.; Bellevue Hospital Medical College, 1884; aged 63; died in the Methodist Hospital, Peoria, January 10.

Ralph Erskine Moffatt ☉ Harrisburg, Pa.; University of Pennsylvania, 1904; aged 43; died, January 26, in Cumberland, Md., from uremia.

Joseph Harris Cowell, Saginaw, Mich.; University of Michigan, Ann Arbor, 1871; aged 72; a veteran of the Civil War; died, January 18.

J. L. Underwood Cochran, Atlantic City, N. J.; Louisville (Ky.) Medical College, 1892; aged 47; died, December 24, from acute nephritis.

Alfred T. Evans, Rayville, La.; University of Alabama, Mobile, 1873; aged 71; died in Providence Hospital, El Paso, Texas, December 31.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

"AUTO-HEMIC SERUM"

A Cure for Laziness, Ugliness, Frigidity and Many Other Things

The following letters are typical of many that have been received asking for information regarding Dr. L. D. Rogers and his "Auto-Hemic Serum." This from a physician in New York state:

"Can you give me any information in reference to Dr. Rogers of Chicago, Ill., who has an Auto-Hemic Institute?"

And this from Kansas:

"Just received a letter from a Dr. L. D. Rogers, 2812 North Clark St., who is anxious to sell me a course in 'Auto-Hemic Therapy.' Would you kindly inform me what he has to sell? He did not tell me what it consisted of; am inclined to believe it is a rank fake. Kindly let me know what THE JOURNAL thinks about it. Just what is it? In the letter they claim that it is practically a panacea for every blood disease."

This from Maine:

"What is Auto-Hemic Therapy? I have a handsome red and yellow circular from the Ideal Life Extension Press, 2812 North Clark St., Chicago, soliciting subscriptions to their publication, offering as a bonus this book, 'Auto-Hemic Therapy' by L. D. Rogers, A.M., M.D., LL.D., Chicago, and membership in the American Medical Union."

THE NATIONAL MEDICAL UNIVERSITY

In order better to appreciate the probable scientific status of the "Auto-Hemic Serum," it is well briefly to sketch some of the previous activities of its discoverer, Dr. L. D. Rogers. For many years Rogers was the head and chief owner of the National Medical University of Chicago, a low-grade school of the "sun-down" variety. The "university" is now out of existence and for some time before it went out of existence was not recognized either by the board of health of the state in which it operated or by the boards of the majority of the other states in the Union. The report of the Carnegie Foundation on medical education had this to say about the laboratory facilities of Rogers' school:

"The school occupies a badly lighted building, containing nothing that can be dignified by the name of equipment. There has been no dissecting thus far (October to the middle of April, 1909), anatomy being didactically taught. Persistent inquiry for the 'dissecting-room' was, however, finally rewarded by the sight of a dirty, unused, and almost inaccessible room containing a putrid corpse, several of the members of which had been hacked off. There is a large room called the chemical laboratory, its equipment 'locked up,' the tables spotless. 'About ten' oil-immersion microscopes are claimed—also 'locked up' in the storeroom. There is not even a pretense of anything else. Classes in session were all taking dictation."

Dr. Rogers is, or was, if he is not still, "Permanent Secretary" of the "National Association of Panpathic Physicians"—whatever that is. In fact, one of Dr. Rogers' specialties seems to be the founding of quasi-medical organizations—organizations, apparently, which may prove useful in the promulgation of such projects as he may, at the time, be interested in. A few years ago Rogers was exploiting a "cancer serum" and, *presto*, the "American Cancer Research Society" came into being, L. D. Rogers, president. Soon thereafter certain members of the profession were circularized urging them to purchase shares in the "Cancer Research Laboratory and Hospital," par value \$10. Apparently, the profession did not invest.

A few years ago, also, L. D. Rogers' name appeared on the "Faculty" list of the "American Post-Graduate

School," a concern which granted—on the mail-order plan—a long line of sonorous degrees and an equally complete line of ornate diplomas.

THE JAPANESE CONSUMPTION CURE

Then, in 1915, there appeared in the classified columns of certain newspapers the following advertisement:

TUBERCULOSIS—New Japanese treatment; to prove merits and give discovery quick publicity will send 10 days' treatment free.
DR. ROGERS, 546 Surf St., Chicago.

So far as we have been able to learn, Rogers, for some unexplained reason, did not call into existence out of the vasty deep a "Japanese-American Tuberculosis Research Society." This consumption cure apparently died of inanition.

Then came the "Auto-Hemic Serum" with its inevitable sequel, the "National Society of Auto-Hemic Practitioners." Another adjunct to the serum exploitation is the *North American Journal of Homoeopathy*, the official organ of the "Auto-Hemic Practitioners" and of the "American Medical Union" and possibly of some other "societies"—but not representative of homeopathy!

WHAT IS AUTO-HEMIC THERAPY?

What is this new therapy? According to a very lurid poster it is described as "The Missing Link in Medicine"—possibly referring to the ease with which one may make monkeys of certain physicians. More specifically, although still vaguely, we learn:

"It consists in giving the patient a solution made by attenuating, hemolizing, incubating and potentizing a few drops of his or her own blood, and administering it according to a refined technic developed by the author."

Elsewhere it is said to consist:

"... in taking five drops (or some multiple of five) of blood from a vein and putting it into nineteen times as much sterilized, distilled water, and incubating it at fever temperature for twenty-four hours, and then making further dilutions according to the needs of the case, as can be determined only by a physician skilled in its use."

Neither of these statements, of course, describes the "refined technic" of those "skilled in its use," but those who are interested can, by sending Dr. L. D. Rogers, "One Hundred Dollars cash-in-advance" get a mail-order course in this new marvel.

But if it is rather expensive to learn just how to use "Auto-Hemic Serum" it does not cost so much to learn what the "serum" will do. Rogers has written a book on the subject, "Auto-Hemic Therapy," which is used as a premium for subscriptions to the *North American Journal of Homoeopathy*, price "\$5.00 per year, payable in advance." In the book Dr. Rogers modestly assures his readers that he considers his discovery more important than that of Alex. Carrel, winner of a Nobel Prize.

A CURE FOR LAZINESS

One of the chief virtues claimed for this serum is that of developing in the patient who takes it an unbounded energy that, apparently, makes him want to work himself to death. In some sensational articles that have appeared in Sunday editions of newspapers on Rogers' serum, the stuff has been described as "Lazy Serum." One of the first cases described in the Rogers book is that of a young waiter, "a good-for-nothing lazy fellow who would not work and would not pay for medical services" and who was turned over to Dr. Rogers' free clinic. He was given the serum on Thursday and was told to report Saturday. He did not return until Monday, his excuse being that "he worked all day Saturday until midnight and all day Sunday and felt as if he could work all day and all night without rest." The "case report" ends:

"... finally remarking, 'I feel like a bird' he flew out of the classroom and we never saw him again."

HOUSEWIVES TAKE NOTICE

The next case described is that of a servant girl who had not worked for a year; within a week after taking the "Auto-Hemic Serum" "she voluntarily beat carpets till she

blistered her hands." Then there was the rooming house keeper who had spent more than half of each day in bed. After an "Auto-Hemic" injection she "discharged her maid and janitor . . . and did all the work of her twelve room house herself, beating rugs, firing furnace and carrying out ashes besides doing some of the laundry." "Case No. 7176" is interesting: a man, generally considered the laziest person in his community and with a habit of "drinking thirty whiskies a day," took "Auto-Hemic Serum." He stopped drinking, shaved himself and changed from "a 'bum' to that of a sober, clean, wholesome, bright and honest workman." Then there was the case of the "lady physician" who "took the serum one evening and the next evening reported that she had had the 'giggles' all day"; also she became "more magnetic." More remarkable still was the case of the young woman clerk in a retail store who, after taking the serum "astonished her employer by volunteering to work over time." In the chapter dealing with "Ills Peculiar to Women" Dr. Rogers details the moving story of a *man* to whom the "serum" was given and who reported that "about the third twenty-four hours after taking it his bowels moved forty times"—nevertheless, "he felt no exhaustion."

In all phases of human activity the serum seems to work wonders. "The cases are numerous in which the frigidity of both sexes have [*sic*] melted after Auto-Hemic treatment." A young married woman with a morbid dislike for her husband took the serum and within a week "became normal." The discoverer suggests that in some cases there is no doubt that this serum "would prevent divorce." A forty-year-old woman who could not endure to wear any waists but white or black was able, it seems, after taking the serum to tolerate a veritable Jacob's coat.

Is, then, "Auto-Hemic Serum" good for everything? Let Dr. Rogers answer:

"Briefly stated, without any great exaggeration, this new modified serum treatment is good for anything that is the matter with you, provided the cause is not organic, mechanical or bacterial."

One infers that in the inorganic, mental, spiritual and non-bacterial spheres the stuff is supreme. But it has its limitations. For instance, Dr. Rogers states that he once had "a very troublesome cough which lasted several weeks, but did not yield to this serum." Reaching the conclusion that some other treatment was necessary "he had the bones of his neck 'adjusted' and got immediate relief."

AS A COMPLEXION BEAUTIFIER

The serum "cannot be made up by the barrel and sold at wholesale or retail":

"If it could be bottled and stored and sold at retail like a patent medicine, the demand for it as a complexion beautifier alone would net the proprietor millions. More than one person a few days after taking the treatment has been wrongly accused of painting."

Should any of THE JOURNAL readers decide to take the \$100 mail-order course in "Auto-Hemic Therapy" he should realize that even after he has done so there are certain restrictions in the practice of this "therapy." In no case must he administer "a course of Auto-Hemic Treatment" for "less than \$100, paid in advance." The only exceptions to this rule are "cases of absolute charity, expectant mothers and to persons positively unable to pay that amount." Furthermore, Dr. Rogers says that for the reputation of his method, as well as for the good of all concerned, "I insist that the entire fee be paid in advance and that the course extend over a period of one year whether the patient needs few or many treatments."

DOLLARS AND CENTS

For those who do not wish to take the mail-order course Rogers offers to prepare individual specimens of the "serum" from blood that is sent to him by the physician. The cost of this "serum" is \$5.00, "in advance," of course.

Still emphasizing the commercial side, "Auto-Hemic Therapy" is especially recommended to "the general practitioner growing old and the physician who is ambitious to build up a creditable and lucrative office practice" because "the health of four people out of five (old or young, whether they consider themselves sick or well) taken at random can

be improved by this method of treatment"! An Ohio physician was said to have doubled his \$3,000 practice in two years after starting the "Auto-Hemic" method. A Virginia physician is alleged to have "increased his income \$10,000 a year." A Pennsylvania physician, urged by Rogers to send \$150.00 for the mail-order course, was assured that this "is merely a nominal amount, as most of the doctors have been able to get this amount back the first month."

But enough. The story, were it not for the tragic element that forms the background, would be amusing. But it is tragic!

Correspondence

"UNIVERSAL MILITARY TRAINING"

To the Editor:—Your commendation of the provisions for compulsory universal military training in the Wadsworth army bill in your editorial published in THE JOURNAL, January 31, I understand to be an endorsement of militarism. It does not seem possible that any one can avoid this conclusion who is familiar with the history and growth of this institution.

Before the war, in Europe, militarism was a subject much discussed; but here in the United States it received little attention because it did not concern us at that time and very few believed that it would ever be seriously proposed as the policy of our country. Now it has become one of the most important questions of our national life. In a few days the question may be decided by Congress, and your editorial may have important influence in determining the decision. I suppose we may reasonably assume that this was the purpose of the editorial.

I do not now propose to present objections to militarism, but I would like to call your attention to the fact that the advisability of introducing this institution into our national system is by no means admitted by all. On the contrary, this proposal is debated by the most serious students as an exceedingly important problem. I question your right to commit the Association to its endorsement. [The House of Delegates of the American Medical Association is the only body which can commit the Association to any policy; THE JOURNAL does not presume, pretend or intend to arrogate this right to itself.—ED.]

You may claim that military training has some other purpose than the building up of a military system. You may contend that the four months' period of training, which you say is quite too short, is desirable for other reasons than because it furnishes the basis of a very large and trained American army. If you mean that military training is desirable for some other reason than this and for reasons that are so good that they might overbalance the dangers of militarism, it would seem proper that you indicate in some way why you commend it.

If your editorial were in a lay publication that made no claims to authority on questions of health and physical training, one might assume that you had in mind the value of military training for physical development. Your knowledge of the unfavorable reception heretofore accorded by Congress to public health measures must raise a doubt in your mind concerning the conversion of this body implied in its willingness to appropriate from 600 to 1,200 millions of dollars for a health measure. Moreover, it must seem strange that the military forces of the country have suddenly become so intensely interested in a health measure.

This argument for military training is so generally discredited by experts in physical education, and its honesty is so thoroughly impeached by the fact that the proposed compulsory training exempts those who most need it, that is, those least well developed physically as well as all girls, that it is not possible to assume that this senile and badly discredited reason is what you had in mind.

I hope you will inform your readers why you as representative of the American medical profession endorse this measure that some undoubtedly regard as vitally wrong.

C. S. BACON, M.D., Chicago.

"EFFICIENT HOSPITALS": SUCCESS OF PRIVATE ROOM PLAN AT TEMPLE, TEXAS

To the Editor:—I have read with interest the article by Bacon on "The Efficient Hospital" (THE JOURNAL, Jan. 10, 1920, p. 123). It may be of some interest to your readers to know that the plan suggested is not only feasible, but has been in operation for many years at the King's Daughters' Hospital, Temple, Texas. Some years ago the staff of this hospital realized that the patients, especially the operative cases, would be better in private rooms than in the wards. Something like twelve years ago we abandoned the ward system entirely, and since then each patient, charity or otherwise, has had a private room, and it is seldom that the nurse in attendance knows whether the patient is a pay or a charity patient. So far as I know, this is the only hospital that gives charity patients private rooms. The rates of our rooms now run from \$2 to \$6 a day. Last year there were comparatively few calls for charity outright, but all of these were met with service in such rooms as were available at the time. It goes without saying that we do not put the charity patients in the most expensive rooms.

We have had to work practically without donation, except what little the physicians themselves have contributed, and no endowment. We now have a hospital of seventy-five beds. Of course there is some debt for buildings. Most of the buildings are of modern fire-proof construction. I merely mention this to show that the plan can be worked without wards, and charity taken care of, if the administration is thoroughly efficient. A rather stringent rule, that has been lived up to with practically no friction, is that the hospital bill shall be paid before the attending physician or surgeon can receive any pay.

Instead of having four wings, as suggested by Bacon, we have an L-shaped building with arms of about equal length, with the elevator and dumb-waiter at the angle. It is so arranged that no patient is as much as 100 feet from the distributing center. We have long since adopted the plan as suggested by Bacon of central cooking and central linen distribution, and find it exceedingly satisfactory. However, instead of having service rooms on the ground floors, we have them on the top floor, which we have found to be a better arrangement, as there is practically no odor of food throughout the building, and there is less possibility of the help's carrying off food—no small item in the southern country. As in Bacon's plan, we have examining, operating and roentgen-ray rooms, the pathologic laboratory and the like on the top floor, which is conducive to efficient hospital service.

After our experience with private rooms, we would consider wards again only with reluctance, and would by far prefer to furnish the charity patients with one of our less expensive rooms rather than return to a ward plan, which is unsatisfactory both to the patient and to his attending physician.

GEORGE S. McREYNOLDS, M.D., Temple, Texas.

**NOTE ON RESPIRATORY SOUNDS
HEARD ON THE HEAD**

To the Editor:—These phenomena are recorded largely because I do not find any mention of them in the literature. At present I know of no clinical significance which they may have.

When the bell stethoscope is placed over certain points of the face and head, breathing sounds are distinctly heard. These places are, first, the antrums; second, the temporal portion of the scalp; third, the vertex along the median line; fourth, just medially to each mastoid and frequently over the mastoids themselves; fifth, at the junction of the occiput with the neck.

In many cases the breathing sounds may be heard all over the head, in other cases only in the places mentioned. There is a marked difference in the loudness of the sound heard, and, as might be expected, they are best heard on the heads of persons who have but little hair.

The quality of the sound is like that heard over the larynx, and probably represents a transmission along the

skull of the respiratory noises in nose, pharynx and larynx, that is, the upper air passages. I have stated that a bell stethoscope is best for hearing these sounds, but a Bowles may be used. The subject should be instructed to breathe deeply and regularly.

The phenomena are physiologic. That they may be of some significance in fracture of the skull and in diseases of the sinuses and the mastoid seems possible, *a priori*. I have not had the opportunity to study such cases, but take this opportunity of calling the attention of specialists in this field to these phenomena.

ABRAHAM MYERSON, M.D., Boston.

"THYROIDECTOMY IN PREGNANCY"

To the Editor:—In your editorial, January 13, page 329, occurs the question: "May premature delivery be associated with the milder grades of hyperthyroidism?" I believe that it is pretty generally conceded by students of the subject that hyperthyroidism produces premature delivery. I myself have observed a number of cases that seem to substantiate this opinion. The report of one of these cases I am quite sure was published, but I cannot just now cite the reference. It was a case of premature delivery from separation of the placenta, which separation, I concluded after careful survey of the case, was caused by a hyperactive thyroid. Crotti, in his book on "Thyroid and Thymus," page 368, speaking of exophthalmic goiter in pregnancy, says: "It predisposes the patient to uterine hemorrhages and may result in the death of the fetus."

MILES F. PORTER, M.D., Fort Wayne, Ind.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SPIDER VENOM

To the Editor:—Will you let me know the name of the poison that causes the symptoms following the bite of a spider known as the "black widow," or, scientifically, *Latrodectus mactans*. I wish to know how and why this acts so violently on human beings. I have had three cases in the past few years. I have letters from Dr. Howard of the U. S. Department of Entomology, some from the Florida State Bureau, and one from Dr. Eugene Courson, Savannah, Ga., who wrote about the "widow" years ago. Dr. Courson has no extra copies of the paper. The two former told me about the distribution and gave me a list of references. None of them seemed to answer my question of what the poison is and how and why it acts as it does. Hence I am writing to you, as I was sure you would be able to help me out.

GEORGE D. KENNEDY, M.D., Mandarin, Fla.

ANSWER.—Little is positively known about the specific nature of the venom of spiders, although there has been much speculation. The venom is an oily, translucent, lemon-yellow liquid having an acid reaction and a hot, bitter taste. It gives the xanthoproteic reaction and is rendered harmless by heating to 90 C. In many ways the symptoms of spider bites resemble those produced by snake bites, so that it is probable that the spider venoms belong to that class of poisons. It is known that snake venoms are very complex mixtures and that they differ greatly in the different species of reptiles. Among the ingredients that have been found are fibrin ferment and antiferment, proteolytic enzymes, cytotoxins for red corpuscles, and neurotoxins, as well as leukocytes and endothelial cells. The marked effects on the nervous system produced by the bite of the black spiders, *Latrodectus mactans*, and other species of *Latrodectus* indicate that the venom of these animals resembles that of the cobra more nearly than the venoms of American snakes. Kobert believes that all parts of the spider contain a toxalbumin which in some species is mixed with the secretion of the poison gland. He considers that the secretion of the poison gland produces only local symptoms, while the general symptoms are due to the presence of this toxalbumin. It is because of the toxalbumin that the bite of *Latrodectus* is so

severe as occasionally to cause death in human beings. It contains a hemolysin called arachnolysin which acts on the red cells of man, rabbit, mouse and goose, but not on the horse, dog, sheep and guinea-pig. Some authors question whether the nervous symptoms following spider bites may not be due to changes in the blood rather than to a direct toxic effect on the nervous tissues.

The appended bibliography may be of interest:

Houssay, B. A., and Negrete, J.: Nuevos estudios experimentales sobre la acción fisiológica de las ponzoñas de las arañas, *Rev. d. Inst. Bact.*, Buenos Aires **2**:189 (June) 1919.

Kobert: Beiträge zur Kenntniss der Giftspinnen, 1901.

Sachs: Zur Kenntniss des Kreuz Spinnengiftes, *Hoffmann's Beiträge* **2**:123.

Wilson: Records of the Egyptian Government School of Medicine, 1904, p. 7.

Castellani and Chalmers: Manual of Tropical Medicine, 1910, p. 136.

Browning: Original Investigations of Spider Bites in Southern California, *South. California Pract.* **16**:291, 1901.

Davidson: *South California Pract.* **12**:169, 1897.

Riddick: A Case of Poisoning from the Bite of a Black Spider, *North Carolina M. J.* **40**:247, 1897.

Hodgdon, A. L.: Bite of a Poisonous Spider, *Latrodectus Mactans*, *THE JOURNAL* May 4, 1907, p. 1506.

HYPERHIDROSIS

To the Editor:—Some time ago you printed several prescriptions for the treatment of hyperhidrosis. Can you find these for me and tell me in what issue of THE JOURNAL they were published?

WILLIAM HILL BEAN, M.D., New Haven, Conn.

ANSWER.—The following prescriptions appeared in the Therapeutics Department of THE JOURNAL, Jan. 12, 1918:

R Chromium trioxid Gm. or C.c. 2|5
Water 50|
Use as a paint once a week.

This treatment is said to be exceedingly active, and hence must be used with care, especially in the axillae. Less active but more pleasant than the foregoing is:

R Tannic acid Gm. or C.c. 5|
Alcohol 100|
Water up to 200|
Use as a wash twice a day.

The drying powders suggested were:

R Boric acid Gm. or C.c. 10|
Purified talc 100|
R Salicylic acid Gm. or C.c. 5|
Bismuth subnitrate 40|
Zinc stearate 20|
R Salicylic acid Gm. or C.c. 2|
Bismuth subnitrate 20|
Starch 20|

Other remedies suggested are: 25 per cent. solution of aluminum chlorid in distilled water; 2 per cent. solution of the official liquor formaldehydi in water (a 5 per cent. solution may be used for the feet); pure glycerin; potassium permanganate solutions of about 5 parts to 1,000. In very severe cases, the roentgen ray has been used with some good effect; however, the method is expensive and not entirely safe in unskilled hands.

DRY, WARM CLIMATE TO RETARD DEAFNESS

To the Editor:—I am unfortunate enough to suffer from partial deafness, due to catarrh of the nares, eustachian tube and middle ear. I realize that my hearing is becoming worse and that sooner or later I shall be incapacitated from doing medical work. I have treated with some of the best aurists in the East, have had my tonsils removed, septum straightened, tubes dilated and ears inflated, but without any permanent success. One or two aurists have replied, in answer to my query concerning the effect of climate, that my removal to some dry climate might aid my ears. I have endeavored to learn from the U. S. Public Health Service and the U. S. Weather Bureau of some of the localities in the United States where the climate may be suitable to my needs, but without success. It occurs to me that you may be able to give me the information I desire or may be able to refer me to some one who can. Or it might be that the publication of this letter will put me in touch with physicians who will give me the desired information. Whatever the course pursued to obtain the facts I want, I shall be glad to meet any expenses that may arise. I shall appreciate greatly any reply you may make or any thing you may do in this matter.

ROLLA CAMDEN, M.D., Parkersburg, W. Va.

ANSWER.—This communication is published for the purpose of bringing our correspondent's request to the attention of some reader who may be able to give him the information he seeks.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
- CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.
- CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
- FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
- ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
- IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
- MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
- MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
- NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
- NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
- RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

Massachusetts September Examination

Dr. Walter P. Bowers, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Sept. 9-11, 1919. The examination covered 13 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 45 candidates examined, 35, including 4 osteopaths, passed, and 10, including 3 osteopaths, failed. One candidate, a graduate of Harvard University in 1915, passed a special examination held Sept. 24, 1919. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery.....	(1916)		78.8
Rush Medical College.....	(1898)		75
Bowdoin Medical School.....	(1917)		79.3
Medical School of Maine.....	(1899)		75
Baltimore Medical College.....	(1895) 75, (1912)		75
University of Maryland.....	(1916) 78.9, (1917)		79.8
Boston University	(1906)		80.5
College of Physicians and Surgeons, Boston.....	(1919)		76.7
Harvard University (1913) 80.6, (1914) 81.2, (1916) 82.7, 87.5, (1918) 83.			
Middlesex College of Medicine and Surgery.....	(1919) 77.1, 78.2		
Tufts College Medical School.....	(1905) 76, (1917)		75
University of Michigan Homeopathic Med. School....	(1911)		81
Washington University	(1919)		85
Dartmouth Medical College.....	(1910) 80.7, (1914)		81.7
Cincinnati College of Medicine and Surgery.....	(1901)		78.4
Ohio State University College of Homeo. Med.....	(1915)		76.9
Hahnemann Medical College and Hospital of Phila....	(1919)		82.2
Jefferson Medical College.....	(1908) 81.2, (1918)		80.1
Woman's Medical College of Pennsylvania.....	(1912)		77
University of Vermont	(1915)		75.7
McGill University	(1916)		85.5
FAILED			
Chicago College of Medicine and Surgery.....	(1914)		68.5
Chicago Hospital College of Medicine.....	(1917)		71.6
College of Physicians and Surgeons, Boston.....	(1916)		68.2
Middlesex College of Medicine and Surgery (1918) 65.1, (1919) 68.2, 71.2.			
Tufts College Medical School.....	(1919)		73.3

Connecticut November Examination

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, Nov. 11, 1919. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
New York Homeopathic Med. Coll. and Flower Hosp....	(1919)		83
LICENSED BY RECIPROCITY			
College	Year Grad. Reciprocity with		
New York Homeopathic Med. Coll. and Flower Hosp....	(1915)	New York	
New York Med. College and Hospital for Women....	(1903)	New York	

Social Medicine and Medical Economics

HOME AND PUBLIC HEALTH NURSES AND THEIR TRAINING

JOHN DILL ROBERTSON, M.D.

Commissioner of Health

CHICAGO

As this paper goes to press, we are in the midst of the 1920 outbreak of influenza.

Several days before the outbreak assumed epidemic proportions, the available supply of regular nurses was exhausted. For a period of days the calls for nurses poured in at the health department at the rate of fifty an hour.

At the offices of the School for Home and Public Health Nursing, two girls were kept busy at the telephone all the time taking calls for nurses trained in our eight-weeks course. Four hundred of our graduates took cases in private homes. Six hundred others, who were restrained by household duties from nursing full time, spent as many hours each day as they could spare in attending to the needs of the families in their neighborhood. All others, so far as I can ascertain, took care of their own ill, if they had any. Apparently there were no demands made on the regular nursing agencies by the families of any of our graduates.

THE DIFFICULTY OF SECURING NURSES

Every physician knows the difficulty of securing competent nursing care for the family in moderate or in submoderate circumstances. The difficulty has been steadily growing greater instead of less. There are various causes responsible for this condition. Foremost among them is the extension of the preliminary requirements for matriculation in a hospital for training. The nurse that is required to graduate from high school and spend three years in hospital training before she is eligible for registration feels that she cannot afford to work for less than \$35 a week. And she is quite right.

There is no question about the value of the registered nurse: her services are invaluable for those who can afford them. The trouble is that only those in very comfortable financial circumstances can afford them. When the family weekly income must cover fixed expenses such as rent, fuel, food, clothing, insurance, and so on, it is obvious that there is not sufficient left to cover \$35 a week and board for a nurse.

Physicians realize that disease is all too frequently the penalty of carelessness or of ignorance. Often it is the result of ignorance. There is no reason, however, why the victim should be too heavily penalized. His suffering is usually sufficient punishment for him. It is our duty to teach him as much as we can; but when a man is ill we should help first and teach afterward.

THE SCHOOL FOR HOME AND PUBLIC HEALTH NURSING

In August, 1919, we established in Chicago the School for Home and Public Health Nursing, both to teach and to help. The length of the course is two months. The pupils spend in class two hours a day for three days a week. We graduated 790 in the first class and 1,363 in the second class. Our third term opened, December 6, right in the midst of the fuel shortage incident to the coal strike. We found it necessary, therefore, to limit the size of the class to 1,000, and now have that number enrolled. We hope, however, to be able to make some arrangements that will enable us to admit a larger class in February.

At no time since the graduation of the first class have we been able to fill the calls for the services of these women,

in spite of the fact that we have not circularized the physicians of the city or in any way attempted to advertise their work. The calls for them have come in the main from the patients themselves, rather than from the attending physicians; but no dissatisfaction with their work has been expressed to me. Quite the reverse. As to the work they have been doing in their own homes I have, of course, no data.

In the beginning, our course aroused bitter opposition in some quarters. There is still some opposition; but this has never been sufficient to affect the work. Those who have spent three years in hospital training naturally feel that a nurse cannot be trained in two months—every one knows that a West Point graduate felt just the same way about a Plattsburg man. We do not, of course, pretend that the nurses we are training are the equal of registered nurses—that would be foolish, indeed. What we claim is that they can satisfactorily fill the need for nurses in the general run of cases in which all that is needed is some one to follow the physician's directions intelligently. In a critical surgical case, I should prefer a surgically trained nurse; surgical cases, however, make up a very small percentage of the cases that require nursing. For nursing tuberculosis, diabetes and cancer cases; nervous invalids, elderly persons, babies, children with measles, chickenpox, and, in fact, any children's diseases; for cases of tonsillitis, septic sore throat, colds, etc.—in short, for the great bulk of nursing, these women are quite as capable as the registered nurse. Often they are more desirable because they are willing to do housekeeping as well as nursing, and, in its final analysis, nursing is nothing more nor less than housekeeping for the sick.

THE CURRICULUM

Before we established the school, I called a meeting of the staff of the department of health. We discussed the curriculum of the standard nursing course with a view to determining what in the course was essential. As a result of this conference, we drew up a course of study for our school. Then we selected from our staff of physicians those who seemed best fitted to teach the subjects we had included in the course, and from our corps of city nurses we selected those who could best demonstrate the nursing technic we thought necessary.

The course included lectures on:

- The home nurse, her duties, qualifications and dress.
- The sick room.
- Daily routine care of the patient.
- Giving medicine and home medicine equipment.
- Temperature, pulse and respiration.
- Uses of water as a therapeutic agent.
- Symptoms of sickness.
- First aid to the sick.
- First aid to the injured.
- Poisons and their antidotes.
- The human body.
- Food.
- Food for the sick.
- Sanitation of the home.
- Plumbing and the housewife.
- Contagious diseases.
- Causes, symptoms and prevention of contagious diseases.
- Principles of contagious disease nursing.
- Nursing care of influenza.
- Nursing care of patients suffering from tuberculosis.
- Obstetric nursing.
- Care of the baby.
- Care of the older child.

Our demonstrations included bed making, bathing, sponging, taking temperature, pulse and respiration, bandaging, first aid, etc.

We placed most emphasis on the taking of temperature, pulse and respiration. We held temperature, pulse and respiration clinics. Every pupil was required to provide herself with a clinical thermometer. We taught them to take temperature by mouth, by rectum and by axilla; and we didn't let one go until she could take temperature and read her ther-

mometer correctly. Many of them learned in a short time, others were slower. The hardest two weeks of the course, so far as the instructors were concerned, were the two weeks when we were drilling on this subject.

The lectures on contagious disease nursing were given by the nurse in charge of the work at our contagious disease hospital. The lectures on obstetric nursing were given by a woman who had spent twenty years in that sort of nursing. The lectures on the nursing of the tuberculous were given by experts in this line from the Municipal Tuberculosis Sanitarium, and augmented by lectures by the medical director of that institution. And so on with the other lectures—each was given by the best talent that we could command. No one who lectured did so from theoretical knowledge alone.

Throughout the course we hammered on two main propositions—absolute adherence to the physician's orders, and cleanliness. In order to show them what a physician means by cleanliness, I arranged that every woman who attended the lectures should be given a chance to see at least one surgical operation from a hospital amphitheater. They were visibly impressed by the precautions taken by the surgeon and his assistants to secure absolutely aseptic conditions. Clean hands

TABLE 1.—DATA CONCERNING THE FIRST TWO CLASSES

Ages:	No.
Under 20	81
From 20 to 25	311
From 25 to 30	354
From 30 to 35	320
From 35 to 40	328
From 40 to 45	282
From 45 to 50	245
Over 50	147
Nativity and marital status:	
American born	1,728
Foreign born	425
Colored	192
Single	802
Married	997
Widowed	354
Education:	
Grammar school	1,252
High school	520
Business college	245
College	136

no longer mean to those women what clean hands meant to them before they saw the surgeon and his assistants scrub up.

It is no part of the duty of a nurse either to diagnose or to prescribe. In our lecture on the "Symptoms of Disease" we endeavored to teach them what symptoms indicated the presence of a condition that should be brought to a physician's attention; we made no attempt to teach them to read the meaning of the symptoms. We taught them that when they found a high temperature associated with an abnormal pulse they were to summon a physician at once. We taught them that any abnormal condition of the excretions of a person, whether a patient or one apparently in good health, should be brought to the attention of a physician. We tried to make clear to them that it was wise to have a physician overhaul the physical mechanism as soon as there was even an apparently trifling indication of trouble rather than to wait to see whether something worse would develop. Our idea in this was to have these women become the guardians of the health of their families first and to act as their nurses secondly.

In our lecture on "Giving Medicine," we emphasized the importance of absolute adherence to the physician's orders. We made not the least attempt to teach the women to prescribe; on the contrary, we tried to make clear to them the danger of attempting to prescribe even castor oil of their own accord. There is no other place in the universe where a

little knowledge is so truly a dangerous thing as in medicine. These women know that they know nothing about materia medica—at least we told them so often enough.

Our aim throughout has been to train them enough to enable them to follow the physician's orders explicitly; but not enough to make them think they can assume any part of the duties of the physician.

In order that there might be no mistake as to what they had been taught, we collected the lectures from those who gave them and incorporated them in an official note book. We gave a copy of this note book to each nurse we graduated.

TABLE 2.—SALARIES DESIRED BY EIGHT HUNDRED AND SEVENTY-TWO GRADUATES WHO ARE WILLING TO WORK OUTSIDE THE FAMILY

	No.
Willing to work for from \$10 to \$15.....	7
Willing to work for from \$15 to \$18.....	82
Willing to work for from \$18 to \$20.....	165
Willing to work for from \$20 to \$25.....	618

USE MADE OF THE TRAINING

Many of the women we have trained have no intention of doing any nursing outside of their own families. The figures given in Table 2 will be of interest. Whether they nurse their own families or their neighbor's families, however, makes little difference in the final result. If Mrs. Brown can nurse her own sick, the nurse who would otherwise be on duty in her home is released for work elsewhere. The homes in which there are neither babies, children nor elderly persons are few and far between. Where there are none of these to tax the family income, the family can probably afford to pay for the services of a registered nurse in case of illness in the household. Where there are babies, children or elderly persons, the nurse is always likely to have enough to do to keep her busy at home.

We started the school when we did in order to be prepared for a possible recurrence of the influenza epidemic that swept our country during the winter of 1918-1919. A great many of the women that we have trained can be depended on to come to our aid in time of need, such as a recurrence of the epidemic would cause. When I say that they are unwilling to do nursing outside of their own homes I mean ordinarily, not during an epidemic.

Many of our graduates want more knowledge, as witness the data given in Table 3.

TABLE 3.—GRADUATES WHO DESIRE FURTHER INSTRUCTION

	No.
Registered for extension courses	1,222
Willing to enter hospital:	
For three months	225
For one year	50
For two years	8
For three years	35

CONCLUSION

The prophet's job is a thankless one, consequently I shall not attempt to prophesy the final outcome of the movement that we have undertaken. I shall, however, state that I expect to have trained 10,000 women in our school by the end of the first year of its existence. Ten thousand nurses sounds like a drop in the bucket in a city of two and a half million; but 10,000 such nurses would have saved many lives if we had had them during our epidemic in 1918. Moreover, it is a start, and every one knows that a task well started is half finished. Eventually, I should like to have every housewife in Chicago in our class room, not so much to train her to

nurse the sick as to train her to keep her family well. In my mind there is no doubt that preventive medicine will supplant our present system of remedial medicine in the near future. When every man pays his physician to keep him well instead of to get him well, there will be little need of health commissioners. I am trying to do my part toward bringing about such a state of things.

Let me repeat, it is no part of our plan to run in opposition to the registered nurse. There will always be a field for her. It is our plan to train a body of housekeepers for the sick, practical nurses, attendants—whatever you want to call them—who will competently carry out the physician's directions in that great bulk of cases in which it is out of the question to pay for the services of a registered nurse. We are training soldiers to serve under the leadership of the physician in the fight against disease; we are not training subofficers.

I should like to see a similar movement undertaken by every health department in our land, and can promise the help of my department to the extent of our resources to any one who desires it.

Book Notices

VENEREAL DISEASES: A PRACTICAL HANDBOOK FOR STUDENTS. By C. H. Browning, M.D., D.P.H., Director of Bland-Sutton Institute of Pathology of Middlesex Hospital, and David Watson, M.B., C.M., Lecturer on Venereal Diseases, Glasgow University, with an Introduction by Sir John Bland-Sutton, F.R.C.S. Cloth. Price, \$6.50. Pp. 336, with 76 illustrations. New York: Oxford University Press, 1919.

This manual gives an outline of our knowledge of syphilis in 140 pages, and then of gonorrhea, in almost the same amount of space. The presentation is up to date, scientific, well written, and orthodox. As one of the authors is a laboratory man who has done considerable work on syphilis, the book goes with more than ordinary detail into the laboratory side of these diseases. This is altogether to be desired. The consideration of the diseases, furthermore, is not confined to either genital or skin manifestations: the systemic manifestations of both syphilis and gonorrhea are given due consideration. Although the book is called a handbook of venereal diseases, chancroid, curiously enough, is given no formal consideration, being taken up incidentally in connection with the diagnosis of syphilis. It is entitled to more consideration in a book on venereal diseases. The make-up of the book is good. Some criticism is to be made of the illustrations. The clinical illustrations in black and white are not as good as we are used to, and many of the colored clinical illustrations, which are made from color photographs, are poor. A few are quite lifelike. The book has the great merit of being concise and not burdened with unnecessary details. It can be highly recommended as a guide to a practical knowledge of syphilis and gonorrhea.

PLASTIC SURGERY: ITS PRINCIPLES AND PRACTICE. By John Staige Davis, Ph.B., M.D., F.A.C.S., Instructor in Clinical Surgery, Johns Hopkins University. Cloth. Price, \$10 net. Pp. 770, with 864 illustrations. Philadelphia: P. Blakiston's Son & Co., 1919.

It is the author's opinion that "the field of plastic surgery extends from the top of the head to the sole of the foot, and no properly trained plastic surgeon would be willing to limit his work to the face alone"; as a result, he has assembled between the covers of one book a summary of restorative and reconstructive surgery dealing primarily with defects of the surfaces of the body, including harelip and cleft palate, hypospadias, and exstrophy of the bladder. Wound infection, burns, deforming cicatrices, chronic ulcers and the general principles of tissue transplantation, with especial reference to the transplantation of skin, are among the subjects receiving thorough consideration. There is little to criticize unfavorably, and much to commend. The style is clear and convincing; there is no verbosity, and yet when the author has discussed a subject there are few places where the admirable brevity of the text permits of ambiguity

or misinterpretation. The illustrations are numerous, well executed and labeled with a thoroughness rarely seen in textbooks, but which should be much appreciated by those who may wish to use this book as a guide. An abundant and possibly top-heavy bibliography appears at the end of each chapter. The author has what might be called the definitive adjective habit. Like many other medical writers, he speaks of an appendicitis, a pneumonia, a necrosis, apparently being unable to overcome the habit of interjecting the unnecessary word. From a scientific standpoint the book is excellent, and should find a place in every medical library.

MEDICAL SCIENCE: ABSTRACTS AND REVIEWS. Monthly. Published for the Medical Research Committee by the Oxford University Press. Price, \$8.50 per annum.

This publication is an outgrowth of one published during the war under the auspices of the Medical Research Committee to keep British military physicians informed concerning advances in medical science as revealed in periodical literature. The publication includes collective abstracts on various subjects as well as abstracts of single articles which have seemed to the editors to be of special importance. The editors are: medicine, J. D. Rolleston, M.D.; surgery, W. G. Spencer, M.S., F.R.C.S.; pathology and bacteriology, W. Bulloch, M.D., F.R.S.; neurology, F. M. R. Walshe, M.D., and radiology, W. S. Lazarus-Barlow, M.D., F.R.C.P., and Sidney Russ, D.Sc. In addition to covering the field as did the German "Centralblatts," the editors of the various departments do not seem to be bound to local or national schools of medicine, but have consulted freely the periodical literature of all nations.

PHYSICAL DIAGNOSIS. By Richard C. Cabot, M.D., Professor of Medicine in Harvard University. Seventh edition. Cloth. Price \$4. Pp. 527 with 269 illustrations. New York: William Wood & Co., 1919.

In his preface, Dr. Cabot states that new experiences gained during the war have modified his ideas on the cardiac signs of nervousness, on hilum tuberculosis, on goiter heart and on empyema. New matter has been supplied on these subjects. He also states that he has developed great skepticism "as to the existence of rheumatic mitral regurgitation (without stenosis), as to the diagnosis of chronic appendicitis and of tricuspid stenosis." He has also presented some new views on the subject of arterial sclerosis and blood pressure. Beyond these points, the book appears much as usual. It is well printed, with numerous illustrations, and is a reliable textbook.

Medicolegal

Liability for Negligent Advice to Parents of Scarlet Fever Patient

(*Skillings v. Allen* (Minn.), 173 N. W. R. 663)

The Supreme Court of Minnesota, in affirming an order overruling a demurrer to the complaint in this case, holds that a physician may be liable to a parent of a patient for damages sustained by such parent from negligent advice given by the physician, as when the patient had scarlet fever. In other words, the court holds that a complaint states a cause of action when it is alleged therein that the defendant, a physician, was employed by the plaintiff to attend his minor daughter professionally while she was sick; that, knowing that the child's disease was scarlet fever, he negligently advised the plaintiff's wife, who inquired in his behalf as well as in her own, that it was safe to visit the child, then in a hospital and under the defendant's care; that he also advised her that it was safe to remove the child from the hospital to the plaintiff's home, and that there was no danger that the disease would be communicated, although it was then at a stage when great danger of infection existed; that the plaintiff and his wife did not know of the infectious nature of the disease and relied on the defendant's advice, and accordingly visited their child at the hospital

and removed her to their home, and the plaintiff thereby contracted scarlet fever, to his damage.

The court says that the case was a novel one, wherein it had been certified that the question raised was important and doubtful, and counsel for the defendant asserted that no case like it had before been presented to any court, so far as they had been able to ascertain. Counsel contended that a cause of action was not stated because there were no contractual relations between the plaintiff and the defendant. But the statement in the complaint, that the child was under the defendant's care "pursuant to solicitation and employment by the plaintiff and his wife," amounted, the court thinks, to an allegation that there were such relations. True, the child was the defendant's patient; but can it be said that therefore he owed no contractual duty to her parents by whom he was employed? The child would have a cause of action against the defendant for the consequences of any failure on his part to treat her with ordinary professional skill and care, though she did not employ him. The plaintiff might also have a cause of action entirely separate and apart from that of his child for the loss of her services, due to the same failure to exercise ordinary professional care which gave rise to the child's cause of action. Generally speaking, one is responsible for the direct consequences of his negligent acts whenever he is placed in such a position with regard to another that it is obvious that if he does not use due care in his own conduct he will cause injury to that person. This principle was applicable to the fact stated, and the demurrer to the complaint was properly overruled.

Assuredly this was a case in which there was every reason to hold that the defendant was under a legal duty to the plaintiff, and it was of little practical consequence whether the duty was called contractual or noncontractual. The health of the people is an economic asset. The law recognizes its preservation as a matter of importance to the state. To the individual nothing is more valuable than health. The laws of Minnesota have been framed to protect the people, collectively and individually, from the spread of communicable diseases. Scarlet fever is classed as such a disease. When the defendant discovered that the plaintiff's child was suffering from an infectious disease, it became his duty to comply with the laws of the state in order that the public health might be protected. His duty did not stop there. The child's parents were naturally exposed to infection to a greater degree than any one else. To advise them that they ran no risk in visiting her at the hospital or in taking her into their home necessarily exposed them to danger if they acted on the advice, and the defendant was bound to know that they would be likely to follow his advice. It was allowed that the advice was given negligently, and all the necessary elements of a cause of action based on negligence were present.

The court concludes that the complaint was not demurrable, although it might be true, as suggested, that it is a matter of common knowledge that scarlet fever is an infectious disease and that the plaintiff might not have been greatly influenced by the defendant's alleged assurance that he might visit his child or take her to his home without running any risk of infection.

Osteopathy and the Practice of Medicine

(*In re Opinion of the Justices (R. I.), 107 Atl. R. 102*)

The Supreme Court of Rhode Island, in giving the opinion, in answer to a question in regard thereto submitted by the governor, that persons who have received certificates to practice osteopathy from the state board of health, and who have registered in the town clerk's office of the city or town in which they reside their authority for so practicing, are legally entitled to sign death certificates in those cases in which they were last in attendance professionally on the deceased, says that it thinks the conclusion reached is strengthened by a consideration of the result if the other construction were adopted. In that case we should have this situation: The state by its examination and certificate has certified to the ability of the osteopath to discover the cause

of the disease while the patient is alive; but, on the death of the patient, the osteopath then is to be held to be incompetent and unauthorized to state the cause of death. Such a construction is illogical, and its effect would be to impose in many instances unnecessary hardship and pain on the relatives of the deceased. It cannot be doubted that the practice of osteopathy as authorized by Chapter 1058 of the Public Laws of 1914 is the practice of medicine within the meaning of those words as used by Section 8 of Chapter 193, by which penalties are provided for the unlawful practice or attempt to practice medicine or surgery or any of the branches of medicine or surgery. The statute authorizes the licensed practitioner of osteopathy to make a diagnosis of diseased or abnormal conditions of the human body and to apply a remedy therefor. This power of diagnosis is not restricted. Having determined, however, the nature and the cause of the sickness, the practitioner is then restricted to the remedy for the ailment which must be confined to manipulation of the body; the method and the extent of the manipulation is left to the judgment of the practitioner. But in some parts of the statutes the word "physician" undoubtedly does have the limited meaning of doctor of medicine, and not the broader meaning; as in Chapter 123, Section 54, by which it is provided that liquors are not to be sold, etc., except on a physician's prescription; and in Section 17 of Chapter 178, "Of Medicines and Poisons," where it is provided that any physician who shall prescribe certain drugs, etc. As osteopaths have no authority to give prescriptions or to prescribe drugs, it is manifest that the word "physician" in these clauses does not include a practitioner of osteopathy.

Demand for Injection of Collargol Not Reasonable

(*United States Fidelity & Guaranty Co. et al. v. Wickline (Neb.), 173 N. W. R 689*)

The Supreme Court of Nebraska holds that, when a woman employee who has suffered an injury to one of her kidneys offers to permit a roentgenogram of the kidney to be made, but refuses to permit the injection of collargol into the kidney for the purpose of rendering it opaque, she does not necessarily, by such refusal, forfeit her right to compensation under the employers' liability act. The court says that in a former opinion it stated that, in the present advanced state of the science of roentgen-ray examinations and photographs of the person, there appears to be no reason why such examination or photograph should not be permitted by a claimant for compensation under the employers' liability act, on request by the employer or insurer, unless the request is shown to be unreasonable. The district court was therefore required to determine whether under the circumstances the request in this case was reasonable. A physician skilled in the art of making and reading roentgenograms testified that in order properly to determine the extent and character of the defendant's injury a roentgenogram of the kidney ought to be made, and that in order to make a proper roentgenogram it might be necessary to inject collargol into the kidney. In the hands of an expert, he said, there is no danger whatever; but that procedure is not used as extensively as formerly, because of ability now to roentgenograph the kidney without it, though he found it necessary to use the solution in a few cases. The defendant testified that if the court called on her to have a roentgenogram taken, she would permit that to be done; but she would refuse to have collargol injected into her kidney. The district court found that the demand on her was not reasonable, and that her refusal ought not to bar her from a recovery of compensation under the employers' liability act; and the supreme court is constrained to hold, with the trial court, that the demand on Mrs. Wickline was not reasonable. It will be seen from the testimony produced by the plaintiff, the supreme court says, that it is only in rare instances that it is necessary to inject this substance into the kidney, and it would seem that the plaintiff ought to have availed itself of the defendant's offer to submit to a roentgenoscopy without this injection. It might be that an injection was not necessary.

Society Proceedings

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Jan. 14, 1920

The President, DR. J. FRANKLIN STAHL, in the Chair

The Question of Dental Infection in the Production of Nervous and Mental Diseases

DR. CHARLES K. MILLS: Fortunately, the mind of the profession seems to be tending toward a very healthy discussion of the probable fallacies of dental infection in its relation to various important diseases, and of many other correlated and zealously exploited views. Shortly after the death of Colonel Roosevelt, a newspaper article appeared which illustrated one of the most dangerous forms of medical propaganda. It was stated that one of Colonel Roosevelt's teeth was the indirect cause of his death, and that thousands of persons die or are incapacitated yearly from maladies arising from infected teeth. The cases of a rescued backward boy whose brain was clouded to the point at which he could not master the rudiments of knowledge, and a youth assailed with a lethargy at the age of 15, who afterward became one of the most brilliant lawyers of the Middle West, were included in a series of cases supposedly illustrative of the marvelous results of the removal of infected teeth. I have but little doubt that literally bushels of teeth of excellent quality have been sacrificed as the result of this atrocious article about Colonel Roosevelt. Viewing roentgenograms, I have been skeptical as to what are designated as abscesses at the roots of teeth. It has always seemed to me that these pictures represented absorptive lacunae or artefacts of some other description, rather than true abscesses. The roentgen ray enables us to discriminate between areas of differing density. In a strict sense an abscess cannot be demonstrated by a roentgenologic investigation. A score or more of cases have come to my knowledge in which important mental and nervous diseases have been attributed to dental infection, and in which the teeth had been removed with results in some instances so harmful as to make me feel that the procedure was almost a criminal one. Dr. Cotton, one of the leading psychiatrists of the country, attributes many and diverse forms of insanity to dental infection. The late Dr. August Hoch, in a critical review of one of Dr. Cotton's articles, clearly points out the logical defects in the presentation. Under the influence of the propaganda of focal infection, to use the expression of Dr. Peterson, the colons of epileptics bid fair to be reduced to semicolons by operation. The appendix will soon no longer be a vestigial illustration, and the tonsil, protrusive and submerged, is sharing the fate of the ovary in our early experience. A nose and throat specialist not long ago gravely informed me that he thought of preparing a statute to be presented to the state legislature making compulsory the extirpation of the tonsils of children after reaching a certain age on the theory that prevention is better than cure. On the same principle may not our exodontist friends be called in for their exterminating activities, and thus free the rising generation of teeth which in the course of time may have their roots infected and abscessed? I protest against the too free use of the therapeutics of organic mutilation. If the craze for violent removal goes on, it will come to pass that we shall have a gutless, glandless, toothless and perhaps, thanks to psychology and surgery, a witless race.

Dental Therapeutics Based on Clinical and Roentgen-Ray Investigations

DR. WILLIAM MIDDLETON FINE: As a dentist I am forced to believe that too many teeth are extracted in the expectation that their removal will cure systemic disturbances. Because it is possible to demonstrate the same micro-organisms in pulpless teeth and in arthritic joints, it should not be stated that the teeth are invariably the primary cause of the infection. The extraction of badly decayed teeth with root abscesses, or their restoration to health and usefulness,

removes one of the contributing factors in the cause and development of many diseases. I do not share the belief that all nonvital teeth should be removed. Our bodily protective processes prevent well treated teeth, without living pulps, being the direct cause of disease. Talbot would lead us to believe that all the shadows in roentgenograms of dead teeth are not abscesses, and that these teeth should not be extracted ruthlessly. I agree with those who advise the extraction of dead and diseased teeth after a thorough attempt to effect a cure has failed or is doubtful. It is more than likely that 75 per cent. of the shadows in the roentgenograms at the apical ends of teeth have been caused by irritation from mechanical treatment and the use of drugs in dental operations, and hence these teeth are removed unjustifiably. I have seen teeth that roentgen-ray examination indicated were abscessed—as some men would say—remain fifteen years or longer without any symptom of disease, local or general. I received recently three cards from men announcing that they were giving up general practice to specialize in extraction of teeth. We do not need three new extractors every week.

Present Status of Oral Sepsis in Relation to Systemic Disease

DR. JAMES M. ANDERS: The importance of the relation of tooth root infection to systemic diseases cannot be overemphasized from the point of view of study and investigation. Our knowledge of the flora of the mouth, as related to special affections, is still imperfect. A closer cooperation between dentist and physician, along bacteriologic lines, is urgently needed to deal intelligently with affections of the teeth and alveolar processes, and to correct the haphazard sacrifice of the masticating apparatus. I recall a case, one of epilepsy, in a young woman, aged 19, in which, on the advice of a physician, all the teeth, although in good condition, were extracted, without, of course, any effect on the epilepsy. It behooves physicians and dentists to oppose the appalling present rate of removal of teeth. It has been shown that after the fortieth year of life, disseminated infections leading to constitutional disturbances are more frequent and of more serious character than in younger subjects. That many morbid medical conditions may be of oral origin is shown in their cure following the removal of the foci of oral infection. Among many such medical conditions are arthritis, endocarditis, pericarditis, myocarditis, gastritis, myocardial degeneration, chronic nephritis and exophthalmic goiter. Gingival and dental diseases, however, are rarely the sole cause of the morbid states for which gums and teeth may be held responsible. Before teeth are condemned, it is a matter of vital importance to determine that other than oral infectious foci are not present. Treatment based on roentgen-ray studies alone is unwise, since the deeper dental lesions may be simulated by other local conditions, and an abscess which actually exists may not be shown. The local and clinical features are to be noted carefully, and extreme caution should be observed in ascribing a systemic infection to the mouth condition. Bacteriologic study is essential in oral infections. Sanitary oral cavities are potent factors in limiting the incidence and spread of communicable diseases.

Roentgen-Ray Studies of Dental Defects

DR. HENRY K. PANCOAST: The roentgenologist is not able to judge of the direct connection between dental conditions and their supposedly resultant systemic conditions. This is the work of the internist. Not all "clear areas" are due to abscesses at the roots of teeth. Some may be due to old infections, others to chemical irritants. If read properly, however, most of these "clear areas" represent active abscesses. I am opposed to the wholesale extraction of teeth. In many instances it is possible to treat abscessed teeth successfully and have good service from these teeth afterward. An abscess may be present at the root of a tooth and not show in the roentgenogram, but that is a rare occurrence. Experience in the interpretation of the roentgenograms is more important than the technic, and such interpretation is best carried out by the dentist and the roentgenologist in collaboration.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

January, 1920, 159, No. 1

- Some Practical Points in Prostatic Surgery. J. B. Deaver, Philadelphia.—p. 1.
- *Surgical Renal Tuberculosis: Prognosis. W. F. Braasch, Rochester, Minn.—p. 8.
- Diagnostic Significance of First Sounds of Heart. Le Roy Crummer, Omaha.—p. 20.
- Diabetic Service at U. S. Army General Hospital, No. 9, Lakewood, N. J. F. M. Allen and J. W. Mitchell, New York.—p. 24.
- Studies in Bone Growth: An Experimental Attempt to Produce Pseudarthrosis. F. H. Albee, New York.—p. 40.
- *Points in Pharmacology of Certain Drugs Used for Stomach Effects. W. A. Bastedo, New York.—p. 53.
- *Roentgen-Ray Sign of Perinephritic Abscess. M. H. Fussell and H. K. Pancoast, Philadelphia.—p. 67.
- *Effects of Restricted (So-Called Ulcer) Diets on Gastric Secretions and Motility. B. B. Crohn and J. Reiss, New York.—p. 70.
- Clinical Experience with Sahli's Sphygmobolometer. N. B. Potter, Santa Barbara, Calif.—p. 93.
- *Rapidly and Persistence of Action of Digitalis on Hearts Showing Auricular Fibrillation. G. C. Robinson, St. Louis.—p. 121.

Surgical Renal Tuberculosis.—Coincident active pulmonary tuberculosis was found by Braasch in approximately 5 per cent. of his patients, of whom more than 60 per cent. recovered following nephrectomy. Involvement of genitalia was present in at least 73 per cent. of male patients but did not seem to affect the ultimate recovery. Frequency of spontaneous healing of lesions in the prostate and seminal vesicles contraindicates their removal by subsequent operation. Evidence of tuberculosis involving the bones and joints was noted in 6 per cent. of the cases; one half of the lesions were active. The late mortality was 5 per cent. from which it may be inferred that the presence of such complications may be an index of increased resistance. Spondylitis, usually healed, was present in 5.7 per cent., with a mortality of 12 per cent. Tuberculous adenitis was present in nineteen patients (6.4 per cent) and the low mortality (10 per cent.) is suggestive of a heightened resistance. The operative mortality is a negligible factor; the late mortality (five years or less after operation) is approximately 20 per cent.; failure to effect complete cure is approximately 20 per cent.; this leaves a prognosis of recovery in 80 per cent. and of a complete cure to be expected in fully 60 per cent. of patients.

Pharmacology of Certain Drugs.—A number of drugs were studied by Bastedo and some of his findings in the use of the more important ones were as follows: In the ordinary hyperacidity case, with cessation of secretion at the usual time, atropin or belladonna, in maximum doses, either by mouth or hypodermic, had no useful effect on acidity or secretion. In hyperacidity cases atropin had no useful effects in any dosage. In continuous hypersecretion cases it may check the secretion after the digestive period, but it does this in maximum doses only. In pylorospasm it may be useful, but in maximum doses only. In the doses usually employed, it is wholly without effect on the secretory or the motor function of the stomach. In cases of achylia gastrica, whether or not accompanying pernicious anemia, a deficiency of acid may be partially overcome by hydrochloric acid medication. For digestive purposes, hydrochloric acid should always be accompanied by pepsin. In the achylia with diarrhea, acid promises a more noticeable result than in the achylia without diarrhea. When acid produces sourness and stomach irritation, its use should not be continued. To avoid acidosis alkalies should be given during the same period, though not at the same time as the acid, the amount required being judged by the effect on the urine reaction. A bitter is useful as an appetizer for those with subnormal nutrition, as in convalescence from acute illness, provided, that it is taken not more than five or ten minutes before the time for eating. It acts in achylia gastrica as well as in cases with gastric secretion. In subacidity it promotes the secretion of gastric juice. It should be administered in just

sufficient dose to give a strong bitter taste, and not in amounts large enough to have a depressant action in the stomach. If the patient is in a state of normal nutrition, but psychically disturbed about eating, it will be useless. If the appetite is already normal the bitter may not only fail to increase appetite but may even lessen it. If the stomach and bowels are deranged, bitters may nauseate. The effect on appetite is solely the local one on the taste buds, therefore, it cannot be obtained if the bitters are hidden in capsules or coated pills.

Roentgen-Ray Diagnosis of Perinephritic Abscess.—Cases are cited by Fussell and Pancoast to show that the roentgen ray will aid in the diagnosis of perinephritic abscess. In the first case cited, this fluid was demonstrated while the patient was standing in the fluoroscope. The shoulders of the patient were grasped and the patient's body moved quickly two or three times from side to side. Watching the fluoroscopic picture showed a distinct wave in the supposed fluid. The renal region was opened and a huge sac of pus was demonstrated within the capsule of the kidney.

Effects of Diets on Gastric Secretion.—The study made by Crohn and Reiss shows that medical treatment, consisting of restricted diet and rest in bed, causes the cessation of hypersecretion in 45 per cent. of cases, a fair proportion; clinical improvement takes place as often in cases with persistent hypersecretion as in those relieved of their excessive flow of gastric juice, and is apparently not dependent on it. Cases that fail to show clinical and chemical improvement are of two kinds, patients with advanced indurated ulcers which are resistant to treatment and those with a marked neurosis. The first class can be reduced in number by more persistent and more protracted treatment. The second group requires the expert care of a neurologist, often of a psychanalyst. Mistakes in diagnosis undoubtedly form a third group of not inconsiderable proportion. The beneficial effects of medical treatment are seen in those cases of hyperacidity, hypersecretion and pylorospasm accompanying latent cholelithiasis or chronic appendicitis, as well as in ulcer cases or functional secretory disturbances.

Action of Digitalis on the Heart.—This paper was abstracted in THE JOURNAL, Aug. 30, 1919, p. 715.

Archives of Internal Medicine, Chicago

Jan. 15, 1920, 25, No. 1

- *Harmful Effects of Shallow Breathing with Special Reference to Pneumonia. J. Meakins, Montreal.—p. 1.
- *Physiology of Stomach. A. C. Ivy, Chicago.—p. 6.
- *Effect of Roentgen Rays on Metabolism of Cancer Patients. R. N. DeNiord, B. F. Schreiner and H. H. DeNiord, Buffalo.—p. 32.
- *Cerebrospinal Fluid in Multiple Sclerosis. J. E. Moore, Baltimore.—p. 58.
- *Cavity Formation and Annular Pleural Shadows in Pulmonary Tuberculosis. J. A. Honeij, New Haven, Conn.—p. 63.
- Rat Bite Fever: Report of Case. A. Arkin, Morgantown, W. Va.—p. 94.
- Protein and Lipin Contents of Blood Serum in Nephritides. M. Kahn, New York.—p. 112.

Shallow Breathing and Pneumonia.—A number of cases of pneumonia were investigated by Meakins in order to determine the quantity and quality of the expired air. It was found that as the respiratory rate increased there was a gradual decrease in the volume per respiration, but the total ventilation per minute showed a conspicuous increase. Meakins believes that the conclusion is justified that the anoxemia occurring in acute lobar pneumonia is the result of the rapid and shallow breathing typical of this condition.

Physiology of Stomach.—Ivy reports the results of his studies on gastric ulcer, including studies on the pathologic physiology of the stomach and duodenum in the condition of ulcer of these parts of the gastro-intestinal tract.

Roentgen Rays and Cancer.—Of forty-one cases studied by DeNiord and his associates, thirty-four, or 83 per cent., showed a varying excess of total fat in the blood before exposure to the roentgen rays. One-half hour after exposure to the roentgen rays, the first findings were increased in thirteen cases, and decreased in twenty-eight cases. Twenty-four hours after treatment with the roentgen ray, the first findings were increased in six cases and decreased

in thirty cases. Thus, the total fat content was diminished in 83 per cent. of his series of cases after exposure to the roentgen ray, and in some cases the decrease was preceded by a slight rise of the total fat quantity. Urea, urea nitrogen and creatinin showed nothing characteristic of the cancer patient. The moderate uric acidemia which exists for a short period of time after exposure to roentgen rays the others claim is the result of nuclear degeneration, but is not especially characteristic of malignancy. The sodium chlorid content of cancer patients is altered neither by the presence of the tumor nor the exposure to roentgen rays. The cholesterol, fatty acids and total fats are generally increased in cases of malignancy. Cholesterol is increased in the blood, but this is not in proportion to the duration of exposure to the roentgen ray or varied as to the type of tumor. The increase of cholesterol in the blood is probably due to cellular autolysis with liberation of cholesterol, induced by the action of the roentgen rays. Fatty acids and total fats are consistently high in the blood of cancer patients and this increase is reduced by the roentgen rays. The authors do not give any reason or hypothesis for the reduction, as they are at present carrying on further studies along this line. The final conclusion arrived at is that there is nothing in the behavior of the blood sugar or diastatic activity that is diagnostic of cancer. However, the roentgen rays activate the diastase for a short period of time to a greater than normal activity. The plasma and corpuscle percentages were unaltered by the effect of the rays, hence are of no diagnostic value in cancer.

Cerebrospinal Fluid in Multiple Sclerosis.—The cerebrospinal fluid findings in twenty-eight cases of multiple sclerosis are reported by Moore. In twenty cases the diagnosis is clinically certain; in the other eight cases it is clinically doubtful. In the first group, the findings are (a) negative blood and spinal fluid Wassermann (all cases); (b) pleocytosis (eight cases); (c) positive globulin (eighteen cases); (d) paretic gold curve (eighteen cases). In the second group the findings are the same, except for the gold curve, which was syphilitic in three cases and negative in five cases. Together with the clinical evidence, it is believed that the spinal fluid picture is fairly constant, and that, other things being equal, such a picture is a strong argument in favor of a diagnosis of multiple sclerosis. In its absence the diagnosis becomes at least doubtful.

Pulmonary Tuberculosis.—There are three conditions, Honeij says which at times may be confused and which make a differential diagnosis difficult or often impossible. These include (a) true cavitation in pulmonary tuberculosis, with and without fibrous walls; (b) true pleural annular shadows, with and without pulmonary disease; (c) false annular shadows of intrapulmonary bronchial origin, occurring in early pulmonary tuberculosis and other chest conditions. These three conditions are illustrated. A clear understanding of the pathologic processes involved, thorough appreciation of the different clinical signs is needed, and since, in a broad sense, physicians are less interested in the presence or absence of cavitation than in its effect on diagnosis, treatment and prognosis, it is essential carefully to consider other acute or chronic lung lesions in conjunction with the direct evidence of cavitation.

Arkansas Medical Society Journal, Little Rock

January, 1920, **16**, No. 8

Infection Exhaustion Psychoses. C. C. Kirk, Little Rock.—p. 157.
Attitude of Obstetrician to Illegitimate and Mother. G. A. Warren, Black Rock.—p. 158.
Pruritus Ani. E. H. Terrell, Richmond, Va.—p. 162.

Boston Medical and Surgical Journal

Jan. 29, 1920, **182**, No. 5

Calorie as Unit in Figuring Milk Modifications. T. J. Putnam, Boston.—p. 107.
Experience with Schiek Test and Toxin-Antitoxin; Plea for Use in Extinction of Diphtheria. T. E. Lilly, Shirley, Mass.—p. 110.
Psychoses Accompanying Influenza. E. W. Fell, Cincinnati.—p. 113.
Treatment of Gonorrhea in Male. A. H. Crosbie, Boston.—p. 116.
Tissue Injury an Important Factor in Development of Tuberculosis. H. F. Gammons, Dallas, Tex.—p. 119.

Injury of Tissues and Tuberculosis.—Gammons reports four cases in which he believes that injury was an important factor in determining the localization of the tubercle bacilli. Two of the patients fell and injured the knee. Several years later tuberculosis of the knee was diagnosed. In the third case, the patient was kicked by a horse in the vicinity of the right ilium. An abscess formed later and the pus was positive for tubercle bacillus. Tuberculosis of the ilium was found. The same patient injured the right ankle. It, too, became tuberculous. The fourth patient sustained a contusion of the right hand. Tuberculosis of the small bones developed. All of these patients also had a pulmonary tuberculosis.

Indiana State Medical Ass'n Journal, Fort Wayne

Jan. 15, 1920, **13**, No. 1

*Value of Roentgen Ray in Diagnostic Work of Internist. G. W. McCaskey, Ft. Wayne.—p. 1.
Some Fractures of Pelvis. C. Haywood, Elkhart.—p. 8.
*Relative Merits of Surgery, Radium and Roentgen Ray in Treatment of Uterine Fibroids. E. E. Padgett, Indianapolis.—p. 12.
Conservative Surgery. O. O. Melton, Hammond.—p. 14.

Value of Roentgen Ray in Diagnostic Work.—While McCaskey appreciates the value of roentgen-ray examinations and other aids to diagnosis, he emphasizes the fact that these methods never make a complete or rational diagnosis but are simply factors, albeit sometimes indispensable factors, in the general diagnostic judgment. He fears that roentgenologists are often pressingly solicited by physicians for specific diagnostic judgments, and that they too often yield to the importunity when they should make it plain that their duty is done when they give an objective description of their findings. So common has it become for roentgenologists to attempt to arrive at diagnostic conclusions from their studies alone, that it is sometimes difficult to get from them the objective description that one desires, either alone or accompanied by a diagnostic impression. Instead, the reports of "chronic infectious arthritis," "pulmonary tuberculosis," or some other diagnosis come in. McCaskey believes that this unsatisfactory state of affairs will soon be remedied so that roentgenology and internal medicine will reciprocally benefit one another to the utmost.

Surgery, Radium and Roentgen Ray in Treatment of Uterine Fibroids.—This paper was abstracted in THE JOURNAL. Nov. 1, 1919, p. 1390.

Journal of Biological Chemistry, Baltimore

January, 1920, **41**, No. 1

Crystalline Uridinphosphoric Acid. P. A. Levene, New York.—p. 1.
*Determination of Saccharin in Urine. G. S. Jamieson, Washington, D. C.—p. 3.
Thermoregulator with Characteristics of Beckman Thermometer. R. B. Harvey, Washington, D. C.—p. 9.
Determination of Hydrogen Ion Concentration. J. W. M. Bunker, Detroit.—p. 11.
*Identification of Citric Acid in Tomato. R. E. Kremers and J. A. Hall, Madison, Wis.—p. 15.
Structure of Yeast Nucleic Acid. V. Ammonia Hydrolysis. P. A. Levene, New York.—p. 19.
Quantitative Estimation of Indol in Biologic Medium. H. F. Zoller, Washington, D. C.—p. 25.
*Availability of Carbohydrate in Certain Vegetables. W. H. Olmsted, St. Louis.—p. 45.
*Alkaline Reserve Capacity of Whole Blood and Carbohydrate Mobilization as Affected by Hemorrhage. A. L. Tatum, Chicago.—p. 59.
*Hemoglobin. I. Optical Constants. W. H. Welker and C. S. Williamson, Chicago.—p. 75.
Fat-Soluble Vitamin. III. Comparative Nutritive Value of White and Yellow Maizes. H. Steenbock and P. W. Boutwell, Madison, Wis.—p. 81.
*Protein Requirement of Maintenance in Man and Nutritive Efficiency of Bread Protein. H. C. Sherman, New York.—p. 97.
Effect of Iodids on Autolysis of Liver Tissue. P. G. Albrecht, Chicago.—p. 111.
Chemical Study of Blood of Several Invertebrate Animals. R. G. Myers, Palo Alto, Calif.—p. 119.
Chemical Study of Whale Blood. R. G. Myers, Palo Alto, Calif.—p. 137.

Determination of Saccharin in Urine.—The method described by Jamieson is based on the quantitative extraction of the saccharin with ether from the acidified urine which had been previously treated with normal lead acetate and filtered. After acidifying with hydrochloric acid, the saccharin is extracted by ether, the ether removed by evapora-

tion, and the saccharin extracted from the residue with ether. The ether is removed and the resulting residue is fused with sodium carbonate and the sulphur determined as barium sulphate. The amount of saccharin is calculated from the sulphur found after making a correction for the blank. The experimental results obtained by the analysis of urines, to which known amounts of saccharin had been added, show that the method is capable of giving satisfactory results, providing that the directions are followed exactly as described in every detail.

Citric Acid in Tomato.—The presence of citric acid in tomato juice was shown by Kremers and Hall by means of its triphenacyl ester.

Carbohydrate in Certain Vegetables.—Vegetables usually used in low carbohydrate diets for diabetic patients were analyzed by Olmsted by the use of diastase and copper reduction, and by feeding to phlorizinized dogs. The results are given in detail.

Effect of Hemorrhage on Alkaline Reserve and Blood Sugar.—The results of the experiments described by Tatum appear to indicate that hemorrhage produces a rise in blood sugar by changes in the state of acid-base balance in body cells, which state is fairly well reflected in corresponding changes in the general circulation. The chief seat of action is probably the liver, for this is the location of glycogen storage most readily affected.

Hemoglobin as Means of Identifying Species.—From the results obtained by Welker and Williamson, it would appear that there is not sufficient difference in the absorption coefficients of the hemoglobin of various species to serve as a means of identification of the species. This finding confirms the conclusions of most previous investigators.

Protein Requirement of Maintenance.—Sherman states that even when the protein of the food is almost entirely derived from bread or other grain products, with a diet adequate in energy value, a daily intake of about 0.5 gm. of protein per kilogram of body weight is sufficient to meet the actual requirements of maintenance in healthy men and women. While, if numerous older experiments, having a tendency to high results, are included, the average is somewhat less than 0.66 gm. of protein per kilogram of body weight. A standard allowance of 1 gm. of protein per kilogram of body weight per day appears, therefore, to provide a margin of safety of from 50 to 100 per cent., as far as the requirements of adult maintenance are concerned. It is plainly desirable in all cases, that grain products be supplemented by milk products, and it is clear that in providing for needs of growing children and of pregnant or nursing mothers the proportion of milk in the diet should be more liberal than it need be when only maintenance is concerned; this both because of the superior amino-acid make-up of the milk proteins and to provide amply for the mineral elements and vitamins as well.

Journal of General Physiology, Baltimore

Jan. 20, 1920, 2, No. 3

- Action of Strychnin and Nicotin on Neuromuscular Mechanism of Asterias. A. R. Moore, New Brunswick, N. J.—p. 201.
Studies on Bioluminescence: Action of Acid and of Light in Reduction of Cypridina Oxyluciferin. E. N. Harvey, Princeton, N. J.—p. 207.
Studies on Enzyme Action: Saccharogenic Actions of Potato Juice. G. McGuire and K. G. Falk, New York.—p. 215.
Photochemical Nature of Photosensory Process. S. Hecht, Omaha.—p. 229.
Free Energy of Biologic Processes. G. A. Linhart, Berkeley, Calif.—p. 247.
Apparatus for Measurement of Oxidase and Catalase Activity. R. B. Harvey, Washington, D. C.—p. 253.
Influence of a Slight Modification of Collodion Membrane on Sign of Electrification of Water. J. Loeb, New York.—p. 255.
Influence of Concentration of Electrolytes on Some Physical Properties of Colloids and of Crystalloids. J. Loeb, New York.—p. 273.
Quantitative Laws in Regeneration. J. Loeb, New York.—p. 297.

Saccharogenic Action of Potato Juice.—The saccharogenic enzymes present in potato juice were studied by McGuire and Falk. The actions were followed on the substances present in the juice and on added sucrose, maltose and soluble starch. Sucrase and amylase were found to be present in the juice. No indication of a maltase was

obtained. The sucrase showed optimum conditions for action at pH 4 to 5, the amylase at pH 6 to 7, both on the starch present in the juice and on added soluble starch. The action of a yeast sucrase preparation on the juice showed the presence of sucrose (or raffinose) in a concentration of the order of magnitude of 1 per cent

Journal of Industrial Hygiene, Boston

January, 1920, 1, No. 9

- *Syphilis in Railroad Employees. J. H. Stokes and H. E. Brehmer, Rochester, Minn.—p. 419.
Proper Executive Function of Industrial Physician. D. R. Kennedy and R. M. Neustadt, Philadelphia.
Prevention of Fatigue in Manufacturing Industries. R. A. Spaeth, Baltimore.—p. 435.
Organizing an Industry to Combat Influenza. C. E. Turner, Boston.—p. 448.
Home Work. Emma Duke, Washington, D. C.—p. 452.
Sanitation of Industrial Water Supplies. G. M. Fair, Cambridge, Mass.—p. 457.

Frequency of Syphilis Especially in Railroad Employees.—A general medical examination of 1,763 patients of the Mayo Clinic showed that 3.1 per cent. had syphilitic infections obvious enough to be detected without the use of the routine Wassermann test. The lowness of these figures Stokes and Brehmer contend, reflects, to some extent, the weakness of clinical judgment in the recognition of this disease as compared with current figures based on the routine Wassermann test. Part of the lowness of these figures is attributable to the large farming element in the clientele of the clinic and to the low incidence of venereal diseases in the states from which most of the patients are drawn. Of the railroad employees examined, 11.7 per cent. had syphilis. The disease was eight times as frequent in them as in farmers (1.5 per cent.), three times as frequent in them as in business men (3.8 per cent.), and twice as frequent as in laborers (6.1 per cent.). The doubtful value of the history of the infection and the blood Wassermann test in the recognition of these cases is shown by the fact that 24 per cent of the patients gave no history of infection other than gonorrhea; 62.5 per cent. had observed no secondary manifestations, and 53 per cent. were completely Wassermann negative on the blood. On the other hand, 64 per cent. of those whose spinal fluids were examined showed positive findings. Of the diagnoses, 58.7 per cent. were contributed by laboratory procedures; 41.3 per cent. were identified by routine physical examination. Of the men examined, 79.5 per cent. had syphilis of the nervous system; 18.7 per cent. had cardiovascular syphilis. Pupillary abnormalities, muscular paralyses and fundus changes were present in 62.5 per cent. of the cases. Of the persons examined, 65.1 per cent. showed abnormal knee reflexes, and similarly high percentages prevailed for the other simpler details of the neurologic examination. Definite mental symptoms were present in 38.4 per cent. These findings suggest that the routine railroad medical examination is insufficient to protect the public from the dangers of syphilis in men concerned in the operation of the trains. Three suggestions are made with a view to increasing the efficiency of the railroad medical examination, with respect to the recognition of syphilis: First, routine Wassermann tests should be performed on all employees between the ages of 17 and 25 by a competent state board of health laboratory, and repeated on all employees reaching 32 years of age. Second, there should be annual effective examination of men between the ages of 25 and 40, rather than of men over 50. Such examinations should include more attention to pupillary reactions than is at present given, and should employ those fundamentals of the neurologic examination, such as tests of the deep reflexes, Romberg, etc. These can readily be performed by competent general examiners. Third, formal educational propaganda should be undertaken by railroad medical departments for the education of medical examiners and employees alike to the great significance of syphilis in industrial insufficiency and personal ill health.

Journal of Medical Research, Boston

November, 1919, 41, No. 1

- *Studies on Rocky Mountain Spotted Fever. S. B. Wolbach, Boston.

Rocky Mountain Spotted Fever.—It is impossible to abstract briefly the results of the extensive and detailed study made by Wolbach. All phases of the subject are discussed. The conclusions as to the parasite itself are these: three definite morphologic types of the spotted fever parasite can be recognized: (1) An extranuclear bacillus-like form without chromatoid granules, relatively large and only present in ticks during the initial multiplication of the parasites; (2) a relatively small rod-shaped form with chromatoid granules, probably the same form seen within nuclei in sections of ticks, and rarely in smooth muscle cells of the blood vessel of mammals; and (3) a relatively large lanceolate paired form present in ticks and in the blood and tissues in mammals. This lanceolate form is characterized by its "chromatoid" staining reaction, and according to the evidence at hand, is the form in which the virus is passed between the tick and mammalian hosts. The other two forms described are multiplicative stages, and can only be demonstrated occasionally and with difficulty in mammalian hosts. The name *Dermacentrolexenus rickettsi* is proposed by Wolbach for this parasite.

Journal of Urology, Baltimore

August, 1919, 3, No. 4

Operative Treatment of Seminal Vesiculitis. J. H. Cunningham, Boston.—p. 175.
Etiology of Vesical Diverticulum. F. Hinman, San Francisco.—p. 207.
Histologic Study of Ureter. Y. Satani, Baltimore.—p. 247.
Colliculus Seminalis at Birth: Origin, Development and Zonal Distribution of Its Gland Tubules. E. M. Watson, Buffalo.—p. 269.
Simple Apparatus for Continuous and Automatic Bladder Irrigation. F. Hinman, San Francisco.—p. 281.

Operative Treatment of Seminal Vesiculitis.—Cunningham discusses the relationship between infections of the prostate and the seminal vesicles and arthritis, and the surgical treatment of these infections.

Etiology of Vesical Diverticulum.—In Hinman's opinion, vesical diverticulum is the result of anatomic, pathologic and mechanical factors in the vast majority, if not all, instances, and in this sense is always an acquired condition. A mild and chronic urinary obstruction, in association with the necessary anatomic or pathologic predisposing conditions of the bladder wall, is particularly conducive for the development of diverticula. Median bar formation is one of the most frequent types of obstruction.

Kentucky Medical Journal, Bowling Green

January, 1920, 18, No. 1

Centennial of Medico-Chirurgical Society of Louisville. L. S. McMurtry, Louisville.—p. 3.
Acute Mastoiditis. W. B. McClure, Lexington.
Surgery of Thyrotoxicosis. L. Wallace Frank, Louisville.—p. 10.
Modern Day Diagnosis. L. L. Solomon, Louisville.—p. 15.
Some Phases of Diseased Gallbladder and Bile Duct. H. H. Grant, Louisville.—p. 22.

Laryngoscope, St. Louis

December, 1919, 29, No. 12

Intracranial Infections Complicating Mastoiditis. S. J. Kopetsky, New York.—p. 679.
Nature and Origin of Stammering. E. L. Kenyon, Chicago.—p. 700.
Nucleation of Tonsils; Local Anesthesia. E. G. Gill, Roanoke, Va.—p. 715.
Hoarseness Caused by Thyro-Arytenoid Interni Paresis, with Symptoms Simulating Acute Pulmonary Tuberculosis Due to a Sinus Infection. E. L. Myers, St. Louis.—p. 720.

Maine Medical Association Journal, Portland

January, 1920, 10, No. 6

Treatment of Pneumonia. L. L. Powell, Portland.—p. 159.
Education and Recreation in Army. W. G. Haan, U. S. Army.—p. 178.

Medical Record, New York

Dec. 27, 1919, 96, No. 26

Jeané Theophile Hyacinthe Lacnec. S. A. Knopf, New York.—p. 1039.
New Technic (Diet and Roentgen Ray) in Treatment of Cancer. F. R. Cook, New York.—p. 1042.
Christian Science Psychosis. E. H. Williams, Los Angeles.—p. 1048.
Proposed Compulsory Health Insurance Law. Its Injustice to Physicians, Dentists and Pharmacists. J. J. Kindred, River Crest, L. I.—p. 1050.
Posture in Defecation. L. D. Bulkley, New York.—p. 1053.

Jan. 3, 1920, 97, No. 1

Hysterical Symptoms. T. A. Williams, Washington, D. C.—p. 1.
Value of Laboratory Examinations in Diagnosis and Prognosis in Otolaryngology. S. Oppenheimer and H. J. Spencer, New York.—p. 7.
Function and Clinical Uses of Pineal Gland. W. N. Berkeley, New York.—p. 12.
Heredity as Factor in Etiology of Neoplasms. V. H. Moon, Indianapolis.—p. 14.
*Deterioration of Cardiovascular Stimulants; Means of Preserving and of Increasing Their Therapeutic Efficiency. E. Zueblin, Cincinnati.—p. 16.

Preserving and Increasing Therapeutic Efficiency of Cardiovascular Stimulants.—Zueblin urges that proper instruction of the wholesale and retail druggists ought to be encouraged on the subject of deterioration of chemicals and pharmaceutical preparations. In Zueblin's experience, fermentative processes in the organic drugs cannot be discarded entirely as a possible cause of these changes. Whenever possible, he says, use fresh drugs, freshly prepared, they will serve the purpose better for securing help and improvement to the patients. The old and shopworn preparations, after a more or less prolonged existence of oblivion in the drawers or in the form of old solutions, will be called on in vain to save a patient's life. In his experimental work, Zueblin incidentally detected a possibility of increasing the therapeutic efficiency and electric radiation of drugs by a short exposure of various remedies to the passage of electric waves. The practical methods of such a process are still a subject of studies and experimentation, but this much can be said, that the "life period" of the drugs can be raised to several months, and even years. Equally, there seems to exist a possibility of imparting new life to dead pharmaceutical preparations and compounds, and by doing so to restore and increase pharmacodynamic activity.

Jan. 10, 1920, 97, No. 2

Motility in Animal Organism. E. H. P. Ward, White Plains, N. Y.—p. 47.
Surgical Disorders of Digestion. W. D. Haines, Cincinnati.—p. 58.
What Has the War Taught Us of Tuberculosis? S. J. Maher, New Haven, Conn.—p. 60.
Heliotherapy in Tuberculosis. J. B. Dinman, Meriden, Conn.—p. 62.
*Treatment of Influenza by an Apparently Specific Method. F. E. Park, Stoneham, Mass.—p. 66.

Treatment of Influenza.—Park injects intravenously sodium salicylate, soluble iron phosphate and beechwood creosote in lime water. Physiologic sodium chlorid solution is the vehicle used.

Minnesota Medicine, St. Paul

February, 1920, 3, No. 2

The Clinician and Research. W. W. Herrick, New York.—p. 47.
Epidemic Lethargic Encephalitis. C. E. Riggs, St. Paul.—p. 49.
*Treatment of Urethral Caruncle. J. L. Crenshaw, Rochester, Minn.—p. 54.
Diagnosis and Treatment of Peripheral Nerve Injuries. A. F. Bratrud, Minneapolis.—p. 57.
Clinical Course and Pathology of an Obscure Osteitis Causing Loose Bodies in Joints. A. R. Colvin, St. Paul.—p. 65.
A Neisser: Syphilitic Outlook. A. A. Baker, Minneapolis.—p. 69.
Early Diagnosis and Treatment of Acute Inflammations of the Eye. E. W. Benham, Mankato.—p. 73.
Medicine, Forty Years Ago; Glances in Retrospect; Comparison with Later Periods. W. Courtney, Brainerd.—p. 76.
Diphtheria T-A (Toxin-Antitoxin). C. B. Drake, St. Paul.—p. 81.

Treatment of Urethral Caruncle.—Under cocain anesthesia, Crenshaw clamps the caruncle, and cuts it off close to the upper surface of the clamp. The cut surface is thoroughly seared with acid nitrate of mercury solution applied with a wooden applicator. All tags are removed in the same manner. Symptoms are relieved almost immediately.

Modern Hospital, Chicago

January, 1920, 14, No. 1

High Hospital Building Proves a Success. E. Stotz.—p. 1.
Air Control and Reduction of Death Rate After Operations. F. Huntingdon, New Haven, Conn.—p. 10.
Entertaining Sick and Convalescent Children in Hospital and at Home. M. H. Barker, Worcester, Mass.—p. 15.
Plea for Education for Young Men as Nurses. B. F. Bailey, Lincoln, Neb.—p. 18.
New Brockton Hospital Building Represents Result of Three Years' Study. L. B. Packard, Brockton, Mass.—p. 20.
Management of Contagious Disease Hospitals. D. L. Richardson, Providence, R. I.—p. 30.
Development of Hospital Organization in Canada. M. T. MacEachern, Vancouver, B. C.—p. 33.

Modern Medicine, Chicago

January, 1920, 2, No. 1

- *Underlying Causes of Narcotic Habit. A. Lambert, New York.—p. 5.
Occupational Therapy and Vocational Guidance for the Tuberculous. H. A. Pattison, New York.—p. 10.
Medical Service of Illinois State Institutions Under New Code. A. L. Bowen, Springfield, Ill.—p. 17.
Standards of Public Maternity Care. H. Ehrenfest, St. Louis.—p. 27.
Application of War Surgery to Industrial Practice. D. Hinton, Philadelphia.—p. 38.
Physician and Surgeon in Industrial Crisis. O. P. Geier, Cincinnati.—p. 41.
Eye Injuries. F. C. Trebilcock, Toronto, Can.—p. 46.
Trachoma in Camps and Hospitals of U. S. Army; B. Chance, Philadelphia.—p. 60.
*Handshaking as Route of Infection. H. W. Hill, St. Paul.—p. 72.

Underlying Causes of Narcotic Habit.—These causes, Lambert says, must be sought for in the psychology of a personality unable or unwilling to face individual problems, difficulties, disappointments or defeats. In such cases an anodyne is demanded to bolster up the ego or to afford escape from painful experience. Solve the personal problem and the individual is freed from the need of narcotic forgetfulness.

Handshaking as Route of Infection.—The general conclusion of most practical observers has been that the route of hand infection is the great pathway of infection, and is responsible for perhaps 90 per cent. of all contact infection, medical or surgical, except the venereal diseases. While the handshake does not rank with kissing in directness, it is not confined, like kissing, to the exchange of nasal or oral discharges, but includes the discharges of the bowel and bladder. Moreover, the hands are so constantly infected and handshaking is so constantly repeated that, in the long run, Hill says, it probably eclipses the relatively less common and less promiscuous kissing in its sum total damage.

New York Medical Journal

Jan. 10, 1920, 111, No. 2

- Hysterical Vomiting. A. F. Hurst, London.—p. 45.
Errors in Present Day Abdominal Diagnosis. J. B. Deaver, Philadelphia.—p. 49.
Vaccine Antitoxin Method in Treatment of Diphtheria. F. M. Wood, Chicago.—p. 53.
Repairs Following Labor. W. E. Parke, Philadelphia.—p. 54.
Asthma Caused by Insufficiency of Pylorus. M. I. Knapp, New York.—p. 55.
Poland in World War from Medical Aspect. F. E. Fronczak, Buffalo.—p. 59.
Radical Operation for Cholesteatomatous Mastoiditis. O. Glogau, New York.—p. 64.
The Blood Pressure Vogue. D. Nathan, Norristown, Pa.—p. 67.
Sarcoid Tuberculosis of Skin. C. G. Cumston, Geneva, Switzerland.—p. 67.

Philippine Journal of Science, Manila

June, 1919, 14, No. 6

- Mechanical Properties of Philippine Bast-Fiber Ropes. A. E. W. King, Manila.—p. 561.
Pink Disease of Citrus Trees. H. A. Lee and H. S. Yates, Manila.—p. 657.

Southern Medical Journal, Birmingham, Ala.

January, 1920, 13, No. 1

- Work of Medical Department During War. M. W. Ireland, M. C., U. S. Army.—p. 1.
National Research Council. H. A. Christian, Boston.—p. 3.
Status of Amebic Dysentery: Diagnosis and Treatment. R. Lyons, New Orleans.—p. 4.
Otitis Media. L. T. Royster, Norfolk, Va.—p. 10.
Doubts, Differences and Difficulties in Diagnosis of Gastro-Intestinal Diseases. J. C. Johnson, Atlanta.—p. 14.
Facts and Fallacies Relating to Maternal Feeding of Infants. J. D. Love, Jacksonville, Fla.—p. 16.
Prevalence of Ameba, *Cercomonas Intestinalis-Hominis*, and Pellagious Infections in the South. J. L. Jelks, Memphis.—p. 22.
Problems in Control of Acute Infectious Diseases in Army. F. F. Russell, M. C., U. S. Army.—p. 29.
*Sanitary Social Service Based on Experience with Bureau of Venereal Diseases. M. Board, Louisville.—p. 37.
Lessons from War. J. M. T. Finney, Baltimore.—p. 40.
Medical Profession in War: Its Sacrifices and Compensations: Humanity's Gains. J. L. Crook, Jackson, Tenn.—p. 46.
Fracture of Lower End of Humerus. C. A. Vance, Lexington, Ky.—p. 50.
*New Operation for Suspension of Uterus. F. G. Dubose, Selma, Ala.—p. 57.

- Scientific Team Work in Diagnosis and Treatment of Diseases of Eye, Ear, Nose and Throat. E. H. Cary, Dallas, Tex.—p. 62.
Team Work in Practice of Otolaryngology. J. A. Stucky, Lexington, Ky.—p. 65.

Sanitary Social Service.—With more syphilis now in this country than tuberculosis; with blind asylums filled with children as a result of gonorrhea; with women unsexed and their nervous systems shattered as the result of gonorrhea, usually contracted from their husbands; with paresis, which a hundred years ago was a medical curiosity but which is now filling insane hospitals with cases of locomotor ataxia and cerebrospinal syphilis, constituting a great part of the work of the modern neurologist, is it not time, asks Board, that the doctor, the lawyer, the minister, the teacher, the Women's Federation and the legislative bodies awake to the appalling facts of this situation and begin in a rational, thorough manner the eradication of venereal disease?

New Operation for Suspension of Uterus.—DuBose describes his method as follows: A linen or silk thread, on a full curved needle, is carried through the broad ligament as a running stitch, close to and immediately underneath the round ligament, beginning at the internal abdominal ring, carried across the fundus of the uterus, engaging superficially under the peritoneal coat, passing underneath the opposite round ligament until the other internal ring is reached. The needle is unthreaded and a ligature carrier is passed through the aponeurosis of the rectus muscle about one inch from the abdominal incision, and on a level with the internal abdominal ring, through the musculature of the anterior abdominal wall until it emerges from the parietal peritoneum at the internal abdominal ring. The linen suture is threaded on the carrier and drawn through the abdominal wall. The same technic is carried out on the opposite side. Then both ends of the thread are caught, and the uterus is pulled up into the desired position. Two hemostats are applied to the thread; one on either side, where it emerges from the aponeurosis of the rectus muscle. The peritoneum is then closed, the aponeurosis of the rectus muscle is sutured, and while the forceps are still in position, the linen suspension thread is tied. The placing of the forceps as described prevents the drawing too tightly on the suspension suture, which would bring the uterus too far forward, and possibly so narrow the space between the uterus and abdominal wall as to result in hernia or obstruction. The hemostats are removed after the tying of the suspension suture. The closure of the abdominal skin incision is then completed.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 10, 1920, 1, No. 3080

- *Surgical Aspects of Spinal Tumors. P. Sargent.—p. 38.
Public Health versus The State. B. G. M. Baskett.—p. 40.
Scleroderma: Two Cases. F. H. Barendt.—p. 44.
*Meningitis Treated by Intrathecal Injections of Patient's Blood Serum. R. Waterhouse.—p. 45.
Forgetting: Psychologic Repression. A. Carver.—p. 46.

Surgical Aspect of Spinal Tumors.—Twenty-seven cases of true neoplasm of one sort or another, associated with cord symptoms, are analyzed by Sargent. Fifteen were cases of encapsulated intrathecal extramedullary tumors, all benign except one, a fibrosarcoma. In no case was the tumor situated above the fifth cervical or below the eleventh thoracic segment. The tumors were enucleated. Of these patients six are (or when last heard of were) doing their full ordinary work; one patient, 77 years of age, is in perfect health and vigor, and the other four are so far recovered that they may reasonably be regarded as successful cases. Of the four unsuccessful results, one (whose paralysis had existed for nine years before operation) remains virtually in statu quo, five and one half years after removal of the tumor. The remaining three patients died. In twelve of the twenty-seven cases the tumors were of a malignant character.

They were intrathecal extramedullary; intramedullary and extrathecal. In none of the twelve cases of malignant growth in this series was the exact nature of the case diagnosed before operation. The fact that the cord was being subjected to an increasing degree of compression led in each instance to the performance of an exploratory laminectomy, and in all but one the diagnosis of "tumor" was made before operation (one was thought to be a tuberculous caries); in all, too, the segmental level of the compression was correctly ascertained before operation. But in no instance could the exact position with relation to the cord and membranes, or the nature of the tumor be foretold. The operations were, therefore, primarily of an exploratory character. Two patients, one with a high cervical intramedullary tumor, and the other with a sarcoma of bone in the upper dorsal region, died within a few hours of the operation. Of the remaining ten patients, three were not benefited, seven were benefited to a variable degree. One patient lived seven years after operation and one lived six and one-half years after operation. Others were lost to further observation.

Autoserumtherapy in Meningitis.—Waterhouse's patient had cerebrospinal meningitis. The symptoms became aggravated and finally 20 c.c. of the patient's own blood serum were injected into the subarachnoid space by lumbar puncture after removal of the same quantity of cerebrospinal fluid. This procedure was repeated on the three following days with 12 c.c. of serum and on the fifth day 5 c.c. of serum were injected. Improvement set in from the time of the first injection and convalescence was rapid.

Jan. 17, 1920, 2, No. 3081

Treatment and Management of Diseases Due to Deficiency of Diet: Scurvy and Beri Beri. W. H. Willcox.—p. 73.
Aims and Methods of Graduate Study. R. Rolleston.—p. 77.
Uses of Free Transplants of Fascia Lata in Surgery. G. G. Turner.—p. 79.

*Acute Abdominal Cases. J. L. Stretton.—p. 80.

Acute Abdominal Cases.—Stretton reports a case of pedunculated polypoid adenoma attached to the posterior wall of the stomach about 1 inch inside the pyloric orifice. The tumor was removed. The patient made an uneventful recovery. A second case was one of large hemorrhage into the wall of the cecum between the muscular and mucous coats. The result was what appeared to be a large cyst. During the appendectomy which was performed at the same time, the cyst burst and nearly two pints of blood escaped. The cause of the hemorrhage is believed to have been a strain endured during the moving of some heavy objects. The third case was one of ovarian cyst which contained 6½ gallons of fluid.

Dublin Journal of Medical Science

December, 1919, No. 576

*Cause of Eclampsia. H. Tweedy.—p. 225.
*Case of Congenital Syphilis. J. Moore.—p. 229.

Cause of Eclampsia.—The basis of Tweedy's theory is that ordinary food becomes poisonous during pregnancy, and when in this condition it gives rise to toxemia and eclampsia.

Congenital Syphilis.—Moore cites the case of a girl, aged 12 years, the victim of congenital syphilis, who was treated successfully with Donovan's solution (liquoris arseni et hydrargyri iodidi, 8 c.c.; syrupi aromatici, 24 c.c.; aquae, 210 c.c.), one-half ounce, taken three times daily, after meals. He says "in these days of salvarsan, neo-salvarsan, khar-sivan, soamin, and other organic compounds too numerous to mention, and of the combined salvarsan and mercurial treatment of syphilis, we are perhaps too apt to forget older and no less effective means of combating and defeating the spirochete."

Edinburgh Medical Journal

January, 1920, 24, No. 1

Influence of Edinburgh on M'Gill University. J. Meakins.—p. 5.
Binet Scale for the Blind. W. B. Drummond.—p. 16.
*Beri Beri Among Chinese in France. A. R. Leggate.—p. 32.

Beriberi.—Two hundred and sixty-nine cases were observed by Leggate. Of these, 200 patients showed edema of the legs and body, forty-six of these showed no other

symptom. One hundred and eighty-three had loss of deep reflexes, and of these, seven had no other symptom. One hundred and fifty-five had paresthesia, nine of these without any other symptom. Inability to rise from a squatting position without the aid of the hands or other assistance was a striking symptom in some of the cases. In the dry type of case, it was the rule—66 per cent.; in the wet type, it was the exception—6.5 per cent. When the edema was marked, Leggate used purgatives. A saturated solution of magnesium sulphate, with 15 minims of dilute sulphuric acid to the ounce of solution, was his favorite. An important point in the treatment emphasized by him is to discontinue the polished rice diet and to administer eggs, beans, yeast and peas.

Glasgow Medical Journal

January, 1920, 11, N. S.

*Prenatal Tuberculosis. J. W. Allan.—p. 1.
*Is Fat Starvation a Causal Factor in Production of Rickets? H. S. Hutchison.—p. 8.
Sores, Analogous to Veld Sores and Barcoo Rot, Appearing Among Soldiers Working in Blue Clay and in Chalk. D. D. Logan.—p. 13.

Prenatal Tuberculosis.—Allan defends the proposition that a child may be born tuberculous; in fact, he believes that antenatal tuberculosis is more common than is generally supposed.

Fat Starvation as Cause of Rickets.—Hutchison's observations lead him to the belief that in rickets there is no fat starvation, and that the excessive loss of calcium in this condition is not brought about through the agency of fat. This conclusion is supported by the fact that the average daily excretion of soaps in rickets was 2.2 gm., as compared with 2.5 gm. in health. Fat could only remove calcium as an insoluble soap, and as there is no increase in soaps in rickets, there is evidently no connection between the calcium loss in rickets and the fat excretion.

Journal of Tropical Medicine and Hygiene, London

Jan. 1, 1920, 23, No. 1

Bronchomoniliasis in Anglo-Egyptian Sudan and Egypt. A. J. Chalmers.—p. 1.
Vibriothrix Zeylanica (Castellani). L. Anigstein.—p. 7.

Lancet, London

Jan. 10, 1920, 1, No. 5028

Surgery of Heart. C. Ballance. To be concluded.—p. 73.
Malaria in Egyptian Expeditionary Force. P. Manson-Bahr.—p. 79.
Diverticulitis. W. H. M. Telling.—p. 85.
*Feeding Infants on Dried Milk. V. Borland.—p. 89.
*Means of Lessening or Eliminating Alimentary Toxemia. R. Chetham-Strode and J. D. Benjafield.—p. 91.
Paratyphoid B Group. H. Schutze.—p. 93.

Feeding Infants on Dried Milk.—Borland suggests that it would be an infinitely better plan to feed a baby in relation to its weight than by calculating quantities of feeds according to age alone. This method has produced very satisfactory results in Willesden, where it has now been practiced for more than two years. The present scale is based chiefly on a full cream dried milk which has been modified to resemble human milk, but others not so modified have answered satisfactorily when given according to scale. The investigation was carried out primarily on sixty-nine babies of ages ranging from 3 weeks to 8½ months. The smallest feed which produced a satisfactory gain, the baby otherwise being in good health, was chosen from the clinic cards and noted. In this way 188 feeds at various weights were obtained. It has been Borland's practice to arrange breast feeding at intervals of three hours, three and one-half hours and four hours, according to the age of the child and the progress made. The four hourly intervals are begun as early as possible. In the case of the three hourly intervals the number of feeds given in the twenty-four hours is six, in three and one-half hourly intervals, and in four hourly intervals five feeds are given daily. It was found that by adding the number 9 to the weight, if below 7 pounds and the number 10 to the weight from 7 to 16 pounds, inclusive, the required number of level teaspoonfuls of dried milk to be given in twenty-four hours was obtained. Working tables are given.

Eliminating Alimentary Toxemia.—Assuming that a lactic acid fermentation in the large intestine is the condition to be aimed at in the control of an alimentary toxemia, Strode and Benjafield administer the carbohydrates in the form of coarse uncrushed oatmeal. This may be taken raw or cooked sufficiently to soften the outside of the grain, only leaving behind a hard core. The result is that the partially digested grain reaches the large intestine in the form of carbohydrate. The center of the grain is composed of unaltered starch, while the outer layers, which have been subjected to the digestive action of the juices of the mouth, stomach and small intestine, are composed of simpler molecules, the disaccharids and hexoses. Both these latter can rapidly be converted into lactic acid and carbon dioxide by a suitable bacterial flora. One of the authors has been combining this course of treatment with the ordinary symptomatic methods in his practice for the last fifteen years. Failures have been met with, but they have all been failures in that the lactic acid fermentation could not be obtained. In all cases where this fermentation has been established the condition of the patient has been materially improved. Cases are cited.

Quarterly Journal of Medicine, London

January, 1920, 13, No. 50

- *Cases of Hematuria of Unusual Origin. T. I. Bennett and C. H. S. Frankau.—p. 195.
- *Action of Chlorin, Etc., on Bronchi. J. A. Gunn.—p. 121
- Effects of Multiple Embolism of Pulmonary Arterioles. J. S. Dunn.—p. 129.
- *Unilateral Alterations in Blood Pressure Caused by Unilateral Pathologic Conditions: The Differential Blood Pressure Sign. E. F. Cyriax.—p. 148.
- Numerical Measurement of Dyspnea. G. H. Hunt and D. Dufton.—p. 165.
- *Treatment of Chronic Cases of Gas Poisoning by Continuous Oxygen Administration in Chambers. J. Barcroft and D. Dufton.—p. 179.
- Mustard Gas Poisoning. C. M. Wilson and J. M. Mackintosh.—p. 201.

Hematuria of Unusual Origin.—In the cases reported by Frankau, the onset was usually sudden, with fever rising to 100 or 102 F. The patient complained of pains in the shins and along the radial border of the forearms; headache was slight; there were often slight pains in the back. The respiratory, circulatory and alimentary systems showed only those changes which are common to all mild febrile diseases. In one case, the headache was so severe, and pain in the spine so marked, that meningitis could not be excluded on admission. A lumbar puncture was performed and a few drops of normal cerebrospinal fluid were collected; but in no other case were there symptoms or signs of any involvement of the nervous system. Sometimes, on the first day, invariably within a few days, there was marked hematuria; at the same time a slight dysuria was added to the other symptoms. In several cases it was the hematuria alone that led the patient to seek medical aid. After a few days, the hematuria disappeared, although, microscopically disintegrated red cells, pus cells and epithelial debris were still to be found in the urine. But the symptoms persisted, lumbar pain and dysuria became more prominent, and the shin pains were often sufficient to prevent sleep. A labial herpes was observed several times on about the fifth day. The initial temperature fell to normal, but rose again after, at most, a few days. Often there were sharp relapses, such as are commonly seen in cases of trench fever; in other cases the pyrexia developed into a hectic type, with morning remissions.

Action of Chlorin on Bronchi.—Generally, the results of experiments with chlorin showed that inhalation of 1:5,000 up to 1:1,000 produces an increased rate of respiration with a transient bronchoconstriction. This bronchoconstriction, Gunn believes, is produced reflexly by the first contact of the irritant vapor with the bronchial mucous membrane. It lasts such a short time that therapeutic measures to combat it would be unavailing. A subsequent sudden increase in the concentration of the gas produces thereafter an apparent slight and gradual bronchoconstriction, but from histologic observations it appears probable that this is due rather to edema of the bronchial mucous membrane than to contraction of the bronchial muscle.

Unilateral Alterations in Blood Pressure.—According to Cyriax, the differential blood pressure sign (differences

between the readings in the two arms) is nearly always present in unilateral or bilaterally unequal traumatism of operations. As regards the maximum pressures, differences of 10 mm. are found in about 83 per cent. and of 20 mm. or over in about 12 per cent. of all cases. As regards the minimum pressures, similar differences are found respectively in 81 per cent. and 20 per cent.

Treatment of Chronic Cases of Gas Poisoning.—Twenty-six patients were treated by the continuous administration of oxygen. The patients were placed in chambers in which the percentage of oxygen aimed at, and usually maintained, was between 40 and 50. The usual term of residence was five days, sixteen or seventeen hours of each day being spent in the chambers. The night was always spent in them. The effect on the red cell count was as follows: if the red cell count was markedly higher than 5 millions, it was reduced by residence in oxygen, usually to just about that figure; if the red count, as was often the case, especially with mustard gas, was not raised above 5 millions, residence in oxygen did not alter it. The subsequent history of cases differs: in some the red count tends to rise, in others it remains nearly normal at the end of two and one-half months. As the red count fell, there was usually a fall—but a much slighter one—in the hemoglobin. The color index, therefore, rose. An almost constant sign in the gassed cases studied has been a failure on the part of the pulse to return normally after exercise to its resting rate. This condition has been benefited by the oxygen treatment in nearly all cases; and in about half it was brought to—or almost to—the normal condition. Of fourteen patients treated, six suffered from nocturnal attacks of dyspnea. None of these had attacks in the chamber; three appeared to be cured permanently, and two others were permanently benefited. The patients all stated that they were able to walk faster and with less distress than before the treatment. In the second series of cases a definite test for dyspnea was introduced, in which the opinion of the patients was not involved. Of the six patients thoroughly tested, four increased the quantity of work which they could do with a given degree of breathlessness by over 20 per cent. and two others by over 10 per cent.

South African Medical Record, Cape Town

Dec. 13, 1919, 17, No. 23

Syphilis. B. Bernstein.

Bulletin de l'Académie de Médecine, Paris

Dec. 9, 1919, 82, No. 39

- *Alcoholism and the Thyroid. Le Clerc.—p. 394.
- *Treatment of Vincent's Angina. Capitan.—p. 396.
- *Hospital Ships. Chevalier.—p. 399.
- Dual Nature of Farcy. G. Chénier.—p. 403.

Alcoholism and Thyroid Agénésie.—Le Clerc reports three cases of defective development of the thyroid in children of drinking fathers. One patient was a man of 30 with myxedema, one a girl of 14, a mongolian imbecile, and the third a child with myxedema. The older children in the families seemed to have escaped the taint, but the younger ones all showed the effect of it more or less. He has never encountered any other cases of thyroid agénésie.

Treatment of Vincent's Angina.—Capitan has treated 200 cases of Vincent's angina with intramuscular injection of 6 c.c. colloidal arsenic, and states that it never failed to sterilize the lesions in twenty-four or forty-eight hours, and the cure was complete in four or five days. A second injection was only exceptionally required. Local treatment is not absolutely necessary.

Hospital Ships.—Chevalier is inspector general of the medical department of the navy, and he here describes the work of the various hospital ships bringing the wounded and sick from Flanders and Serbia and from the Mediterranean fronts. He urges that in building vessels for the merchant marine some should be designed so they could be rapidly transformed into hospital ships at need, the hospital equipment kept in readiness at some convenient point. (See also Paris Letter, p. 189.)

Dec. 23, 1919, 82, No. 41

Food Value of Different Grains. C. Achard and L. Gaillard.—p. 500.
Prophylaxis of Bovine Tuberculosis. J. Lignières.—p. 505.
Influence of Box in Intermittent Fevers. S. A. de Vevey.—p. 508.

Value of Flours.—Achard reports that to the usual food of rabbits were added 50 gm. of different kinds of flour. Six sets of five rabbits each were thus fed separately on wheat, rye, barley, corn or rice flour over long periods. No difference in weight was apparent in any of the sets fed on different flours and no difference in the mineral content of the bones. The only practical conclusion from the research is that the mineral content of the food does not decide the mineral content of the organs and skeleton. The ash was large in the animals fed on rice as with any of the other flours, although rice has less than a third as much mineral elements as barley and rye.

Prophylaxis of Bovine Tuberculosis.—Lignières would sweep away all indemnities, etc., for tuberculous cattle, and place the loss squarely on the shoulders of the proprietor. This, he declares, is the only effectual way to stamp out bovine tuberculosis by making the loss from it so excessive that the proprietors will be forced to take steps to protect their herds against it. According to the present measures, the proprietors have comparatively little personal interest in stamping out the infection. When they find that unless they do this their losses will be excessive, a new order of things will be inaugurated. Three things are necessary for this: (1) The nullification of the sale of any animal found to be tuberculous. The animal to be returned immediately to the vendor; the latter to pay the expenses of transportation and refund the purchase money; (2) The public health service to investigate the herd from which the tuberculous animal came, and brand all tuberculous cattle found destined for any purpose except slaughtering. The vendor to stand the partial or total loss when meat is confiscated on account of tuberculous lesions. (3) No indemnity to be paid to the owner of the cattle except when an animal is ordered to be slaughtered on account of tuberculosis of the mammary glands, or when a mistake has been made in the diagnosis.

With these regulations in force, he states, the tuberculous animal would have to be kept at home, and hence could not start new foci. It would have very little commercial value, as it could not be sold for anything except butchering, and not even for this if the disease is far advanced. The financial loss would be so great that the proprietors would spare no pains to protect themselves. This would transfer the fight against bovine tuberculosis from the authorities to private interests, instead of the latter hampering and seeking to circumvent the authorities in the task. The proprietor would not have to make any declaration, and would not be molested by any one so long as he kept his tuberculous cattle at home. He can call on authorities to help him weed out the tuberculous animals, and these he can keep separate from the others and send to the slaughter-house at his convenience as the years pass, while the rest of his herd is kept safe from infection with tuberculosis. He can take his own time and means to eradicate tuberculosis from his herd, and none of his tuberculous cattle need be branded if he does not attempt to sell them for any purpose except butchering. This prophylaxis based on private interests will act everywhere throughout the country at once, and will be kept up until bovine tuberculosis has disappeared. Lignières urges legislators to pass a law nullifying the sale of a tuberculous animal for any purpose except butchering, and providing for branding as described above.

Dec. 30, 1919, 82, No. 42

Ligation of Carotid for Traumatic Exophthalmos. A. de Lapersonne and Sendral.—p. 515.
Hospital Hygiene and Influenza. A. Lesage.—p. 522.
Malaria and Dysentery Carriers Among the Demobilized. F. Barbary.—p. 524.

Ligation of Carotid for Traumatic Exophthalmos.—Slight exophthalmos was evident two days after the railroad accident fracturing the base of the skull, and neuroparalytic keratitis, ptosis, and intolerable subjective disturbances were

combated by de Lapersonne with ligation of the carotid. The thrill and murmur disappeared but the subjective chug-chug persisted, and the left common carotid was ligated likewise after having been prepared by several weeks of training of the vertebral arteries to prepare them to substitute the ligated artery. For this the carotid was cautiously compressed with the fingers. At first this induced dizziness, jerking, and profound asthenia for several hours, but finally it could be borne for ten minutes at a time, so that a ligature was thrown around the left common carotid also, eight months after the accident and five months after the first ligation. For the first three days there was a feeling as of ice in the head, but all the symptoms soon became attenuated, and the young man was much pleased with the outcome. Twenty-two months later, he still has frequent headaches but is able to read and write without difficulty. Bending over brings on severe dizziness. This symptom is marked in another case of ligation of both carotids. Both of the men are satisfied with their physical condition but complain of impairment of the memory and early mental fatigue. The right exophthalmos in another man had developed seven months after a war wound, and at the twenty-third month had suddenly become aggravated, threatening the loss of the eye. Ligation of the right carotid put an end to all disturbances at once and permanently.

Hospital Hygiene.—Lesage cites experiences—especially with influenza—which confirm anew that individual isolation is the base of all hygiene in hospitals.

Journal de Médecine de Bordeaux

Dec. 25, 1919, 90, No. 24

Substitution, Compensation and Vicarious Action in the Symptomatology after Injury of Nerves. A. Pitres.—p. 535. Conc'n.
*Reverdin Skin Flaps. W. Dubreuilh.—p. 545.

Technic for Reverdin Skin Flaps.—Instead of using a razor, as for Thiersch flaps, Dubreuilh lifts up the skin with a curved needle held at a right angle in hemostatic forceps, with the tip curving up. He pricks the skin with this tip, and as the skin is thus lifted up he cuts out the lifted up portion with a sharp bistoury. The needle thus has a small disk of skin impaled on its tip and this disk is transferred to the defect to be covered. By this means quite a large defect can be rapidly covered with forty or fifty of these disks, about 2 mm. in diameter; larger than this it is hard to detach the scrap, and smaller than this the scrap may be lost when cut out. No anesthesia is necessary, the patient feels merely the prick of the needle. He applies the grafts about 4 or 8 mm. apart, and takes them from nearby. When all are in place, he covers the surface with numbers of small pieces of gauze, a few centimeters wide, placed individually, watering with artificial serum, and presses them down with his hand. The gauze dressing is changed in forty-eight hours but the lowest layer of gauze can be left untouched, watering copiously with physiologic serum. The flaps take hold by the sixth or seventh day. They heal as cicatricial tissue, with the danger of retraction, but they accomplish the healing in cases in which otherwise it would take much longer or be impossible. These minute flaps can be taken so easily and leave such insignificant gaps in the skin that, even if the procedure fails, not much harm has been done. In one case a roentgen dermatitis on the back, as large as a plate, had shown no tendency to heal during the year, but applying these needle grafts, to the more favorable points in turn, led to the complete healing of the lesion in two months. The lesion seems to feel a stimulating action from the grafts even at points where the latter do not touch.

Médecine, Paris

December, 1919, 1, No. 3

*Progress in Hygiene and Infectious Diseases. L. Tanon.—p. 133.
*Peritonitis in Typhoid. F. Rathery.—p. 144.
*Diphtheria Bacilli Carriers. F. Arloing.—p. 149; Id. Stevenin.—p. 168.
Beriberi in France. H. Roger.—p. 151.
Lethargic Encephalitis. P. Halbron.—p. 155.
*Gonococcus Count as Guide to Treatment. L. Ramond.—p. 158.
Smallpox in France. M. Guilhaud.—p. 162.
Polyvalent Lipovaccine Against Typhoid. A. Sezary.—p. 164.

Recent Progress in Infectious Diseases.—Tanon specifies among other progress the knowledge of the complications of typhus, and the favorable results reported by a few workers with serotherapy. Among them are Nicolle and Blaizot with an antiserum from horses that had been injected with emulsions of spleen and suprarenals from inoculated guinea-pigs. Monvoisin during his war imprisonment treated typhus by intravenous injection of 1 or 2 c.c. of convalescents' serum. In his experience this reduced the mortality from 30 to 10.34 per cent. The best results were obtained with blood drawn the eighth day. The injections seemed harmless, and could be repeated if necessary. Lebailly and Poisson arrested an incipient epidemic by inoculating the thirty-four contacts by injecting subcutaneously 1 c.c. of horse serum or convalescent's serum, and 1 c.c. of serum from a guinea-pig developing the disease.

Peritonitis in Typhoid—Rathery refers to peritonitis from propagation without perforation, and reiterates that the slightest suggestion of peritonitis calls for complete immobilization, with ice to large areas of the abdomen, and absolute fasting; nothing should be allowed except subcutaneous injections of artificial serum. The slightest movement should be forbidden, and the chilling of the abdomen should be extensive and constant.

Treatment of Diphtheria Bacilli Carriers—Arloing expatiates on the effectual sterilization of the throat realized with insufflation of desiccated bactericidal antiserum prepared by injecting the horse simultaneously with diphtheric toxin and the bodies of the bacilli. The desiccated antitoxin is mixed with an inert powder and with gum tragacanth to make it adhere to the tissues. These insufflations are given three or four times a day, between meals, after gargling with an antiseptic solution. The nozzles of the atomizer are interchangeable and individual. In three weeks, and sometimes earlier, the diphtheria bacilli disappeared from the throat. He insists that this treatment is absolutely harmless and rapidly effectual. It is important to examine for bacilli anew a week after they have apparently permanently disappeared, as it is possible that they have been merely temporarily checked in their development. Stevenin comments on the misleading conclusions liable from the intermittency of positive findings in the smears. He has had good results recently with insufflation of desiccated *sérum antimicrobien*, insufflated three or four times a day in the pharynx and nasal fossae. Labbé and Canat have also reported good results with it.

The Gonococcus Count as Guide to Treatment.—Ramond reports the differential count of the cells and cocci in the urethral secretions from nine patients repeatedly examined. Nothing was found to throw light on the prognosis or treatment except that the gonococcus curve seems to indicate a partial local immunization in the course of the third week. This suggests that it might be well to wait for the end of the third week before giving balsamics. At this time they might usefully supplement the partial immunization going on, and thus get a chance for effectual action.

Presse Médicale, Paris

Dec. 6, 1919, 27, No. 74

*Present Status of Our Knowledge of Ferments. H. Roger.—p. 741.

*Fracture of the Malleolus. E. Juvara (Bucharest).—p. 743.

*Diabetes Insipidus and Its Pituitary Origin. P. Pagniez.—p. 746.

The Ferments.—In this opening lecture of his course on experimental and comparative pathology Roger reviews the data accumulated in respect to ferments, and suggests that further study of those that preside over reductions and oxidations may explain the origin of many pathologic conditions and the mechanism of death.

Reconstruction of Fractured Malleolus.—Juvara gives illustrations showing the technic for osteosynthesis with fracture of the malleolus. The reconstruction of the bone in its normal outline is accomplished by driving a long, slender nail from below, slanting upward, far into the bone to hold the parts in normal apposition. Or two nails may be driven in close together, the tips diverging a little. One set of

roentgenograms shows nails driven into both malleoli the fourth day after the fracture. The nails were pulled out the twenty-second day, and the cure was complete the thirtieth. In another case illustrated the nail was driven through the skin into the internal malleolus two days after the fracture, and it had healed completely by the twenty-fourth day. Both these patients were men. In other cases he drove two nails horizontally through the malleolus into the tibia, or axially into the fibula from below, or else merely tied a wire around the fractured bone after fitting the parts into place. One illustration shows the foot like a big pin-cushion with three nails thus driven into the bone. No immobilizing apparatus is required and the foot can be moved from the second day, and this should be done as much as possible thereafter. The disappearance of the pain is the result accomplished first by the osteosynthesis. The first dressing is changed the second or third day as blood oozes from the nail holes. The secret of success is to reconstruct the bone in this way at once, as an actual emergency operation, immediately after the fracture. This prevents swelling of the region, and the pains disappear after the osteosynthesis. He uses ordinary iron nails, 1 mm. in diameter and 7 or 8 cm. long. The spongy bone of the malleolus takes the nails easily. Sometimes nailing the internal malleolus in this way is sufficient to hold the external in place without further intervention. The internal malleolus is exposed by a U incision, the base above, and the flap is turned back on the leg. The internal saphenous vein skirts the anterior margin of the malleolus and injury of this must be guarded against.

Pituitary Diabetes.—Pagniez analyzes five recent works on this subject published in Spain, Italy, France and this country. Many points are still obscure, he remarks, but two things seem to be certain, namely, that pituitary treatment has an immediate and specific inhibiting action on essential polyuria in man, and that any traumatic irritation of the nerve regions adjacent to the pituitary entails polyuria. In pituitary treatment we have now a remedy of considerable efficacy for the polyuria of diabetes insipidus, although its action is transient.

Dec. 20, 1919, 27, No. 78

*Gas Cysts in the Abdomen. M. Letulle.—p. 781.

*Peripheral Vasoconstriction in Shock. R. Ducastaing.—p. 782.

Cultivation of Malaria Hematozoon. M. Chambelland.—p. 783.

Acute Appendicitis. C. Lenormant.—p. 784.

Gas Cysts of Intestine and Peritoneum.—Letulle concludes his illustrated description of intra-abdominal pneumatosis by stating that it is a complication of chronic obliterating lymphangitis, and that a laparotomy may lead to resorption of the gas and total subsidence of all the cysts. This has occurred repeatedly when compression of stomach or bowel by some cyst had made a laparotomy imperative.

Peripheral Vasoconstriction in Shock.—Among other arguments in favor of peripheral vasoconstriction as an important factor in shock, Ducastaing cites two cases of shock in which the slow, weak or absolutely imperceptible pulse became normal under the action of amyl nitrite.

Revue Neurologique, Paris

November, 1919, 26, No. 11

*Facial Diplegia. A. de Castro (Rio de Janeiro).—p. 801.

Bernard-Horner Syndrome from Shell Shock. Léry and Thiers.—p. 808.

*Reflex Adduction of Eyeball. Id.—p. 810.

*Stunted Pyramidal-Cerebellar System. D. E. Paulian (Bucharest).—p. 815.

*Extraction of Bullet in Lateral Ventricle. G. L. Regard.—p. 818.

*Hypertrophic Neuritis. M. Dide and Courjon.—p. 825.

*Achondroplasia in Greek Art. A. Porot.—p. 833.

Facial Diplegia.—De Castro remarks that in his service at Rio a large number of cases of facial diplegia are encountered every year. The paralysis is rapidly progressive, and it may take days or months for it to subside. It may subside completely on one side while persisting on the other. When accompanying polyneuritis, the facial paralysis usually is bilateral and persists longest. Contracture is rare and seldom affects both sides. A series of illustrations are given of three typical cases.

Reflex Adduction of Eyeball.—Léri and Thiers give illustrations of a case in which any peripheral stimulus, such as touching the mucosa of the ear with cold water, or tickling the mucosa of the nose, induces at once a pronounced deviation inward of the eyeball on that side. This phenomenon was marked in two patients with other symptoms indicating injury of the labyrinth, and was negative in twenty-two other neurologic patients. It may possibly aid in detecting an upset in the muscle balance from excessive functioning of the third pair and weakness in its physiologic antagonists, the abducens or sympathetic.

Defective Development of Pyramidal-Cerebellar System.—A woman of 31 and her brother, 26, both present evidence of arrested development of the pyramidal system and afferent cerebellar tracts. The disturbances from this cause did not become apparent until about the age of 20 in each. There was a history of spinal cord disease in an uncle, and the mother had unmistakable signs of syphilis. The cases resemble those published as cerebellar ataxia, but Paulian prefers to label them familial pyramido-cerebellar dysgenesis, emphasizing also the inherited taint.

Extraction of Bullet in Lateral Ventricle.—Regard says that the rarity of the localization of the bullet in the lateral cerebral ventricle and its curious mobility are not so interesting in this case as the primary displacement of the projectile, the means taken to complete the diagnosis, and the successful extraction. The bullet entered at the posterior-inferior end of the left second parietal convolution but there was no word blindness, which tends to disprove the location of this special center at this point. The bullet probably did not enter the ventricle but was pushed into it by the strange expulsive force exerted by the brain tissue for foreign bodies partially embedded in it. Intense headache, somnolency and mental confusion were the symptoms, none pathognomonic, but roentgen examination with the head in different positions showed a displacement of 6 cm. of the bullet. It was easily extracted from the rear after it had been made to drop into the occipital extension of the ventricle and a large flap had been cut in the skull. The whole procedure proved so simple and easy that REGARD says he would feel justified in attempting it in cases of apoplexy when hemorrhage into the ventricle is threatening to prove fatal. It could be done at one sitting, but he did not complete the operation till the following day as he wished to be certain of his asepsis.

Hypertrophic Neuritis in Adults.—Dide and Courjon report five cases with illustrations. The extreme atrophy of muscles began in the hands and arms in five personal cases and in four published by Long and by Hoffmann. In thirteen known cases no inherited or familial taint was discoverable. In ten cases the onset was between 30 and 40. The disease in adults may assume various types, and complicating cerebellar symptoms are rare.

Achondroplasia in Greek Art.—Porot relates that after the siege of Athens by the Romans, 86 B. C., some of the ships taking the loot from Athens to Rome were wrecked, and one of these wrecked ships was discovered a few years ago in the sand bars off Tunis. Its cargo of Greek statues, etc., is now installed in the museum at Bardo. Among them are some bronze statuettes of dwarfs which show all the attributes of the achondroplastic type described by Marie. The trunk, the head and the sexual organs in this type develop normally, but the long bones are stunted, and these features are faithfully reproduced in these dancing figures of which illustrations are given.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 18, 1919, 49, No. 51

Effect of Pyelitis in Infancy on Kidneys Later in Life. E. Rhonheimer.—p. 1929.

Functional Capacity of Tendon Sutures. J. Dubs.—p. 1938.

Venereal Disease in Swiss Army. W. R. Schnyder.—p. 1952. Cont'd.

Prognosis of Pyelitis in Infants for Later Life.—Rhonheimer has secured information in regard to the later life in 122 cases of pyelonephritis in infants. The diagnosis cannot be positive without examination of the urine, but the experiences related show that the urine may show pathologic

findings for months and even for more than a year when the child seems otherwise to have entirely recovered. His examination from one to eight years later demonstrated entirely normal conditions in the urine; no recurrence during the interim was known in any instance. This complete healing of the pyelitis in infants is in direct contrast to what is observed with pyelitis in older children. In the latter, recurrence is so common that some clinicians consider the pyelitis of pregnancy merely the flaring up of the disease dating from childhood. He reviews the testimony of pediatricists, including Birk's case in which pyelitis at 9 was followed by grave recurrence at 11, but the urine and kidneys seemed to be normal throughout a pregnancy at 18. In Rhonheimer's 122 cases, about 23 per cent. were boys, and necropsy showed severe changes in the kidneys and only slight lesions in the bladder. This testifies that infection is blood-borne in infants, while in older children it is usually ascending infection. After infancy, fully 90 per cent. of pyelitis patients are females.

Functional Prognosis of Tendon Sutures.—It has generally been assumed that sutured tendons behave normally thereafter, but Dubs, in a personal experience with 100 cases and analysis of 375 cases on record of injury of tendons in the arm requiring suture, has found that the ultimate outcome is far from favorable. In over 43 per cent. the cause of the interference with function was adhesion to surrounding tissues; infection and suppuration were responsible only in 11.3 per cent. The outcome was poorest in the cases in which secondary suture had been done, and best when the suturing was done early. Even with primary suture, the outcome was bad in 50 per cent. of the extensor tendons and in 10 per cent. of the flexors. The earlier the suture the less danger of adhesions forming. The surgeon should make every effort to ward off adhesions, as the free play of the tendon is indispensable for proper functioning. Too little attention has been paid to this point hitherto.

Policlinico, Rome

November 1919. 26, Medical Section No. 11

*Hemolytic Splenomegaly. P. Biffis.—p. 393; Idem. Livio Losio.—p. 410.
*Pernicious Anemia. F. Marcora.—p. 424.

Hemolytic Splenomegaly.—Biffis reports eight cases of familial chronic jaundice with enlargement of the spleen, but no bile pigments in the urine. The jaundice did not manifest itself until between 22 and 25. The cases were all in several generations in one family. The children present all the symptoms except the jaundice; this will probably appear as they grow up. Removal of the spleen is always followed by improvement, but the abnormal fragility of the blood corpuscles persists unmodified. Only one case is known (Micheli) in which the corpuscles regained normal stability, but even in this case, reexamination several years later showed that the fragility of the corpuscles had returned. The jaundice is no index of the gravity of the condition. In the familial or congenital form, the jaundice is usually pronounced, while the other symptoms are often mild and there is little or no anemia. Biffis and Ceconi have previously published seven cases of the acquired type, and have recently encountered the familial cases here described and another set in a second family. The urobilinuria, attacks of pain in the right hypochondrium and paroxysmal intensity of the jaundice, which had begun at 25, all pointed to the acquired type in the case first seen, but investigation revealed seven other cases in the man's family tree, including his two children.

Splenectomy for Hemolytic Jaundice.—Losio reports a case of chronic hemolytic jaundice in a woman of 22 whose splenomegaly was first noted at the age of 12. He removed the spleen at 22, and the disease seemed to be cured for a time, but then all the symptoms gradually returned. The vessels in the spleen showed peculiar complex changes for which he knows of no precedent; among the other changes was a tendency to calcification of the middle coat. He remarks in conclusion that not only is there no criterion to distinguish the acquired from the congenital type but, in

some cases, it may be impossible to distinguish between primary and secondary jaundice.

Pernicious Anemia and Typhoid.—Marcora gives the minute clinical and necropsy details in a case of progressive pernicious anemia in which typhoid bacilli were found in the blood marrow and spleen, although there was nothing in the findings elsewhere or in the antecedents to suggest typhoid infection. The grave anemia had developed insidiously in the course of three or four months, with urobilinuria, and death about the sixth month. A colored plate shows the blood findings.

November, 1919, **26**, Surgical Section No. 11

*Total Necrosis of Clavicle. G. Aperlo.—p. 349.

*Sarcoma of Frontal Sinus. P. Caliceti.—p. 353.

Modern Technics for Transfusion of Blood. A. Sebastiani.—p. 369.

*Pathology of Sweat Glands. G. L. Colombo.—p. 383.

Necrosis of Clavicle.—The girl of 7 was scratched in the back of the right hand by the nail of another child in play, and a furuncle developed, with secondary rapidly acute staphylococcus osteomyelitis of the clavicle, compelling its entire removal eight days after the primary scratch.

Sarcoma in Frontal Sinus.—Caliceti illustrates a case of rapidly growing primary sarcoma originating in the frontal sinus in a soldier. As long as the growth was restricted to the sinus it caused absolutely no symptoms. When these appeared the growth was already inoperable. If discovered or suspected in an early stage, it might be well to try an autovaccine, as Citelli recommends. Caliceti obtained most gratifying results with an autovaccine in a case of sarcoma of the upper jaw. He reviews the literature on malignant disease of the frontal sinus.

Changes in Sweat Glands.—Colombo found severe changes in the sweat glands in patients with nephritis, also in tuberculosis and in various chronic intoxications. The elimination of toxins through the sweat glands entails these changes in time, and he induced them in cats and rats by blocking kidney functioning.

Archivos Brasileiros de Medicina, Rio de Janeiro

August, 1919, **9**, No. 8

*Serotherapy of Anemia. Sylvio Prado Pastana.—p. 623.

*Treatment of Fractures. Alipio Santos.—p. 666.

Serotherapy in Anemia.—Prado Pastana says that with the Besredka technic it is a simple matter to obtain an anti-human hemolysis serum from rabbits. This hemolytic serum, as he calls it, has a potent stimulating action on the blood-producing centers. The blood corpuscles are produced in larger numbers, comparatively, than the hemoglobin. The hemoglobin takes a longer time to approximate normal, and it is wise to aid this with iron. The principal indication for this treatment is severe aplastic anemias, especially when the blood-producing centers seem exhausted and a stimulant is called for. The immediate effect surpasses that from administration of iron. The best results are observed with minute and well spaced doses; 1 c.c. of the 1:20 antiserum is the preferred dose, diluted with 9 c.c. of physiologic solution, and infused into a vein, very slowly after the first. None of the five patients whose cases are described with minute detail complained of the technic, and no trace of anaphylaxis was ever noticed. The intervals were from eight to twelve days, and only two or three injections were made.

Treatment of Fractures.—Alipio Santos describes the first case in Brazil treated by what he calls the Anglo-American method, that is, weight extension applied to the suspended limb. He extols the perfect healing and functional outcome.

Boletín de Medicina y Cirugía, Guayaquil

October-November, 1919, **17**, Nos. 125-126

*Etiology of Yellow Fever. H. Noguchi.—p. 139 and 155.

Noguchi's Research on Yellow Fever.—This is a Spanish translation in full of Noguchi's various publications on the clinical and other features of yellow fever and on the leptospira which he incriminates in the etiology. Much of the work was done at the Guayaquil hospital. Noguchi's charts and twelve photomicrographs are reproduced.

Brazil-Medico, Rio de Janeiro

Nov. 8, 1919, **33**, No. 45

*Pleurisy with Heart Disease. Luna Freire.—p. 353. Begun in No. 43, p. 337.

Epidemic Poliomyelitis in Uruguay. V. Escardó y Anaya.—p. 356. Cont'n. See abstract below.

Pleurisy with Heart Disease.—Luna Freire has recently encountered three cases of pleural effusion in the left side in persons with heart disease. Analysis of these cases and of the literature shows that the heart disease with arterial lesions and with pleural effusion on the left side originates in the aorta, and spreads secondarily to the myocardium. This suggests that syphilis may be the primary factor. The symptoms are the same whatever the origin of the pleurisy, but few think of testing for syphilis, and yet this might give the clue for effectual treatment. In his three cases chronic aortitis was evident, and one of the men, a physician, succumbed to the progress of the disease, with multiple hemorrhages, epistaxis, hematemesis and melena. In all, the heart was displaced toward the right of the sternum. He discusses the reasons why the effusion is generally on the right side with heart disease, while in his three cases the left side only was involved. In Beaufumé's sixteen cases, only one involved the left side. The mechanical factors explain the predilection of congestion and edema for the right side, but do not explain the pleurisy; infection is required for this. The term arterial cardiopathy should be restricted to the cases in which chronic inflammation of the large vessels of the base spreads to invade the myocardium or the valves, and syphilis is generally responsible for the inflammation of these large vessels. This conception allows a more favorable prognosis.

Revista Médica del Uruguay, Montevideo

November, 1919, **22**, No. 11

*Hemiplegia Consecutive to Influenza. F. Abente Haedo.—p. 771.

*Epidemic Poliomyelitis in Uruguay. V. Escardó y Anaya.—p. 779.

*Connection Between Syphilis and Tuberculosis. E. Mariño and J. C. Mussio Fournier.—p. 807. In French. Comparative Analysis of French and German Arsphenamin. A. Prunell.—p. 812.

Hemiplegia After Influenza.—Abente's patient is a young man who for a few weeks after influenza presented symptoms of the Millard-Gubler type of hemiplegia. By exclusion, Abente accepts an infectious arteritis of influenzal origin as probably responsible for the hemiplegia.

Epidemic Poliomyelitis in Uruguay.—Escardó's address on this subject was presented at the recent International Child Congress. He comments in particular on the element of pain which was a feature of the disease during the three epidemics in Uruguay, 1906, 1912 and 1916. He mentions further two unpublished cases of cephaloplegia, like those described by Figueiras at Rio de Janeiro. The two cases were seen ten years ago by de Pena at Montevideo. Probably unrecognized poliomyelitis was responsible for the cephaloplegia. The child was totally unable to hold up its head, and there was also a slight tendency to paralysis. These symptoms subsided in about a week in one case, but the infant of 2 years succumbed to asphyxia. Escardó adds that serotherapy is being tried at Buenos Aires in poliomyelitis, and the results are quite encouraging.

Syphilis and Tuberculosis.—Summarized on page 359 when published elsewhere.

Berliner klinische Wochenschrift, Berlin

Oct. 13, 1919, **56**, No. 41

Proposed Reforms in Medical Education. O. Lubarsch.—p. 961.

The Sachs-Georgi Serologic Reaction in Meat Testing. E. Seligmann and F. von Gutfeld.—p. 964.

Paralysis of the Soft Palate after Influenza. G. Kickhefel.—p. 967.

*Hemostasis with Prostatectomy. A. Freudenberg.—p. 967.

What the War Has Taught Us About Nutrition. K. Bornstein.—p. 968.

Local Use of Calcium Chlorid for the Prevention of Serious Hemorrhages in Suprapubic Prostatectomy.—After or during suprapubic prostatectomy one of the chief dangers, Freudenberg has found, lies in the serious hemorrhages that

so frequently prove fatal. He has, however, of late been using a method of prevention that he finds very satisfactory, namely, the local application of a 6 per cent. solution of calcium chlorid. From ten to twenty minutes before the operation, 100 c.c. of the solution are injected into the patient's bladder, the contents of which have been removed by catheter. Immediately before the skin incision is made, the fluid is withdrawn from the bladder and air is injected. After the enucleation of the prostate, for which the smallest possible incision in the bladder is made, the resulting cavity is plugged tight with medicated gauze that has been immersed in the calcium chlorid solution. Above this a large-sized drain is inserted. The balance of the cavity of the bladder is likewise plugged with the gauze dipped in the calcium chlorid solution. Through the Freyer drain a Nélaton catheter may be inserted and the greater part of the urine drawn off through a tube, thus preventing to a great extent the infiltration of urine into the tissues. The abdominal flaps are then sutured above and below close up to the drain. Following Freyer's technic, the bladder itself is not sutured. After twenty-four hours, the Freyer drain is removed; also the tampon in the upper part of the bladder. The tampon in the prostate cavity is not removed for two or three days. Caution then is necessary, and it may be advisable to use hydrogen dioxid to avoid hemorrhage from mechanical irritation. For bladder lavage during the first few days following the operation, calcium chlorid should be added by way of precaution. Freudenberg has operated in twenty-six cases in this manner without experiencing any serious difficulties from hemorrhages.

Deutsche medizinische Wochenschrift, Berlin

Oct. 16, 1919, 45, No. 42

- *Nonoperative Treatment of Hemorrhoids. I. Boas.—p. 1153.
- *Regenerative Processes in Man. XX. Regeneration of Blood Vessels. A. Bier.—p. 1155.
- *Meaning of Term "Uremia." W. H. Veil.—p. 1158.
- *Pathologic Conditions in Skeleton from Undernutrition. A. Böhme.—p. 1160.
- Injuries of Middle Meningeal Artery. A. Salomon.—p. 1162.
- Effusion in Peritoneum as Symptom of Intestinal Occlusion. A Galambos.—p. 1163.
- *Causes of Quincke's Edema. H. Sieben.—p. 1164.
- *Gonococcus Otitis in Nurslings. H. Putzig.—p. 1165.
- *Poisoning by Oil of Eucalyptus. P. Auerbach.—p. 1165.
- Proposed Reforms in Medical Course. J. Schwalbe.—p. 1166. Cont'd.

Radical Nonoperative Cure of Hemorrhoids.—After twenty years' experience in treating hemorrhoids, Boas finds injections of 96 per cent. alcohol the most effectual measure. For years he had used injections of phenol (Kelsey's method) with fair success, but the results were often not entirely satisfactory. Recurrences were rather frequent. The main objections to phenol are its escharotic and toxic effects. Boas sought for an injecting medium that was free from these objections, and for four years has been using 96 per cent. alcohol with eminent satisfaction. He describes his method under three headings: (1) preparation of the patient; (2) the treatment proper, and (3) after-treatment. The patient must remain in bed during the treatment. Boas objects to the ambulant treatment of hemorrhoid patients which he thinks, if he is correctly informed, is all too prevalent in America. By means of the Bier suction glass the hemorrhoids are drawn out of the anus. From experience one learns how long and how vigorously the suction must be applied in order to bring forth all the hemorrhoids, for it is essential in this method that every nodule should be injected. When the operator has thus informed himself as to the number and size of the hemorrhoidal tumors, they are returned within the rectum. If the hemorrhoids bleed too freely it is well to control the hemorrhage by repeated injections of calcium chlorid. On the first day the patient is given a purge. After securing a thorough evacuation, the bowel is cleansed the next day by means of a soapsuds enema. The treatment proper begins with the patient in the knee-chest position. With the Bier suction glass, the hemorrhoidal tumors are now brought well into view. With a record syringe of 10 c.c. capacity, from 2 to 5 c.c. of 96 per cent. alcohol are injected, carefully but quickly, deep into the hemorrhoids. In one of moderate size 2 c.c. may be

injected in the upper half and 2 c.c. in the lower half. In an especially large tumor, 5 c.c. may be required. The whole procedure takes only two or three minutes even when the vascular tumors are numerous. Occasionally the injections are painful and he now uses a local anesthetic from fifteen to twenty minutes before applying the treatment. A slight burning sensation may be felt for a time, but there should be ordinarily no further discomfort. After the injections the hemorrhoidal mass should, if at all possible, be returned to the bowel. If the mass is large, this may entail some difficulty. In rare cases it may be necessary to leave a small part of the mass outside of the rectum, but this only delays the cure a few days, as through gradual necrobiosis the extra-anal portion will slough off. The after-treatment is important. The patient remains in bed for four days in the dorsal recumbent position and receives during that period only a liquid diet, in order to reduce intestinal activity to the minimum. On the fourth or fifth day a purgative is given. If prolapse of the injected piles does not occur during the first stool, it will not usually occur at all, so that the patient can then be allowed to resume a normal diet and will soon be able to move about freely. The final test, applied about a week after the injection, consists in using the Bier suction glass again to see if the hemorrhoids are now securely anchored within the rectum. Boas has treated fifty-two patients by this method. A radical cure was effected in all the cases and there have been no recurrences as yet, although in two cases a second injection became necessary. The total amount of alcohol injected never exceeded 10 c.c.

Regenerative Processes in Blood Vessels.—As regards transplantation of blood vessels, Bier believes that autoplasmic transplants are the only ones that can be counted on. Various investigators had maintained that homoplastic and heteroplastic transplants, or even segments of dead blood vessels, would live and conduct the blood stream. But the microscope has shown that such transplants suffer the same fate as all other homoplastic and heteroplastic transplants: they disintegrate and are absorbed, while other surrounding tissues, usually scar tissue, take their place. Bier adds that the remarkable part of it is that even this scar tissue may actually perform the needed function. For a more extended treatment of this question, Bier refers to the investigations of Borst and Enderlen published in the *Deutsche Zeitschrift für Chirurgie* 99, June, 1909.

Meaning of the Term "Uremia."—The current views in regard to the pathogenesis of uremia are only approximately correct and need revision, Veil thinks. The term "uremia" covers too many things that in the light of recent investigations are not closely associated. If for traditional reasons the term must be retained, it should be used, he says, to designate "only azotemia or ureahemia." Its diagnosis should be based on the chemical proof of abnormal quantities of the constituents of the urine and of nitrogenous bodies in the blood.

Bone Disease from Undernutrition.—Böhme says that the similarity between the clinical picture of osteomalacic affections and that of ordinary rickets led to the use of the same therapy, which proved adequate; namely, highly nutritious diet that was sufficiently varied, prevention of unnecessary weight bearing by the bones and administration of cod liver oil with phosphorus. This therapy usually produced an improvement in the general condition, a rapid remission of the pain and the return of strength, so that the patient was soon able to walk and later to go about his work. In deformities of the legs, corrective bandages worn during the night were found beneficial. The fact that the same external conditions sometimes produce rachitis tarda and sometimes osteomalacia raises the question as to the relation between the two diseases. The pathologists support the view that from an anatomic standpoint the two diseases cannot be differentiated. Clinicians insist on a differentiation, especially from the pathogenetic standpoint, maintaining that in osteomalacia a hyperfunction of the ovaries is a main cause. Böhme thinks that the observations of the war period bring out also the close clinical relationship between the two diseases.

The bone changes in rickets and in osteomalacia are essentially the same. In respect to localization, however, there is some difference, which may perhaps be explained by the modifying influence of the ovaries. The symptoms and clinical course of this war period type of osteomalacia differ from those of peace times. That the glands of internal secretion were often damaged could be concluded from the fact that certain secondary sexual characteristics were repressed.

Injury of the Middle Meningeal Artery.—The diagnosis of injury of the middle meningeal artery, while an easy matter in typical cases, becomes exceedingly difficult if the classical symptoms of cerebral pressure are absent or are obscured. Salomon gives as convincing evidence of the difficulty attending the diagnosis of epidural hematomas the fact, as cited by Brun, that of thirty-nine cases of hematoma in Krönlein's service at Zurich only nineteen were diagnosed before the death of the patients, and thus could be given operative treatment. To add to the difficulties, patients are often admitted to the hospital in an unconscious state, nothing of their past history being known, while the brain is completely paralyzed. Salomon thinks a more widespread knowledge of atypical lesions of the middle meningeal artery would lead to better results. The diagnosis and the indications for operation should not be allowed to depend so exclusively on the classical symptoms of pressure on the brain. Though aphasia may be the only focal symptom, this alone may at times be taken as an indication for operation. If after two or three days' observation, in spite of temporary improvement, the typical brain pressure pulse, the aphasia and the mental condition remain the same, we are justified in assuming the presence of a good-sized, unabsorbable extravasation of blood, the removal of which is clearly indicated. Salomon is convinced that extension of the operative indications will reduce quite perceptibly the number of cases that come to necropsy, which now amount to about 50 per cent. of all cases.

Quincke's Edema.—Sieben reports a case of influenza in a 13 year old girl which was followed by chorea and a concurrent angioneurotic edema. He has observed a number of cases, in which not only chorea but also other nervous diseases were associated with influenza, so that he does not hesitate to count the chorea and edema among the after-effects of influenza. Furthermore, he reports as after-effects of influenza: serious maniacal emotional conditions, and even genuine mania of the severest type, necessitating confinement of the patient in an asylum but with final complete recovery. If Quincke's edema follows one infectious disease (influenza), it may possibly follow other infectious diseases. If there are no intestinal symptoms that point to the origin of the disease, it would be well to look for some infection that may have played an important part in its genesis.

Gonococcus Otitis in Infants.—Putzig reports a case of purulent otitis media in a 14 month old child which occurred nearly two months after the child had been successfully treated for a typical gonorrhea. He thinks that it was due to a second infection transmitted from the mother who was still suffering from a specific gonorrheal discharge. He emphasizes the need of bacteriologic examination of the discharge in all cases of persistent suppuration of the ear in infants, especially those who have had gonococcus infection, as knowledge of the gonorrheal origin makes possible specific treatment, such as with 1 per cent. protargol solution and, if necessary, potassium permanganate lavages, which usually bring about a cure in a few days. If a bacteriologic examination is not made, the child may be seriously injured by a protracted otitis, and through lack of knowledge of the danger, other members of the family may become infected.

Poisoning by Oil of Eucalyptus.—Auerbach reports a case of poisoning in a man of 47 who had ingested about 20 c.c. of oil of eucalyptus. Half an hour afterward he was found unconscious in bed. Auerbach found the patient cyanotic; with a weak, slightly accelerated pulse, and covered with a cold sweat. The pupils were contracted and fixed. The area of cardiac dulness was increased, and breathing was shallow. Ingestion of milk caused vomiting, and milk lavage brought

forth distinct evidence of eucalyptus oil. The condition of the patient slowly improved, and complete recovery followed on the fourth day. Auerbach gives this account of the case because he finds in the literature few reports of poisoning from oil of eucalyptus.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 18, 1919, 2, No. 16

*Actinomycosis of Lung. G. H. Moll van Charante.—p. 1150.

*Growth of Urinary Calculi. F. Hijmans.—p. 1159.

Case of Ascending Paralysis. A. Q. van Braam Houckgeest.—p. 1163.

*Present Status of Acute Purulent Pleurisy. W. F. Wassink.—p. 1165.

Actinomycosis of the Lung.—Moll van Charante reports the case of a man of 45 with a history and aspect suggesting tuberculosis, but a very tender point was found in the interscapular space, with dulness, and the vocal fremitus was weak, and there were some râles. Roentgenoscopy revealed what seemed to be periostitis of ribs, but the discovery of actinomycetes in the sputum cleared up the diagnosis. Necropsy showed symmetrical abnormal conditions in the periosteum of nearly all the ribs, the periosteum often sagging like a bag, and the lungs were studded with minute lumps. In a second case pain in the left side for three months was finally explained by a swelling assumed to be a tuberculous process in a rib. The infiltration was hard as wood but soon softened, and an incision released pus containing the actinomyces. Symptoms suggesting pleurisy with effusion developed, back of the process in the chest wall. No fungi were found in the sputum and the lung did not seem to be involved. Complete recovery followed ample incisions, roentgen treatment, potassium iodid and copper sulphate, locally and internally. Agglutination may help in the diagnosis; the actinomyces does not become agglutinated but the patients' serum is said to agglutinate *Sporotrichum beurmanni*, although Harbitz and Israel were unable to confirm this. After long coughing and expectorating, sudden violent pain in side and chest is soon accompanied by the hard infiltration, with final softening and retraction of the chest wall. With secondary infection, air from the lung may get into the abscess and the succussion sounds then are pathognomonic. One case is on record of ten years' duration, but others are known with a fatal outcome in three months. Potassium iodid, eucalyptus oil and roentgen treatment have not benefited more than a few cases. Illich found no recoveries in fifty-eight cases, but Mayer found seven in thirty-five, and Netter has reported a case of complete recovery in four weeks under 6 gm. daily of sodium iodid. Two cases are on record of recovery under vaccine therapy when conditions seemed very grave, seventeen injections in one case and six in the other. Operative intervention as for cancer has now a record saving twelve otherwise doomed patients.

Growth of Urinary Calculi.—In one of Hijmans' two cases, 11 large stones, weighing altogether 110 gm., were found in the bladder six years after cystotomy to clear the bladder of 2 small stones. In a second case, two years after pyelotomy 6 phosphate stones were found in the kidney pelvis, weighing in all 40 gm. Such cases teach the necessity for keeping patients under surveillance after an operation for urinary calculi, and regulating their habits to correspond to the urine findings. Regular supervision at three months' intervals might reduce materially the number of cases of recurring urinary calculi.

Acute Purulent Pleurisy.—Wassink analyzes recent literature on this subject, and remarks that the trend seems to be to restrict intervention to puncture in recent cases of rapid onset with numerous cocci in the empyema or serous effusion. The puncture may be supplemented or not with insufflation of gas. If the condition of the lung permits, Mzingo's method of closed sterilization may be tried and may ward off actual empyema (THE JOURNAL, Dec. 21, 1918, p. 2062). The Dakin method is still on trial, and should not be attempted outside of a large hospital. The experiences with open treatment of empyema in young children have been extremely unfavorable. Repeated puncture seems to be all the intervention that should be attempted in infants.

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PHYSICAL AND HYGIENIC BENEFITS OF MILITARY TRAINING AS DEM- ONSTRATED BY THE WAR

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Probably no other class of men have the vision, as medical men have, to see the good that would result from universal military training.

There never has been a real survey of the man power of the United States, but all of us know that many surprising facts would be developed if such a survey were made. The Civil War gave a certain indefinite survey at that time, but during the last fifty-five years tremendous changes have taken place in our mode of living, and the human mechanism has not adjusted itself to the changes of civilization. We have had no opportunity to judge the defects among our male population. For a long time the finger of scorn has been pointed at the Army and Navy because we had such a high percentage of venereal disease. I have been interested in this subject for a quarter of a century. The only reason we had a high percentage of venereal disease was that we knew the amount of this disease among our soldiers and sailors and published it to the world. We always knew that the rate of venereal disease did not represent the rate in the Army but did represent, to a fair degree, the rate in the civil population in the vicinity of our military posts. We do not contract venereal disease in the Army to any extent, but acquire it almost exclusively from without the military reservation. With a distinct understanding of the meagerness of the information we had at the beginning of the world war, it is most interesting to review the statistics furnished by the draft, the report covering the mobilization of nearly 5,000,000 men in the military forces of the United States (Army, Navy and Marines).

BENEFITS RESULTING FROM THE WAR

The cessation of hostilities at a period in the war when the American battle casualties had been insignificant, in comparison with the losses of other belligerent countries, offers a favorable opportunity to consider the brighter side of the war and to estimate what benefits have accrued to the nation as a whole, and to the individual soldier in particular, from calling to the colors approximately one twentieth of the entire population of the United States. These benefits are manifold and may thus be roughly classified:

1. Improvement in physical development as a result of outdoor life, good food, regular exercise and strenuous physical training.

Alertness, activity, strength, endurance and discipline, combined with a body free from disease, are the first requirements of a soldier. These qualities are largely obtained by gradual and well regulated physical training. As applied to the recruit, this training enables him to bear the hardships and to overcome the difficulties of warfare. The beneficial results of physical exercise during the training are supplemented by the outdoor life, the regular hours required, the plain, simple food, the good sanitary surroundings, and the many other features that promote the development of a high type of physical manhood. The improvement in the physical development of the young man in the Army was most striking. Our sanitary inspectors visited dozens of camps to investigate the thoroughness of the examination made on the arrival of the recruit at camp, and they made the same investigation of the soldier before his demobilization. At the first of these examinations, the inspector was greatly impressed by the stream of naked men who were awkward, narrow chested, with flabby muscles and often with a stoop. Contrasted with this picture, he was tremendously impressed by a similar line of naked men who presented themselves for examination before demobilization. They were bronzed, erect, broad-chested soldiers with fine muscular development and a characteristically alert and self-confident air. Many exaggerated statements have been made as to the gain in weight soldiers have acquired during the war. Some day these statistics will be available, but at the present time no correct statement can be made. The officer in charge of the sanitary division of the Surgeon-General's Office estimates that the average gain in weight in the first year of military service is from 15 to 20 pounds. The actual records of one company of National Guard troops under the semitropical conditions existing on the Mexican border in 1916 showed an average gain of 12½ pounds a man in nine months. Studies on this subject during the war made by the division of foods and nutrition in the office of the Surgeon-General showed in one infantry company an average gain of 10 pounds a man after four months of service, and in three artillery batteries an average gain of 6¼ pounds in six months. Another study showed 2⅙ pounds gained in five weeks. There is no doubt that this gain in the soldiers' weight was almost entirely muscular tissue. It is reasonable to believe that a six months' training of the youths of our land during the year they are 19 years of age would produce similar good results from the physical standpoint.

2. Detection and cure of many obscure and latent pathologic conditions, particularly hookworm, malaria, venereal disease, tuberculosis and focal infection.

The examination of a young man for universal training would bring similar results. Many of the disabili-

ties detected would not be disqualifying for military service, but could be remedied during the period of training. Notable examples would be: painful feet, weak backs, hookworm infestation, malarial infection, venereal disease, and focal infection from diseased tonsils and diseased teeth. In the examination of the draft it was ascertained that 29 per cent. of the men had physical disabilities that were disabling for military service. A small list is given in the accompanying table. Suffice it to say, however, that of the 225,000 cases of venereal disease in the Army during the war, prior to May 1, 1919, 200,000 were contracted before enlistment, that is, before the men joined the Army. This statement was made from incomplete statistics and is only relatively correct.

SOME IMPORTANT DEFECTS REVEALED BY THE DRAFT

	Per Cent.
1. Defects of feet (flatfoot, 11 per cent.).....	13
2. Venereal diseases:	
During first period of draft.....	2.9
In later period of the draft.....	5.7 8.6
(Increase due to improvement in method of examination and tabulation, and also to the larger percentage of negroes inducted during the later period.)	
3. Hernia and enlarged inguinal rings.....	4
4. Defective vision (largely refractive errors).....	3½
5. Defective physical development (including underweight and underheight)	3½
6. Organic diseases of the heart.....	3
7. Deformities or loss of extremities.....	3
8. Tuberculosis	2.50
9. Hypertrophy of tonsils.....	2½
10. Defective and deficient teeth.....	1½
11. Mental deficiency	1.25
12. Otitis media (purulent).....	1
13. Hemorrhoids, varicocele, varicose veins (combined).....	1
14. Goiter (simple and exophthalmic).....	0.75
15. Deformities of hand.....	0.75
16. Cardiac arrhythmias and tachycardia.....	0.50
17. Asthma	0.25

3. A determination by examination of the actual physical condition of the adult male population of military age, and a consequent awakening of the nation to the necessity for efforts directed toward limiting the possibility for the continued evolution of physically defective citizens.

The examination of the registrants before Dec. 15, 1917, resulted in the rejection of 29 per cent. This was before the industrial and economic classification of all registrants had been made. After this classification had been accomplished, 14.5 per cent. were rejected by the local boards, and approximately 7 per cent. were rejected by the boards at military camps. This gives a total rejection by camps and local boards of 21.2 per cent. Forty-seven per cent. of the men examined were found to have certain defects. Fifty-three per cent. were accepted as fully meeting the physical standard, with no defects recorded.

4. Instruction in sanitation and personal hygiene gained by both precept and practice in camp. A great part of this acquired knowledge the discharged soldier will take back to his home and transmit to his family and fellow citizens.

As you know, a great effort was made at our concentration camps to provide every requisite for high-grade sanitation. Camps were models of cleanliness. An ample supply of potable water was furnished; shower baths were unlimited; sewage disposal was complete, and the best of food was provided. Every effort was made to have food properly prepared. The men were protected against flies and mosquitoes. Food handlers were examined to detect possible carriers of typhoid, paratyphoid and dysentery. Modern laundries were established. Vice and liquor selling were abolished or limited. In addition to what the soldier saw of sanitary methods at the camp, he was given instruction in sani-

tation and personal hygiene; he was provided with suitably fitting shoes, his teeth were examined and put in condition, and he was vaccinated against typhoid, paratyphoid and smallpox. He was frequently examined to detect incipient disease. A great part of this knowledge the soldier retained to take back with him into civil life. It will have a marked influence on his method of living, and he will transmit a part of his knowledge of hygiene to his family and neighbors.

5. Education in sex relation and in the matter of protection from the dangers of illicit sexual indulgence. This subject is of so great importance that it is given a special heading.

There is no one thing which demands greater attention from the people of the United States than does the widespread prevalence of venereal disease. The discussion of this subject has been tabued in polite society until quite recently. The examination of the men between 21 and 31 years of age developed the fact that more than 5 per cent. were suffering from manifest venereal troubles. The Wassermann test was not taken, so cases of syphilis which did not present local manifestations were not detected. The wide prevalence of venereal disease among our young men was a revelation to the people at home and I think that from now on the campaign against venereal disease will be one of the good results from the war. While the soldier was in camp he was protected in every conceivable way from venereal disease—by education, by law-enforcement, and by early treatment. The low record for venereal disease in the American Army in France was a revelation to our allies. It is believed that the education on this one subject alone will be of tremendous value to the country in the future.

6. Training in discipline and the development in the soldier of respect for authority.

Among those promoted to commissioned and non-commissioned grades, there was developed the faculty to command and exact obedience. I do not think too much importance can be laid on this subhead. I am certain it is accepted by all that in recent years the tendency of the American youth has been in the direction of disrespect for authority, whether parental, municipal or national. I think the discipline of military life has had a most wholesome effect on the American soldier, and will in a marked degree make him better material for citizenship. The experience which these men gained will be of inestimable value in civil life.

7. Protection, by vaccination, of 5,000,000 men against the danger of contracting typhoid, paratyphoid and smallpox for several years to come.

This will have a far-reaching effect on the population of the United States for many years. We have learned to control typhoid fever and have practically eliminated by sanitary measures dysentery and malaria. Even as late as the Spanish-American War, typhoid fever, dysentery and malaria filled our hospitals. During the world war those three diseases were practically negligible quantities in our sick report. Until May 1, 1919, we had only 213 deaths from typhoid fever, thirteen deaths from malaria, and forty-two from dysentery. Think of the great change that has taken place in this respect as contrasted with the Civil War and the Spanish-American War.

BENEFITS OF UNIVERSAL MILITARY TRAINING

The statements that I have made refer to the good the Army did the American soldier during the world

war. There is every reason why this good could be multiplied with the youth of the land by universal military training. It would give us a wonderful opportunity to make a physical survey each year of the youth of the land. It would enable us to detect physical disabilities that could be remedied and would make the man economically more valuable for the rest of his life. Many of the disabilities which men carry through life and which interfere with their value as citizens are remediable. At one time during the war, 10,000 cases of hernia were awaiting operation. All of these disabilities could be corrected during the period of military training. Defective vision could be corrected; men with weak feet and weak backs could be relieved. The mental defectives could be classified; the young man would be given an object lesson in discipline and be taught respect for authority—the good that could be accomplished is unlimited.

PATHOLOGIC ANATOMY OF TRAUMATIC FRACTURES OF CRANIAL BONES

AND CONCOMITANT BRAIN INJURIES *

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This attempt to consider the injuries of the brain and cranial bones when the latter are broken by external violence is based on conditions encountered in 504 postmortem examinations made by one of us during the years 1911 to 1918. It does not include all the postmortem examinations during that period of the bodies of persons with such traumatic fractures, for in about sixty instances the measurements and other steps necessary in the interests of precision were not so detailed as in the 504 here reviewed. The patients were cared for in the Cook County Hospital or the Hospital of the House of Correction, and some post-mortem examinations were of bodies of persons who were found dead or who died en route to a hospital.

SIX FUNDAMENTAL CONSIDERATIONS

Notwithstanding certain still mooted questions regarding the mechanism whereby the injuries of both the cranial bones and the brain are produced, and especially the influence a whirling motion of the falling head and body may have on the characteristics of the injuries, there are six facts that are generally accepted and need brief mention as a background for what follows:

1. There are six regions where the greater thickness of the cranial bones forms arches thicker below and gradually thinning out in the vault: one in front from the root of the nose and glabella; one behind, including the inion and the external and internal crests of the occipital bone, as well as the torcular eminence; one on each side from the external angular processes of the frontal bone and prolonged obliquely back and into the body of the sphenoid in the bones of the skull base, and finally one on each side formed by the petrous bones and continued externally in the protuberance of the mastoid (Figs. 1, 2 and 3).

2. With violence applied to the cranium, these arches hinder horizontal bending; whereas the bone between the arches can more easily bend vertically. As a result, the bone between

the arches flattens the more in a horizontal plane and breaks across, the linear fractures radiating up into the vault and down into the bones of the base of the cranium between the arches.

3. With the head in motion, the brain lags behind the more rapidly moving cranium, and as a consequence is closer to the cranial bones *opposite* where violence is applied; and with the axis of the skull abruptly shortened at right angles to where violence is applied, the brain is the more bruised opposite that place.

4. The resistance (weight) of the trunk and extremities transmitted to the skull via the condyles of the occipital bone tends to bend in the bottom of the skull, especially the arches, and is one factor determining the course and distribution of the fractures.

5. When the cranial bones are broken with the head in a fixed position, contrecoup bruising of the brain is reduced to the minimum and the bruises are direct, at the place of fracturing.

6. The general direction taken by fractures which course between the arches is also well known, and is shown in Figures 4, 5, 7, 10, 19, 23 and 29.¹

NATURE AND LOCATION OF FRACTURES

About 85 per cent. of the 504 cases here considered were simple linear fractures or linear fractures with branches; in the remainder, the bones were extensively comminuted and with some of the fragments depressed. With the bones of the cranial base involved slightly more than those of the vault, both were involved in varying degrees in all but about 8 per cent. of the 504. When grouped according to the fossae chiefly involved, with one group for the vault and one for fractures so extensive that several fossae and part of the vault as well were broken, the incidence is as shown in the accompanying table. In this table are

LOCATION OF FRACTURES

	Pos- terior Fos- sae	Mid- dle Fos- sae	An- terior Fos- sae	Vault	Ex- ten- sive	Totals
Total number.....	178	166	61	49	50	504
Some depression.....	6	11	6	4	7	34
Mode of injury learned.....	130	124	51	33	42	380
Short falls	36	43	9	2	2	92
Longer falls	48	37	13	16	13	127
Street car	17	12	16	4	13	62
Automobile and autotruck..	11	17	7	2	11	48
Assault	18	15	6	9	3	51
Meningitis	15	7	13	3	1	39
Healed fractures	7	6	4	1	0	18
Decompression operation.....	15	27	3	8	6	59

included a few fractures partly healed or so healed that their courses could still be followed. Many of the fractures of the back fossae ran forward to end in the ethmoid bone or one of the foraminae of the middle fossae. Violence for these fractures as indicated by the scalp injuries was usually to the back of the head. Of the sixty-one fractures of the anterior fossae, seventeen were simple linear, from 2 to 5 cm. long and in the roof of one orbit. Of the extensive fractures, usually with comminution, the violence was to the back of the head for twenty-seven, to the side for nineteen and in front for four. The average of the total linear length of these fractures was 70 cm., the greatest 138.9 cm. (Fig. 19). With the vault fractures, some traumatic diastasis of sutures was not rare: in twelve of the forty-nine, part of the sagittal or its entire length was affected; in three, the coronal

*From the Coroner's Medical Service at the Cook County Hospital.
*Aided by a grant from the Otho S. A. Sprague Memorial Institute.

1. We have made no attempt to cite from the literature, but wish to refer especially to the work of Tilmann (Arch. f. klin. Chir. 66:750, 1902; 59:236, 1899) and that of M. Auvray (Maladies du crâne et de l'encéphale, Paris, 1909).

suture, and in five, one or both lambdoid sutures. As regards the meningitis, the petrous parts of the temporal bones were the portal of entry for the infection in twenty-three, the ethmoid bone in thirteen; in two fractures the opened sagittal suture with the scalp laceration, and in one the petrous bone of one side was

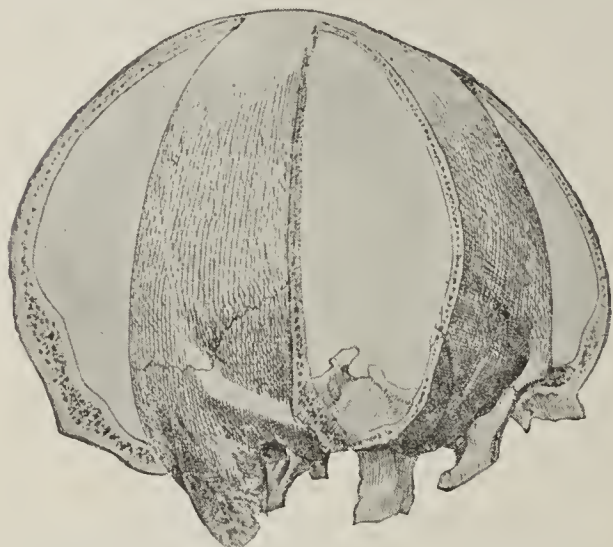


Fig. 1.—Location of the reinforcing arches of the cranium.

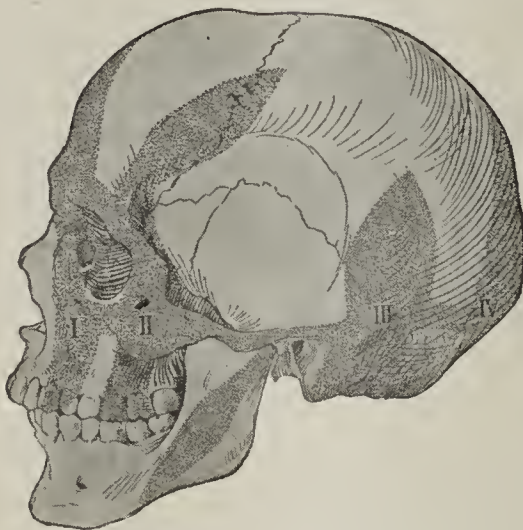


Fig. 2.—The thickest portions of the cranial bones are in the shaded areas.

broken and a decompression operation had been made. With thirteen of the eighteen fractures with some degree of healing, there were contrecoup bruises, and in four, direct bruises alone. With one of these healed fractures there was an abscess of the left cerebral hemisphere in front, the fracture of the right posterior fossa and no outside bruise of the brain; in other words, the abscess opposite the fracture.

CONCOMITANT BRAIN INJURY

The injuries of the brain concomitant with fractures of the cranial bones are preponderantly of the outside of the brain, owing partly to the inbending of the cranial bones, but chiefly to the bumping of the brain against the cranial bones. Most fractures of the cranium result from causes which first set the head into rapid motion and then suddenly stop the skull against a firm object. The brain, floating as it does in the cerebrospinal fluid, lags in the movement of the head, so much so that when the head stops moving the brain receives its greatest injury by bumping against the cranial bones directly opposite where the cranium is broken. When the bones of the temporal fossae or of the nuchal planes of the occipital bones are fractured, because of their thinness, there is frequently a bruise directly under the fracture resulting from inbending of the bone and compression of the brain. The back half of the cerebrum is larger and heavier than the front half, and because of this the front poles of the cerebrum are more frequently and more extensively bruised than the back poles. If the lateral ventricles are enlarged (internal hydrocephalus), the sides of the brain and front poles are more easily torn. As a result of these factors the frontal and temporal lobes are the most frequent site of injury; injuries of the back of the head have a large percentage of contrecoup bruises; of the sides, the next largest percentage of contrecoup bruises; and injuries of the front are more frequently associated with large direct bruises than with large contrecoup bruises.

DEGREES OF BRAIN INJURY

That the degree of brain injuries may be indicated in some way, they are roughly divided into seven groups, according to severity:

1. Severe lacerations of the brain from 4 to 6 cm. in diameter and extending into the brain 4 or 5 cm. Here there is a defect in the surface filled with clotted blood and torn brain tissue. There were fifty-four injuries of this type, and in fifteen the tear had extended into one of the lateral ventricles (Figs. 14 and 22). In thirty-nine of the fifty-four, bleeding continued intracerebrally for a few centimeters, so that in places on some of the surfaces made by coronal sections of the brain beyond the margins of the bruises of the outside there were hemorrhages inside of the brain not connected with the surface (Figs. 12, 13 and 14). Thirty-six of the latter occurred in the frontal or temporal lobes, three in the occipital lobes, usually with severe injuries (street car, automobile, high falls, etc.). There were subdural hemorrhages with all fifty-four injuries, weighing from 10 to 220 gm. All except eight were contrecoup injuries.

2. Bruises of the brain, usually wedge-shaped, in which the brain is infiltrated with blood from 2 to 4 cm. deep in a place 4 or 5 cm. in the largest outside dimensions (Figs. 25, 30 and 32). The leptomeninges covering the bruise are usually torn, the brain is lacerated from 1 to 2 cm. deep, the adjacent tissue is thickly infiltrated with blood, and the margins are edematous and dotted with petechial hemorrhages. Subdural hemorrhage is always present, but in amounts varying from a few grams up to 100 gm. Bruises of this type were the most frequent of all of the larger bruises. There were 248 in this series: 182 contrecoup and sixty-six direct.

3. Bruises, frequently with the leptomeninges intact, from 1 to 1.5 cm. deep, with little laceration of the brain tissue. There is generally hemorrhage into the brain, wedge-shaped on cross-section (Figs. 11, 16, 24, 25, 27 and 28). These are found with cranial fractures in which the trauma is usually of such a degree as might result from a short fall on a side-

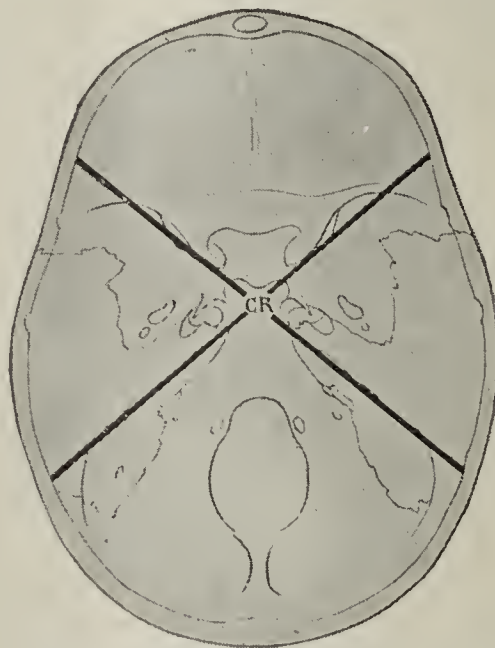


Fig. 3.—As the arches come together at the body of the sphenoid bone they are curled up at their ends; because of this, fractures radiating down into the base of the cranium course toward the body of the sphenoid bone, as shown in many of the illustrations.

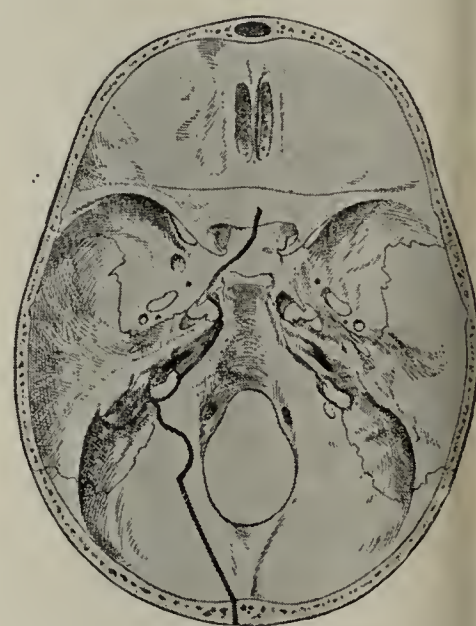


Fig. 4.—The fractures shown in this illustration and in Figures 5, 6 and 7 may be taken as "composites," that is to say, they represent conditions with extension from the vault down into the different fossae. (Figures 1, 3, 4, 5, 6 and 7 are taken from LeDentu, A., and Delbet, Pierre: Nouveau traité de chirurgie, XIII. Auvray, M.: Maladies du crâne et de l'encéphale, Paris, 1909.)

walk, floor, etc. They are also frequently associated with the severe injuries, mentioned above, that is, with a blow on the back of the head on the right side the large bruise will be of the left frontal or temporal lobe, while one of these more superficial bruises will be found of the right frontal and

temporal lobes or of the right side of the cerebellum (Figs. 11, 24 and 25). This type of injury was present with about 35 per cent. of all the fractures. In only fifteen when these were the largest bruises present were there subdural hemorrhages with clots weighing more than 10 gm., and in only two did they weigh as much as 90 gm.

4. Superficial contusions represented by closely set petechial hemorrhages of the cortex in places from 1 to 1.5 cm. in diameter (Figs. 21, 24, 27 and 32). The meninges are intact and usually there is a little bleeding into the leptomeninges about the contusion. One or more of these contusions is usually present when the brain is severely injured, oftentimes five or six. Like those in Class 3, they are in those parts of the brain some distance away from the direct line of force (Figs. 16, 21 and 24). Some of them were the only gross evidence of direct injury of the brain.

5. Hemorrhages into the pons and medulla, chiefly the pons, centrally located, often multiple and the individual hemorrhages from 1 to 3 mm. in diameter (Fig. 18). These are usually contrecoup in location, that is to say, the fractures do not course through the bones adjacent to the brain-stem. The explanation of these hemorrhages is variously stated: contrecoup bruising, stretching of the brain away from the brain-stem because the former is more movable, and interference with the blood supply of the pons and medulla (infarction).²

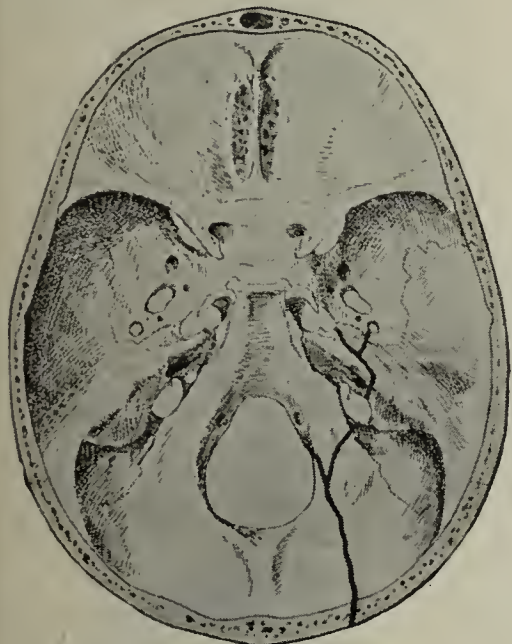


Fig. 5.—Composite fracture.

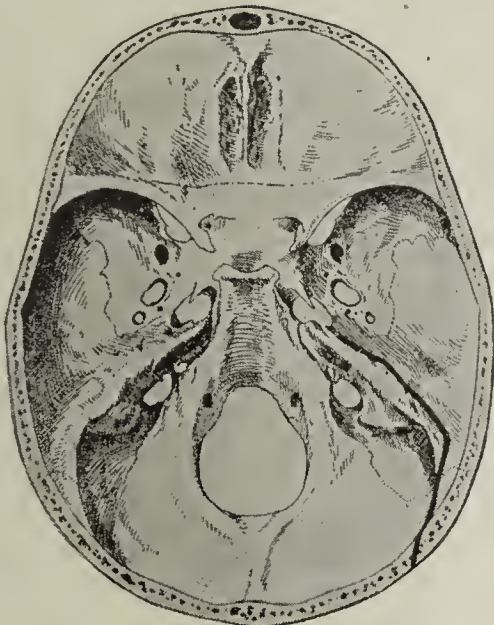


Fig. 6.—Composite fracture.

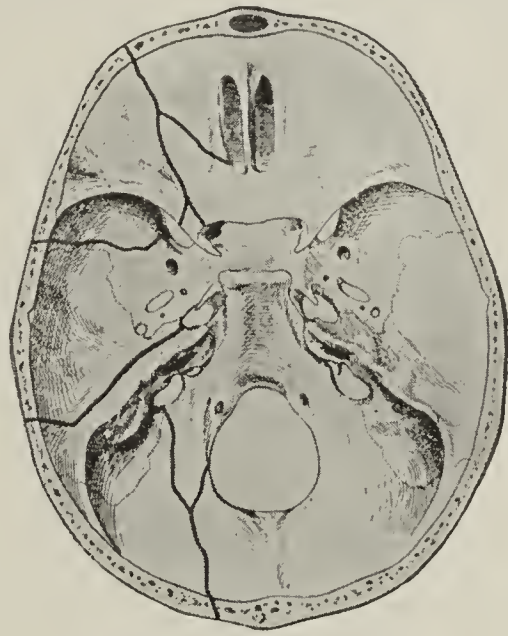


Fig. 7.—Composite fracture.

There were eighteen brains with hemorrhages in the brain-stem with fractures of the posterior fossae: in thirteen multiple, and in five a single hemorrhage from 2 to 4 mm. in diameter. In thirteen of the 166 fractures of the middle fossae, there were hemorrhages in the pons; ten of these patients lived less than one day, one three days, one seven days and one ten days. There were three with fractures of the frontal fossae, and all were associated with extensive injury of the brain. There were brain-stem hemorrhages in eighteen of the fifty extensively comminuted fractures; twelve with the violence applied behind, five of the side and one of the front of the skull. In the forty-nine fractures of the vault, there were hemorrhages in the brain-stem in five, and none of these patients lived longer than one day in the hospital.³

6. Small intracerebral hemorrhages, usually in the cerebral basal ganglions, from 5 to 10 mm. in diameter. There were only six of these in the 504 fractures of this series (Fig. 18).

7. Small intracerebral hemorrhages about 1 cm. in diameter, usually single, occurring when an extradural blood clot compresses one of the hemispheres. They are always in the compressed hemisphere. They were present with only four of the 104 large extradural hemorrhages (Fig. 30).

INCIDENCE AND NATURE OF BRAIN INJURIES

Brain Injuries with Fractures of the Posterior Fossae.—In 149 (83.70 per cent.) of the 178 fractures, the largest bruise of the brain was contrecoup, in sixteen (8.98 per cent.) direct; and in three both the contrecoup and direct bruises were of equal extent. In the remaining ten the brain injury was slight. When the fracture was near the midline, the bruising was usually fairly symmetrical of each frontal lobe at the tips, lower outer margins and of the tips of the temporal lobes (Figs. 20, 21 and 22). With the fractures coursing more outward from the midline and forward in the posterior fossae, the contrecoup bruises were chiefly of the opposite side of the brain (Figs. 10, 11, 12 and 13). As a rule with the violence applied close to the back of the ear, the frontal and temporal lobes on that side were little if any bruised. In 159 of this 178 (89.32 per cent.), one or both frontal lobes bore bruises, tears or both; in 120 (67.41 per cent.), the temporal lobes had so suffered; in sixteen (8.98 per cent.), the occipital lobes; and in fifty-five (30.89 per cent.), the cerebellum. As already

stated, the injuries of the frontal and temporal lobes were chiefly of their frontmost convolutions, undersurfaces and lower convolutions; but with the point of injury high on the back of the head, the undersurfaces of these parts of the cerebrum were chiefly bruised; with the injury at the level of the external occipital protuberance, the contrecoup bruises were chiefly of the frontal poles of the cerebrum; if at some distance from the midline, the outer margins of the opposite frontal or temporal lobes were chiefly bruised; in short, there has not been observed any noteworthy deviation from the directly opposite location of the contrecoup bruising of the brain which is such a conspicuous and important feature of the lesions accompanying the fractures.

Brain Injuries with Fractures of the Middle Fossae.—In 103 (62.04 per cent.) of the 166 fractures, the largest bruises of the brain were contrecoup, in forty-three (25.90 per cent.) direct. In the remaining twenty the brain injury grossly visible was only slight leptomeningeal hemorrhage of about equal extent on the two sides of the brain, except in a few brains which were without gross injury. In seventy (42.16 per cent.) of this 166, one or both frontal lobes bore bruises, tears or both; in 146 (87.94 per cent.), one

2. Greenacre, Phyllis: Multiple Spontaneous Intracerebral Hemorrhages, a Contribution to the Pathology of Apoplexy. Bull. Johns Hopkins Hosp. 28: 312, 1917.

3. With some of these hemorrhages, sugar is found in the urine, as it is also with large spontaneous (apoplexy) hemorrhages in the pons.

or both temporal lobes; in thirty-eight (22.89 per cent.), the parietal lobes; in fifteen (9.03 per cent.), the occipital lobes, and in ten (6.02 per cent.), the cerebellum. The bruises of the frontal lobes were mostly of the outer margin and undersurface. In only a few instances were the bruises of the frontal lobes deep, and then the external injury was of the back half of the parietal region of the opposite side. The bruises of the temporal lobes were preeminently of the outer margin

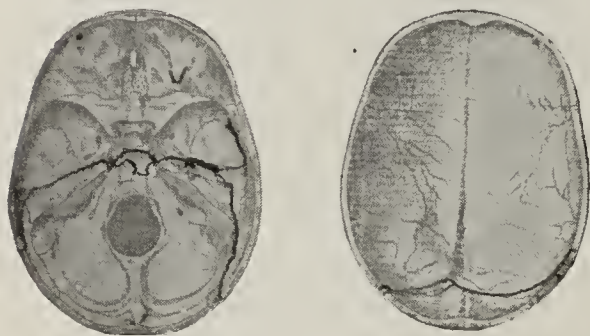


Fig. 8 (Case 23).—An extensive, traumatic, comminuted fracture of the cranial bones with an independent fracture of the roof of the right orbit. The fracture is 53 cm. long. The scalp was bruised opposite the right mastoid region. This man, aged 52, was struck by a street car six hours before death.

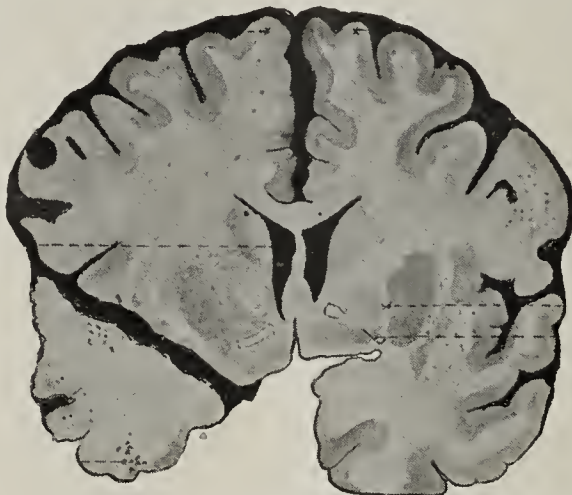


Fig. 9 (Case 23).—Extensive traumatic leptomenigeal hemorrhage due to extension from contrecoup bruises of the frontal and left temporal lobes.

and undersurface, depending on whether the violence was applied low or high on the vault, respectively (Figs. 23, 24, 26 and 27). One or both of the temporal lobes were bruised whenever the brain was injured.

Bruises of the Brain with Fractures of the Frontal Fossae.—In thirty-five (57.37 per cent.) of the sixty-one, the greatest bruising of the brain was direct, in thirteen (21.31 per cent.) contrecoup. In forty-four (72.13 per cent.), the frontal lobes were bruised or torn; in seventeen (27.70 per cent.), one or both temporal lobes; in three (4.91 per cent.), one or both parietal lobes; in nineteen (31.14 per cent.), one or both occipital lobes; and in eleven (18.03 per cent.), the cerebellum. In thirteen brains there was no gross evidence of injury, and in thirty-seven of

brain in thirty-one (62 per cent.) of the fifty was contrecoup; in fourteen (28 per cent.), direct; and in five, both the contrecoup and direct bruises were equally severe. In only two of the fifty brains were the injuries slight, consisting of direct leptomenigeal hemorrhage. The point of external violence was used in deciding whether the bruising was contrecoup or direct, because some of the fractures encircled the

skull, and especially through the middle fossae. In thirty-nine of the fifty (78 per cent.), one or both frontal lobes were bruised or torn; in thirty-seven (74 per cent.), one or both temporal lobes; in seven (14 per cent.), one or both parietal lobes; in eight (16 per cent.), one or both occipital lobes; and in sixteen (32 per cent.), the cerebellum. Of the twenty-seven fractures in which the violence was applied behind, the contrecoup bruising was greatest in fourteen; in four, direct; in eight, chiefly contrecoup, but the direct bruises were also large, and in one there was

little injury of the brain. Of the nineteen with the violence applied to the side of the skull, in nine the contrecoup bruising was greatest, in five, direct, and in five chiefly contrecoup; but the direct bruises were also large. With the external violence applied in front, the direct bruises were greatest in three of the four, and in one the brain injury was slight.

Brain Injuries with Fractures of the Vault.—In thirty-nine (79.59 per cent.), the greatest bruising was contrecoup; in nine (18.36 per cent.), direct; and in one, the brain injury was slight. In eight of the thirty-nine brains, the contrecoup bruising was only slightly greater than the direct. The frontal lobes were bruised or

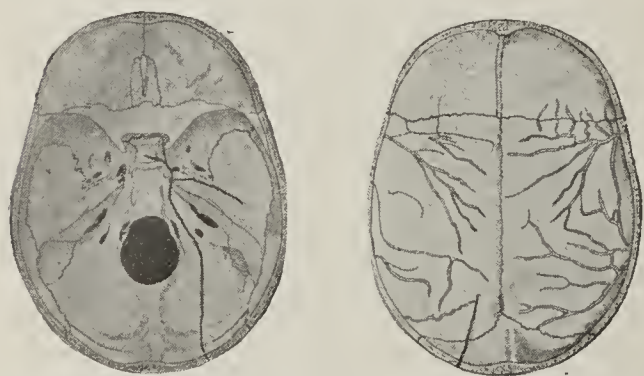


Fig. 10 (Case 24).—Typical linear fracture of the right posterior fossa resulting from the patient's falling backward and striking the back of the head on a cement floor. The patient was a white man, aged 45.



Fig. 11 (Case 24).—The location of the contrecoup tears of the left frontal and temporal lobes (Class 1), the superficial contusion of the right frontal lobe (Class 3) and the extent of traumatic leptomenigeal hemorrhage. The front half of the left cerebral hemisphere was covered by a subdural clot, and at the tears the clot was from 8 to 10 mm. thick. Altogether the subdural clot weighed about 25 gm.

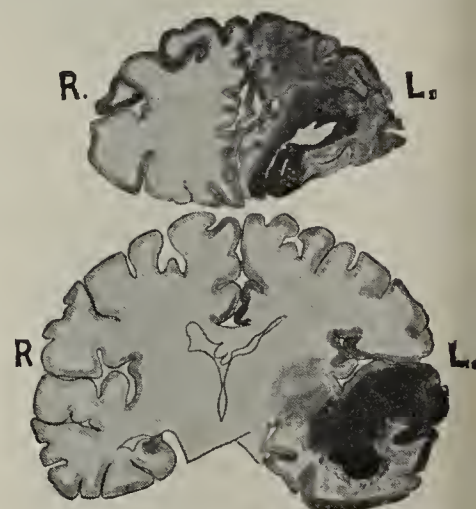


Fig. 12 (Case 24).—Coronal sections (anterior surface) through the frontal and temporal lobes, showing the depth of the contrecoup bruising (Class 7).

the sixty-one fractures the brain injury was slight (or no injury was present), death resulting from other causes (in nine, from meningitis; in eight, from delirium tremens; in six, from broken bones; in five, from epilepsy; in two each, from bronchopneumonia and internal injuries; and in one each, from uremia, tetanus, drowning, syphilis and so-called pachymeningitis hemorrhagica interna).

Brain Injuries with Extensively Comminuted Fractures of the Cranium.—The greatest bruising of the

torn in thirty-nine (79.59 per cent.) of the forty-nine fractures; the temporal lobes in thirty-three (67.34 per cent.); the parietal lobes in sixteen (32.65 per cent.); the occipital lobes in nine (18.36 per cent.), and the cerebellum in six (12.24 per cent.). The contrecoup bruises were mostly of the undersurfaces of the frontal and temporal lobes, usually with many contusions of the type included in Class 4 (Figs. 31 and 32).

SUBDURAL TRAUMATIC HEMORRHAGES

Subdural traumatic hemorrhages result most frequently from lacerated cerebral veins where the brain is bruised. Also of importance are the bleeding, torn, cortical vessels. Infrequent sources of subdural hemorrhage are torn dural venous sinuses and the larger cerebral arteries of the base of the brain. In order to obtain facts for a better understanding of the location

were contrecoup, and fifteen, direct. Also, thirty-one of the large subdural hemorrhages were local, and twenty widely spread. The small subdural hemorrhages were only a few millimeters thick and extended from 1 to 10 mm. beyond the margins of the bruise from which the bleeding occurred. With increasing size, the subdural hemorrhages spread mostly up over the parietal lobe, the front margin advancing less than the upper and back margins.

Subdural Hemorrhages with Fractures of the Frontal Fossae.—In twenty-one of the forty-eight accurately described cranial injuries in this group there was subdural hemorrhage, and of these twenty-one, thirteen were direct and eight contrecoup. There were only six large subdural hemorrhages, five direct and one contrecoup, the latter beneath the tentorium cerebelli.

Subdural Hemorrhages with Extensively Comminuted Fractures.—In forty-three of the fifty fractures in this group, accurate records of the subdural hemorrhage or its entire absence were made. There were subdural hemorrhages in thirty-six, twenty large and sixteen small. Eighteen large subdural hemorrhages were contrecoup, and only two direct. Twelve small hemorrhages were contrecoup and four direct. In several cases there were both direct and contrecoup subdural hemorrhages.

Subdural Hemorrhages with Fractures of the Vault.—There were subdural hemorrhages in thirty-eight of the forty accurately described brains; twenty-eight of these were large and ten small. All but three of the large subdural hemorrhages were contrecoup, and fourteen of the large hemorrhages were local.

TRAUMATIC EXTRADURAL HEMORRHAGES

Bleeding, which splits the dura away from the cranial bones as a result of fracture, may result from laceration of the trunk or branches of one of the middle meningeal arteries, the dural venous sinuses,



Fig. 13 (Case 25).—Coronal sections (posterior surface) through the frontal and temporal lobes, showing contrecoup bruises of the left frontal lobe (Class 1), and intracerebral bleeding back into the left temporal lobe.

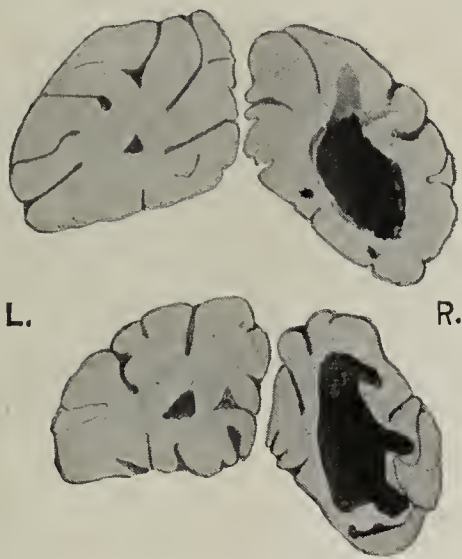


Fig. 14 (Case 25).—Coronal sections (posterior surface) through the occipital lobes. The bruise of the outside could not be seen from the undersurface with the cerebellum attached (Class 1), and both intracerebral bleeding beyond the margins of the bruise and rupture into a ventricle.

and extent of subdural hemorrhages, as much of the blood as could readily be removed from the torn brain without further injury was weighed, its distribution measured and the injury described, all with some accuracy.

Subdural Hemorrhages with Fractures of the Posterior Fossae.—Examinations were made in 136 of the 178 fractures of this group. In 115 of the 136 there was subdural hemorrhage, 104 contrecoup and eleven direct. In seventy-one of the 115 the blood weighed between 20 and 210 gm., but the most frequent weight of these large clots was about 40 gm. In the remaining forty-four there were usually only a few grams (from 1 to 10 gm.), and in a few from 10 to 20 gm. Of the large subdural hemorrhages, fifty-four were local, that is, confined to the front third or front half of the cranial cavity, seventeen were more widely spread over one side of the cerebrum.

Of these large hemorrhages, sixty-six were located altogether on one side. Two of the large subdural hemorrhages were contributed to by tears of large cerebral veins without severe injury to the brain.

Subdural Hemorrhages with Fractures of the Middle Fossae.—Examinations were made in 134 of the 166 fractures of this group. In ninety-eight there was subdural hemorrhage. Of these, in fifty-one the blood weighed between 20 and 310 gm., in the other forty-seven much less. In sixty-three the subdural hemorrhage was contrecoup, in thirty-five, direct. Of the large subdural hemorrhages, thirty-six of the fifty-one



Fig. 15 (Case 26).—Extensive, traumatic, comminuted fracture of the cranial bones, 55.9 cm. long. The cause of the fracture was undetermined. The scalp bruises were opposite the lambda. The patient was a white man, about 35 years of age.

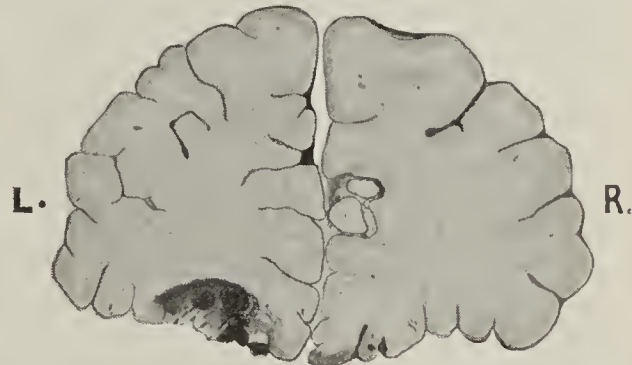


Fig. 16 (Case 26).—Coronal section (posterior surface) of the frontal lobes. Contrecoup bruises of Class 3 of the left frontal lobe and Class 4 of the right frontal lobe are shown here.

the cerebral veins at the point of entrance into the superior longitudinal sinus, tears of the dura allowing free subdural blood to enter the extradural space, from the broken cranial bones, or from pericranial hemorrhages with comminuted depressed fractures.

There were extradural hemorrhages in 199 (39.48 per cent.) of the 504 fractures in this series. Of these 199, 104 (52.26 per cent.) were large enough to produce appreciable compression of the brain (from 20 to 246 gm.) and ninety-five were small, usually only a

few grams. Of the large extradural hemorrhages, seventy-three (70.19 per cent.) were with fractures of the middle fossae; fifteen (14.42 per cent.) with fractures of the posterior fossae; ten (9.61 per cent.) with fractures of the vault; three (2.88 per cent.) each with fractures of the frontal fossae and fractures listed as extensively comminuted. About 50 per cent. of the small extradural hemorrhages resulted from bleeding of the broken bones, and 20 per cent. from torn dural sinuses. The remainder were probably due partially to



Fig. 17 (Case 27).—Healing, traumatic fracture of the skull of undetermined cause, in a negro, aged 40. This illustrates the course of many fractures of the posterior fossae.

bleeding from broken bones and from pericranial hemorrhage.

Of the large extradural hemorrhages, forty-nine covered the temporal and parietal lobes on one side, thirty-four the temporal, parietal and occipital lobes on one side, fourteen one occipital lobe, six the frontal and parietal lobes on one side, and one the temporal and parietal lobes of both sides. Of these large hemorrhages, forty-nine were attributed to bleeding from the anterior branch of one of the middle meningeal arteries, forty-four from one of the posterior branches, three to laceration of the superior longitudinal sinus (the blood in two weighed between 25 and 30 gm., in the third about 60 gm. on each side, that on the left removed by the surgeon) and eight, in which there were fractures of the posterior fossae, from one of the transverse sinuses, the blood in none of the latter weighing more than 50 gm. Thirty-six of the large extradural hemorrhages were with fractures of the middle fossae passing through the anterior parts of the fossae in the squamous portions of the temporal bones, and thirty-seven with fractures that passed through the middle and posterior portions of the fossae. Comminution of the bones in the middle fossae occurred in less than half of the seventy-three large extradural hemorrhages; most of the fractures were of the linear type. Fifty-four of the large extradural hemorrhages were on the left side, forty-nine were on the right side, and one was on both sides.

The usual shape of the blood clot of the large compressing type is oval, the margins thinnest and the center thickest. The long dimension is obliquely directed up and back. The lower border is seldom lower than the middle temporal convolution, and the upper border is usually 1 or 2 cm. from the superior longitudinal sinus (only in six instances did the clot reach to the sinus). The thickest portion of the clot is usually at the middle of the outer surface of one of the parietal lobes so that the greatest compression of the brain is in a line drawn horizontally through the middle of the parietal eminences. The compression of

the brain is saucer-shaped (Fig. 30). The blood clots early, so that with death one or one and one-half days after the injury the clot adheres to the dura, when the calvarium is removed, rather than to the bones. Later the clot becomes so adherent that it is necessary to use the sharp edge of a knife to detach it. The average dimensions of a clot weighing about 100 gm. (this is an average weight) are 10 by 8 cm. and from 3 to 3.5 cm. thick.

In nine of the large extradural hemorrhages caused by fractures of the middle fossae, there was no bruising of the brain grossly visible; in thirty-three there were only superficial bruises like those included in Class 3 of brain injuries; in twenty-five there was sufficient bruising to allow from 5 to 20 gm. of blood to enter the

subdural space, and in six there were large subdural clots weighing from 40 to 120 gm. In none of the fifteen large extradural hemorrhages resulting from fractures of the posterior fossae was the brain without bruises, and in thirteen there were large bruises, contrecoup, and in the other two like those of Class 3. There were bruises of the brain in the remainder of the large extradural hemorrhages, frequently like those of Class 2. The proportion of contrecoup and direct bruises was approximately the same in fractures with large extradural hemorrhages as with the fractures without such hemorrhages.

There were decompression operations in twenty-three of the large extradural hemorrhages, in some with free blood still present at the time of the post-mortem examination in and beneath the decompression defect, and weighing from 60 to 120 gm. There were



Fig. 19 (Case 28).—Extensive comminuted, traumatic fracture of the cranial bones, 138.9 cm. long, in a white man, aged 52, who, while in the hospital suffering from chronic alcoholism, jumped from a second story balcony to the main floor and struck the cement floor head first. There were superficial contrecoup contusions of the brain (Classes 3 and 4) and moderate leptomenigeal hemorrhage. Death occurred in five minutes.

several decompression operations not included in these twenty-three in which the conditions postmortem precluded conclusions as to whether a large extradural clot was present before the operation; and for these no mention of a large extradural hemorrhage was made in the description of the operation by the surgeon. Sixteen of the twenty-three operations were with fractures of the middle fossae, three with fractures of the

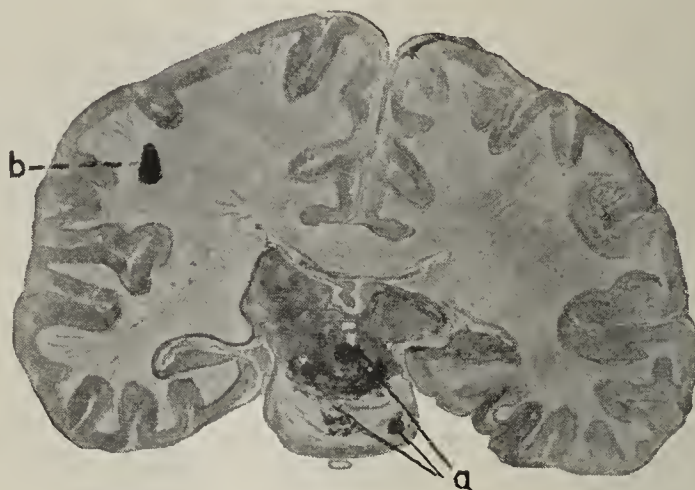


Fig. 18 (Case 27).—Typical traumatic hemorrhage (a) in the pons (Class 5), and (b) traumatic hemorrhage of the intracerebral type (Class 6), usually in the cerebral ganglions.

posterior fossae, three with fractures of the vault, and one with an extensively comminuted fracture.⁴

TRAUMATIC LEPTOMENINGEAL HEMORRHAGE

Bleeding into the subarachnoid space or between the brain and pia (subpia) occurred in about 95 per cent. of all the fractures. Subarachnoid hemorrhage results most frequently from bleeding of bruises of the brain, but also from rupture of leptomeningeal vessels. Subpia hemorrhage results from tears of the pial arteries and cortical vessels. Subpia hemorrhage is seldom as extensive as subarachnoid hemorrhage, and is usually only enough to discolor the surface of the brain pink.

The extent and amount of subarachnoid hemorrhage is dependent on the size of the tear of the arachnoid membrane at the bruise (with large defects, bleeding occurs more readily into the subdural space⁵ than with smaller defects in which the margins of the bruise extend beyond the edges of the arachnoid tear), the bruise of the brain and the laceration of leptomeningeal vessels. Therefore, the amount of subarachnoid hemorrhage is not always proportional to the extent of the bruising of the brain. It is always thickest about the margins of the bruises and gradually thins

brain, and it was the only change sufficient to explain death in a few cases. As in other forms of edema of the brain, the convolutions are flattened, the cerebral veins relatively empty and flattened, the peripheral ends of the sulci closed up more or less tightly, the fluid in the leptomeninges greatly lessened; and when the edema is marked, the visceral layer of the arachnoid is almost dry when the dura is first removed, and by reflected light this surface of the arachnoid is finely granular because the little moisture present is heaped up by separating the two serous surfaces into almost microscopic droplets.

REPORT OF CASES

The failure on the part of police officers and physicians to recognize the presence of fractures of the cranial bones and severe brain injury, or to recognize these injuries only after several hours, requires some comment. Some of the cases reported concern the transfer of patients with fracture of the cranial bones from one hospital to another, in a few even after the nature of the injury was known.

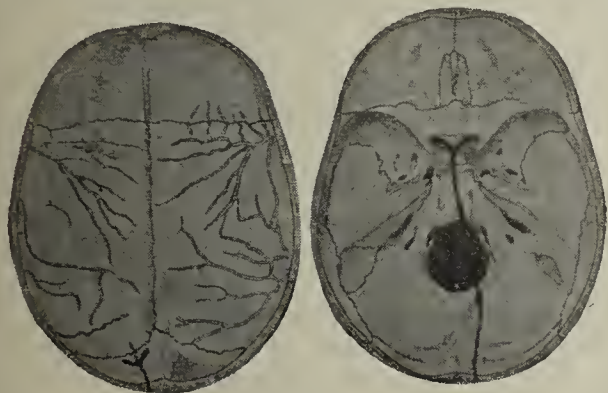


Fig. 20 (Case 29).—Typical linear fracture of the midline of the posterior fossae, 21.2 cm. long. The patient, a white woman, aged 38, died about four days after falling down a flight of stairs.

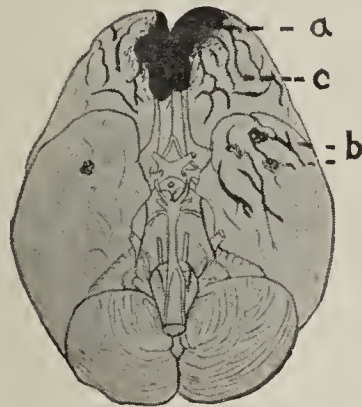


Fig. 21 (Case 29).—The location and extent of the contrecoup tears (Class 1) of the frontal lobes (a) with rupture of the lateral ventricles, contusions (Class 4) of the temporal lobes (b) and traumatic subpia hemorrhage (c). A thin layer of clotted blood in the subdural space covered the entire brain, and at each tear there were about 5 gm. Altogether the subdural clot weighed 23 gm.

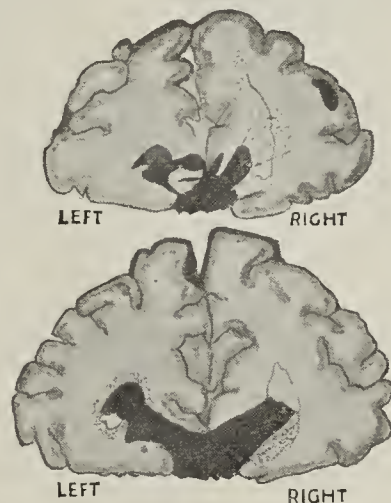


Fig. 22 (Case 29).—Coronal sections (posterior surface) through the frontal lobes, showing the depth of the tears and the petechial hemorrhages and edema of the surrounding brain tissue.

out centrifugally, sometimes covering an entire hemisphere. When extensive, from 1 to 3 mm. thick, the convolutions of the brain are hidden. When less extensive, the sulci stand out as a network because the blood tends to collect in them, and between them the convolutions form a pink meshwork. When slight, the convolutions are discolored pink ("traumatic lividity"). Although severe brain injuries and extensive leptomeningeal hemorrhage are frequently coincident, still there were a few extensively comminuted fractures associated with superficial bruises of the brain but with extensive leptomeningeal hemorrhage, and with some of these death occurred abruptly—from within a few minutes to several hours (Fig. 9).

The location of leptomeningeal hemorrhages corresponds in general to that of bruises in the various types of fractures.

TRAUMATIC EDEMA OF THE BRAIN

The most frequent change in brains of patients dying from fracture of the skull was traumatic edema of the

CASE 1.—A man, aged 45, who had fallen on a sidewalk, was taken to a police station and remained there from 11 p. m. until 12:15 p. m. the next day, when he was taken to the Cook County Hospital, where cerebral hemorrhage, left sided hemiplegia and basal skull fracture were diagnosed. He lived forty-five hours in the hospital.

Postmortem examination revealed a fracture of the right side of the vault, 17 cm. long, below this an extradural clot weighing 118 gm., covering the right motor region, and superficial direct contusions of the right cerebral hemisphere. The only external sign of injury was a bruise of the scalp about the right ear.

CASE 2.—An adult negro, after a street fight, while intoxicated, fell to the sidewalk and was taken to a police station, where he remained about twelve hours, lying on a cement floor. The following morning he was taken home, and then worked for three days as a porter in a saloon. On the fourth day he became "dopy" and was taken to the Cook County Hospital, where cerebral hemorrhage and lacerated scalp were diagnosed. He lived eleven days in the hospital, and five days passed between the time of injury and the entrance to the hospital.

Postmortem examination disclosed a fracture of the left half of the posterior fossa, 8 cm. long, contrecoup contusions of the frontal and temporal lobes, that of the right frontal 5 cm. deep, a huge subdural blood clot weighing 120 gm. of the front half of the right subdural space (brown and clotted firmly), and a healing laceration of the scalp near theinion.

CASE 3.—A man, aged 37, walked into a police station at 9 p. m., supposedly drunk. The next morning at 10:30 a. m.

4. Although the period of time covered in the two articles is the same, a little discrepancy exists between the figures regarding extradural hemorrhages by us and the figures of Dr. Moody (*THE JOURNAL*, this issue, p. 511). This is due to the inclusion here of cases from the Hospital of the House of Correction.

5. Strictly speaking, the term "subdural space" is a misstatement because the inside of the dura is lined with the smooth, glistening parietal layer of the arachnoid, and for "subdural space," which is commonly used, there should be substituted "arachnoid space."

he was taken to the Cook County Hospital, where he lived two and one-half days, cerebral hemorrhage and lobar pneumonia being diagnosed.

At the postmortem examination a fracture of the right half of the posterior fossa, 32.8 cm. long, extensive destruction of the tip of the right frontal lobe, 3 cm. deep, and a thin clot of blood in the subdural space covering the whole right hemisphere, but chiefly in front, were found. There was no sign of external injury of the scalp.

CASE 4.—A man, aged 50, fell down a flight of stairs about 1 a. m. and arrived at one police station at 2 a. m. the same day, where he remained for twenty min-



Fig. 23 (Case 30).—Traumatic, slightly depressed fracture of the skull, 19.5 cm. long. On the right side in the parieto-occipital region there was an extradural clot, 9 by 7 by 1 cm. in its largest dimensions, and weighing 40 gm. The patient, a white boy, aged 14 years, was struck by an automobile seven and one-half days before death.

utes and was then taken to another police station for medical care, remaining there until 8:40 a. m. the same morning, when he was taken to the Hospital of the House of Correction. Skull fracture was diagnosed and two decompression operations performed, one of each parietal region. He lived for three and one-half days in the hospital.

Postmortem examination revealed a linear fracture of the left posterior fossa, 9 cm. long, contrecoup bruises of the frontal and temporal lobes, that of the right frontal lobe being deepest, reaching to the lateral ventricle, a thin subdural clot covering the front half of the right cerebral hemisphere, and an extradural clot weighing 40 gm. in the operation defect of the left parietal region.



Fig. 26 (Case 31).—Linear fracture of the left middle fossa 9 cm. long. Three days and six hours before death this man, aged 42, fell while in a "fit," and struck his head on a cement sidewalk.

CASE 5.—A man, aged 22, after an unknown injury, and supposedly suffering from alcoholism, was taken to a hospital where he remained one day before skull fracture was suspected, after which he was taken to the Hospital of the House of Correction, where he lived two days. Skull fracture was diagnosed and a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the left posterior fossa, 34.8 cm. long, contrecoup bruises of the right frontal and temporal lobes, and a direct bruise of the left half of the cerebellum, a large subdural clot on the right



Fig. 24 (Case 30).—A direct bruise at *a* (Class 2) under the depressed fracture, a contrecoup bruise at *b* (Class 3), and superficial contusions at *c* (Class 4). About the bruises there was leptomeningeal hemorrhage. There were several grams of blood subdural about the tear of the right temporal lobe, but none on the left side.

side in the front half, an extradural clot filling the decompression bone defect and a bruise of the scalp behind.

CASE 6.—A man, aged 35, arrested and taken to a police station, remained twelve hours, suffering from alcoholism and epileptic fits, according to the police officers. He was taken to the Hospital of the House of Correction, where he lived fifteen hours. Skull fracture was diagnosed.

Postmortem examination revealed an extensively comminuted fracture of the back and base of the skull, with diastasis of both lambdoid sutures, altogether 60 cm. long; also there were deep contrecoup



Fig. 25 (Case 30).—Coronal section (posterior surface) through the temporal lobes, showing the depth of the direct and contrecoup bruises.

coup bruises of the frontal poles, subdural clots covering both frontal poles, 30 gm. of blood in the decompression

defect of the left parietal region, and bruises of the scalp behind.

CASE 7.—A man, aged 40, was arrested and taken to a police station on account of alcoholism; after remaining there twelve hours he was taken to the Hospital of the House of Correction, where he lived twenty-eight hours, and where a decompression operation of the left parietal region was performed.

Postmortem examination revealed a fracture of the right parietal bone, slightly comminuted and 17 cm. long, a large contrecoup bruise of the right frontal lobe, blood subdural in front on the right side weighing 110 gm., and bruises of the scalp over the fracture.



Fig. 27 (Case 31).—A contrecoup bruise at *a* (Class 3) and superficial contusions at *b* (Class 4), with subdural hemorrhage. There were 90 gm. of clotted blood in the subdural space on the right side covering the back half of the hemisphere. There was no bruising of the left cerebral hemisphere.

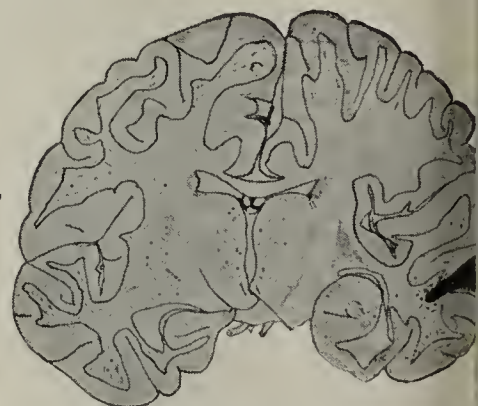


Fig. 28 (Case 31).—Coronal section (posterior surface) through the deepest part of the contrecoup bruise. The symmetry of the brain is due to compression by the subdural clot on the right side.

In these cases there was failure to detect the presence of a skull fracture, or the fracture was discovered only after hours or days had elapsed:⁶

CASE 8.—A man, aged 28, was knocked to the ground by a falling sack of malt weighing 200 pounds. He was taken home, where he remained three days. Several physicians

6. Such unfortunate occurrences as these are less likely to be repeated, since they led to the institution of observation rooms at the Cook County Hospital, adjacent to the admittance department, where patients are kept over night or until the presence or nature of injuries is definitely ascertained.

examined him but none of them suspected the presence of a fracture of the skull, and one sent him to the hospital for the insane, where he lived seven hours and fifty minutes. No diagnosis was made in the hospital.

Postmortem examination revealed a linear fracture of the right posterior fossa, 8 cm. long, contrecoup bruises of the right frontal and temporal lobes and of the left occipital lobe, 40 gm. of blood on the right side behind (extradural) and a bruise of the scalp at the inion.

CASE 9.—A man, aged 42, while intoxicated, was tripped by a boy, October 9, and taken to the Cook County Hospital, where acute alcoholism and alcoholic dementia were diagnosed, and where he remained until October 22, when he was



Fig. 29 (Case 32).—Traumatic, comminuted and depressed fracture of the vault and base of the skull with independent fractures of the frontal fossae; also a decompression defect in which five loose pieces of bone were found by the surgeon. The superior longitudinal sinus was ruptured, and extradural bleeding resulted on both sides; that of the left was removed at the operation, and 60 gm. were found on the right side at the post-mortem examination. The patient, a white man, aged 25, lived eleven hours and thirty minutes after being hit on the left side of the vault by a heavy iron bar during a fight.

Postmortem examination revealed a comminuted fracture of the right posterior fossa through the right petrous bone, in addition to contrecoup bruises of both temporal lobes, that of the left, 9 by 3 cm., and reaching to the lateral ventricle, into which bleeding had occurred; also there was an extradural clot covering the right parietal lobe weighing 28 gm. There was no external sign of scalp injury. The extradural clots were brown and firmly clotted, the subdural mostly on the left side and weighing only a few grams.

CASE 10.—A man, aged 35, was struck by another man in a fight. It is not known whether the blow was struck with a fist or a weapon. He was examined by a physician immediately, who found "nothing wrong except complaint of headache." Suddenly, after two or three hours, he had a "fit" and was taken to the Hospital of the House of Correction, where he lived two days.

Postmortem examination revealed a depressed, comminuted fracture of the right temporal bone, 120 gm. of blood extradural on the right side in the parieto-temporal region, and a superficial bruise of the outside of the right parietal lobe. There were no external injuries, only a swelling in the right temple.

CASE 11.—A boy, aged 8 years, run over by an automobile, November 9, was treated at home until November 28, when he was taken to a private hospital and epidemic meningitis diagnosed. The same day he was removed to the Cook County Hospital by request of the health department, where he lived two days, and epidemic meningitis was again diagnosed. No one suspected skull fracture.

Postmortem examination revealed a small fracture of the ethmoid plate, superficial contusions (mostly subpial hemorrhage) of the frontal poles and left occipital lobe, and meningitis of the base of the brain (pneumococcus). Above the left eyebrow there was a scar.

CASE 12.—A man, aged 37, was in a fight, December 26, and fell to the sidewalk. He was taken to a private hospital,

where he remained four days and where laceration of the scalp was diagnosed. The physicians thought there was no skull fracture. He was discharged and went home, but, December 31, he suddenly became very sick and was taken to the Cook County Hospital, where he lived eighteen hours and where skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the posterior fossae, and through the right petrous bone; in addition there were also superficial contusions of the tips of the frontal lobes, meningitis of the base, and a healing laceration of the scalp at the inion.

CASE 13.—A man, aged 71, walked into a private hospital at 5:15 p. m. with lacerations of the back of the head, which were dressed there and which he did not know how he received. He walked out of the hospital. Two days later he was arrested and taken to the Hospital of the House of Correction, where he lived four days. Here he was irrational and unable to talk; alcoholism and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the left middle fossa, linear and 10 cm. long; also direct bruises of the left temporal and parietal lobes covered by adherent, brown subdural clots, weighing about 5 gm.

CASE 14.—A man, aged 48, fell from a moving wagon, January 20, and was taken home. On the 24th he went to a physician's office, and the physician thought he was

suffering from alcoholism. He remained at home for three or four days more, wildly delirious and all this time in bed. He was then taken to the Hospital of the House of Correction, where acute alcoholism was diagnosed and where he lived two days.

Postmortem examination revealed a fracture of the midline of the posterior fossae, 39.2 cm. long, deep contrecoup bruises of the frontal and temporal lobes, large subdural clots about the bruises, an extradural clot in the left occipital region, and hemorrhages in the pons. There was extensive hemorrhage into the deep tissues of the scalp behind.

CASE 15.—A man, aged 45, was found on a sidewalk by the police at 1 a. m., was taken to the police station, where an ambulance surgeon diagnosed alcoholism, and where he remained until 2:40 p. m. the same day, when he was taken

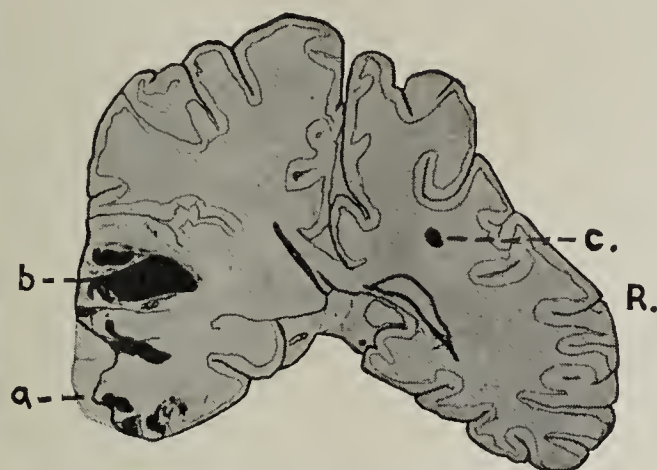


Fig. 30 (Case 32).—Coronal section (posterior surface) through the brain 1 cm. posterior to the optic chiasm showing a tear (Class 2) at *a*, intracerebral bleeding from a bruise anterior to *b*, and the saucer-shaped compression of the right cerebral hemisphere by the extradural clot weighing 60 gm. Traumatic hemorrhage of Class 7 at *c*.

sent to Oak Forest (an infirmary). October 24, he was readmitted to the Cook County Hospital and lived for two days. Skull fracture was diagnosed on the second entrance.



Fig. 31 (Case 33).—Traumatic, extensively comminuted and diastatic fracture of the skull, 123 cm. long, with an independent fracture of the roof of the right orbit. The greatest scalp injury was over the back half of the right parietal bone. This man, aged 35, fell from a ladder head first, about two hours before death.

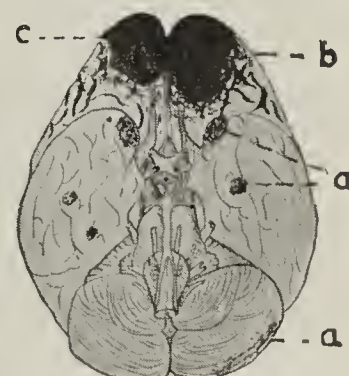
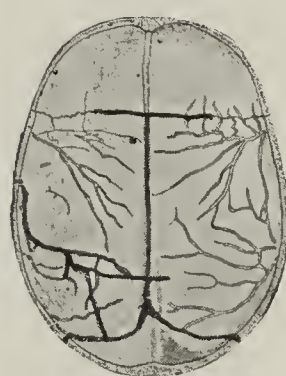


Fig. 32 (Case 33).—Multiple superficial, contrecoup contusions (Class 4) at *a*, a contrecoup tear of the undersurface of the left frontal lobe at *b* (Class 1), and a contrecoup bruise of the right frontal lobe (Class 2) at *c*. There were 190 gm. of blood in the left subdural space covering the entire left cerebral hemisphere, and only a few grams on the right side at *c*.

to the Hospital of the House of Correction. Here skull fracture was diagnosed, and he lived only thirty-five minutes.

Postmortem examination revealed a fracture of the right middle fossa 18.5 cm. long, 200 gm. of blood extradural in the right temporo-parietal region, superficial bruises of the outside of the right temporal lobe, and a thin clot of blood covering the right temporal lobe. There was no external sign of injury.

CASE 16.—A man, aged 49, found on the street by the police at 1 a. m., was taken to the police station, where he remained four hours, and then to a private hospital, where a physician diagnosed skull fracture and alcoholism. He was then transferred to the Hospital of the House of Correction at 6 a. m., and died the same day at 7:40 a. m. Skull fracture was diagnosed in the latter hospital.

Postmortem examination revealed a fracture of the right posterior fossa and traumatic diastasis of the right lamb-

of Correction, where he died, June 10, at 12 m. Basal skull fracture was diagnosed.

Postmortem examination revealed a fracture of the midline of the vault and posterior fossae, 50 cm. long; also there were extensive contusions of the undersurfaces of the frontal and temporal lobes of both sides, 16 gm. of blood subdural at the bruises, 30 gm. extradural along the superior longitudinal sinus, and meningitis of the left temporal lobe.

CASE 20.—A man, aged 70, was arrested for acute alcoholism and kept in a police station for ten hours; then he was removed to the Hospital of the House of Correction, where he remained two days; lobar pneumonia and delirium tremens were diagnosed.

Postmortem examination revealed a fracture of the right middle fossa, 17.5 cm. long, a large laceration of the right parietal and temporal lobes reaching to the lateral ventricle, 75 gm. of blood outside the dura and covering the right parietal region, and extensive hemorrhage into the right side of the scalp behind.

Other cases, such as these, concern cranial fracture recognized by physicians, and the patients transferred from one hospital to another:

CASE 21.—A man, aged 62, was run over by an automobile about one hour before entrance to a hospital, where he was given first aid; he was then taken to another hospital, where a decompression operation was performed above the right ear; here he remained for three or four days, and was then taken to the Cook County Hospital, where he lived three and one-half days and where old skull fracture, infected decompression wound and fractured ribs were diagnosed.

Postmortem examination revealed a fracture through the right petrous bone, 18 cm. long, superficial contrecoup bruises of the frontal and temporal lobes, fibrinopurulent

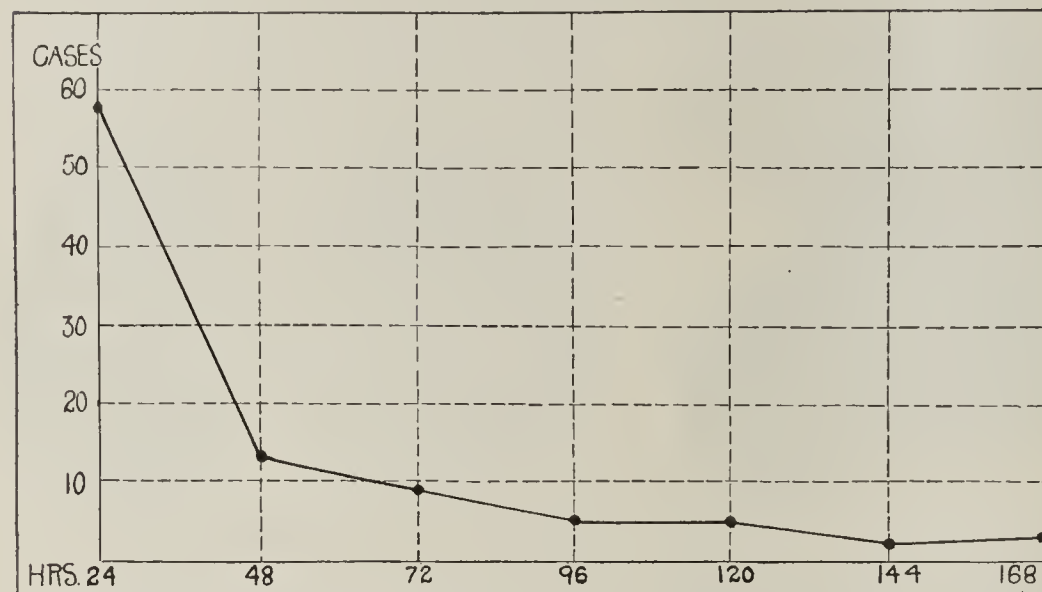


Fig. 33.—Time of death of ninety-five of the 104 patients dying with large extradural hemorrhages. Of the nine not shown in this graph, five were found dead and four died between the eighth and the twenty-second day after entrance to hospital. (Other details connected with some of these extradural hemorrhages, diagnosis, operations, etc., are given in the article by Dr. Moody.)

doid suture, altogether 24 cm. long, in addition to contrecoup bruises of both frontal and the left temporal lobes, all superficial except the latter, which reached to the lateral ventricle; there was blood in all of the ventricles of the brain. There was only a little subdural hemorrhage about the bruises. The scalp was lacerated at the inion.

CASE 17.—A man, aged 44, was arrested at 2 a. m. and taken to a police cell, where he remained until 11 a. m. the next day, the ambulance physician having diagnosed incipient delirium tremens. He became violent and was taken to the Hospital of the House of Correction, where he lived eighteen hours, and where delirium tremens was again diagnosed.

Postmortem examination revealed a linear fracture of the left lambdoid suture, right parietal bone and right middle fossa; there were also a contrecoup laceration of the left frontal lobe 4.5 cm. deep, a large subdural clot covering the top and side of the left frontal lobe, a small extradural clot in the right middle fossa, and hemorrhage into the right eyelid. There was no other sign of injury of the scalp, but in the deep scalp tissues of the right parietal region there was hemorrhage.

CASE 18.—A man, aged 24, to escape the police, jumped off a train into the Drainage Canal. At the Hospital of the House of Correction, where he stayed one week, no diagnosis was made. At home he complained of headache, and after ten days was removed to Cook County Hospital, where purulent meningitis was diagnosed, and where he lived one day. Postmortem examination revealed a fracture of the ethmoid plate and sella turcica, superficial contusions of both frontal lobes, and meningitis of the base.

CASE 19.—A man, aged 53, was found intoxicated by the police, 8:15 p. m., June 6; the police took him to a police station, where he fell on the floor; the wounds sustained were dressed at a private hospital, and he was again taken to the police station, where he remained until 11:30 p. m., June 7. He was then removed to the Hospital of the House

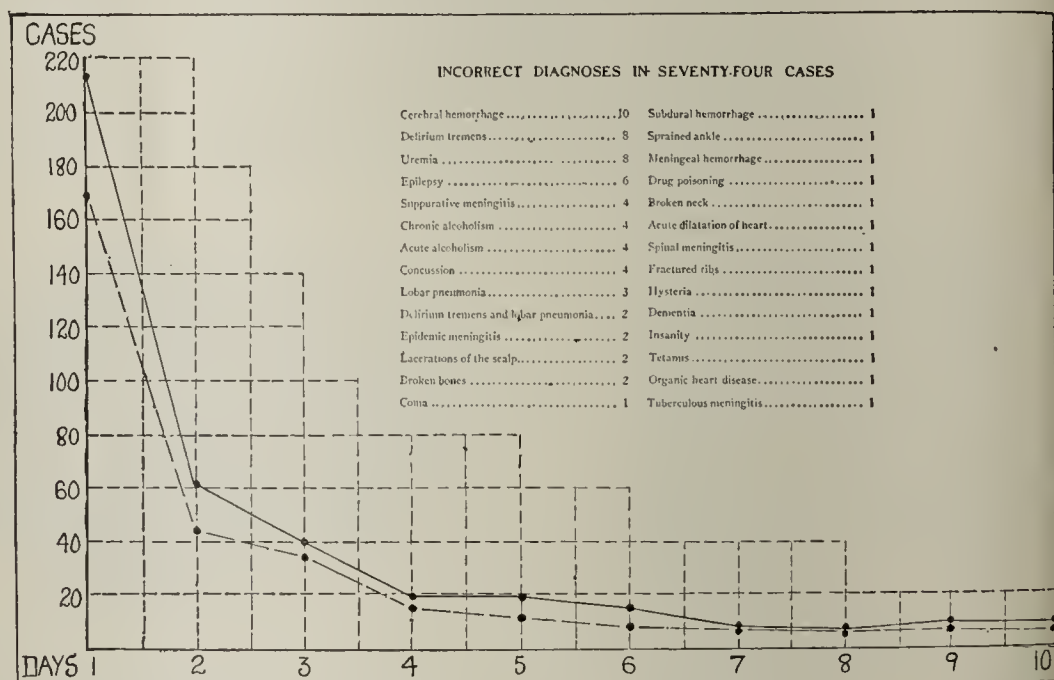


Fig. 34.—Time in twenty-four hour periods of death from fracture of the cranial bones and brain injuries of 403 of the 504 patients (upper line), and number of correct diagnoses during the same periods (lower line). The 101 remaining are not included because the time for eighteen of them was from eleven to twenty-two days, inclusive; twenty-seven had to do with persons found dead; for thirty-eight the records were incomplete; and eighteen concerned healed fractures. Any consideration of diagnosis must take into account the time under observation. Therefore, such charts as were used by Bissell and LeCount (*A Consideration of the Relative Frequency of the Various Forms of Coma*, THE JOURNAL, March 27, 1915, p. 1041; Feb. 17, 1917, p. 500) are continued here.

meningitis of the top of the brain, and purulent ependymitis.

CASE 22.—A man, aged 37, was struck by a street car at midnight, December 18, and taken to a private hospital, where skull fracture was diagnosed, and where he remained for five days. Because of inability to assure payment for hospital service, the patient was transferred to the Cook

County Hospital, where he lived until December 29, altogether eleven days.

Postmortem examination revealed a linear fracture of the midline of the base and left petrous bone, 38.5 cm. long; there were also lacerations of both frontal lobes, contusions of the temporal lobes and a direct bruise of the undersurface of the cerebellum, a few small subdural clots at the lacerations, and fibrinopurulent meningitis of the cerebellum.

TRAUMATIC FRACTURE OF THE
CRANIAL BONES

CLINICAL CONSIDERATIONS, WITH ESPECIAL
REFERENCE TO EXTRADURAL
HEMORRHAGE *

W. B. MOODY, M.D.
CHICAGO

Between August, 1911, and June, 1918, 908 patients entered the Cook County Hospital for "skull fracture." This diagnosis was made certain for 547 of these either by operation or by postmortem examination. Fracture of the cranial bones was diagnosed by means of the roentgen ray for 105 others. The remainder (256) include patients whose illness and injuries were recovered from, and the conclusion that they also suffered from traumatic fracture of the cranial or other skull bones was not as adequately confirmed; for some small part of these, especially those in the hospital only a few hours, the diagnosis may

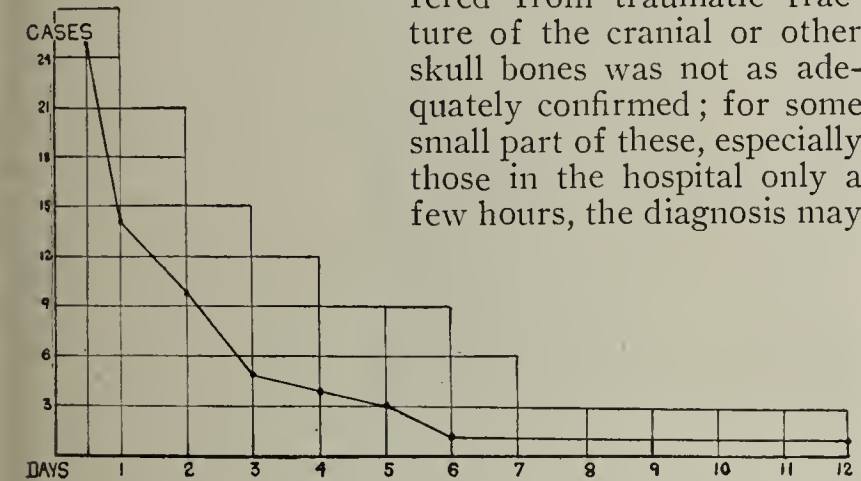


Chart 1.—Number of days under observation of sixty-three patients with extradural hemorrhage found at postmortem examination but not recognized clinically.

have been wrong. Postmortem examination was made in all deaths but sixty-two; in forty-one of these no fracture of the skull was actually demonstrated.

These considerations, as well as others shown in the accompanying table, are simply prefatory, since it is proposed to discuss here the extradural traumatic middle meningeal hemorrhages. Of the total 908 thought to be skull fractures (547 demonstrated as such), there were 100 with extradural hemorrhages of such size that compression of the brain by the blood was the chief cause of death. This condition was established for all the 100 patients either by operations, by postmortem examinations, or by both.

Diagnosis of traumatic extradural middle meningeal hemorrhage, found postmortem, was not made clinically in sixty-three instances. The time under observation of these sixty-three patients, whose compression of the brain was not recognized, is shown in Chart 1. It will be noted that twenty-four were in the hospital two days or more, the longest period for any single patient being twelve days.

Among other details regarding these extradural hemorrhages, shown in the table, is that all of the thirty-seven patients in whom the condition was recog-

nized had a decompression operation. Of this number, twenty-six died, twenty-one being operated on within twelve hours after entrance to the hospital (Chart 2). The longest period any one patient was under observation before operation was seven days. Following operation, eighteen died within twenty-four hours, three inside of the next two days and one patient on the twenty-second day (lobar pneumonia).

As stated, sixty-three of the extradural hemorrhages were not recognized clini-

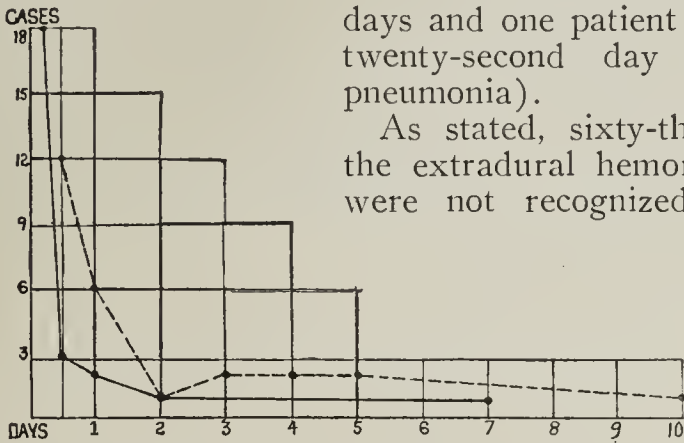


Chart 2.—Time under observation before operation (solid line), and time between operation and death (broken line), of twenty-six patients with extradural hemorrhages, diagnosed and operated on, one patient dying on the twenty-second day with lobar pneumonia is not represented.

cally. The maximum weight of the extradural blood found postmortem was 246 gm., the minimum, 40 gm., with an average of 110.5 gm. for the sixty-three. In the clinical records for all but two there were symptoms generally regarded as useful in the recognition of compression of the brain; nine patients had hemiplegia, nine rigidity of the muscles on one side, and nine had convulsions; in twenty-three there was a positive Babinski reflex, and in some of the sixty-three the symptoms were combined in various ways.

In general, the pulse at the time of entrance and for a short time afterward was full and strong, from 65

FINDINGS IN FIVE HUNDRED AND FORTY-SEVEN CASES OF
SKULL FRACTURE *

	Fracture Demon- strated	Fracture Not Demon- strated	Extra- dural Hemor- rhage
Died (male).....	407	34	77
Died (female).....	37	7	12
Recovered (male).....	94	285	10
Recovered (female).....	9	35	1
Neeropsies.....	423	...	85
Operated on and died.....	82	...	26
Operated on and recovered.....	55	...	11
Entered conscious.....	108	164	13
Entered unconscious.....	436	194	87
Convulsions.....	66	19	14
No clinical evidence of injury.....	80	55	17
Positive Babinski reflex.....	156	64	33
Patellar reflex absent.....	119	42	26
Patellar reflex exaggerated.....	103	59	26
Hemiplegia.....	49	7	21
Spasticity.....	31	7	15
Facial paralysis.....	36	19	8
Ptosis of eyelids.....	12	3	2
Clear cerebrospinal fluid (taken before death)	25	20	7
Meningitis.....	39	2	0
Bleeding from nose.....	163	107	24
Bleeding from mouth.....	59	43	6
Bleeding from ears.....	132	118	23
Eye reflexes normal.....	156	203	29

* In sixty-two deaths, no postmortem examination was made. In twenty-one of these, fracture had been previously demonstrated. Roentgenologic diagnosis of skull fracture was made in 133 instances, 105 not being subsequently confirmed (by operation or postmortem examination). There was no roentgenographic evidence of fracture of the skull in ninety-six instances. Seventeen of these were found at neeropsy to be fracture.

to 90, the temperature from 97 to 99 F. The most conspicuous features of pulse and temperature records, however, are that in the eleven recovering with decompression operation, the pulse and temperature were both lower than in other patients, and this pertains equally to conditions before and after operation.

* From the Cook County Hospital.

In twenty-seven of the clinical records blood pressure is recorded, without, however, anything of importance to comment on here because the observations were not repeatedly made for any single patient.

The other important features of these head injuries with one exception are indicated in the table. This exception concerns the records of blood examinations, and of all these 107 were found in the entire number (908). That there was an average leukocytosis of 15,300 apparently makes this condition of importance in the recognition of skull fracture. The number is so large that it is difficult to be accounted for by bronchopneumonia, and still less readily by meningitis; moreover, many of these blood examinations were made shortly after entrance.

POSTDIPHTHERITIC PARALYSIS

WITH REPORT OF TWO CASES *

SAMUEL W. BOORSTEIN, M.D.

NEW YORK

The most common form of polyneuritis encountered in children is diphtheritic paralysis. Not many of these patients, however, come under the observation of the orthopedic surgeon, because either the children recover without any treatment, or they are brought to him too late, just as the case used to be with patients with anterior poliomyelitis who were brought to him only after the deformities were marked. Thus, we do not have the frequent chance to see the proper benefit of early orthopedic treatment in diphtheritic paralysis. I am anxious to emphasize particularly the value of orthopedic treatment in relieving the distressing respiratory symptoms.

Diphtheritic paralysis occurs usually in the second or third week after the illness. The frequency of its occurrence after the injection of antitoxin is hard to state, while without antitoxin it occurs in about 5 to 15 per cent. of the cases.

A distinction may be made between a localized and a generalized paralysis. In localized paralysis the soft palate is usually involved. The palate alone may be involved or the muscles of the pharynx and larynx may also be paralyzed as well as the ocular muscles. Paralysis of the muscles of accommodation is present, but reaction to light remains. Paralysis of the pharyngeal muscles causes trouble in swallowing. There may be regurgitation of fluids through the nose caused sometimes by difficulty in swallowing and again by the entrance of food into the larynx, owing to anesthesia of the epiglottis and paralysis of the muscles of deglutition. The paralysis may involve the recurrent laryngeal muscles, causing hoarseness and aphonia.

In the generalized form, the extremities are next affected. In severe cases there may also be involvement of the muscles of the trunk and neck, and sometimes of the diaphragm. This distinguishes diphtheritic paralysis from other forms of multiple neuritis.

In cases in which the extremities are involved, there is at first weakness, followed by paresthesia and then pain. Then follow disturbances of movement, of sensation and of coordination. Walking is exceedingly difficult or impossible. Westphal's sign is always present, and Romberg's symptom frequently may be noted.

There are disorders of function of the bladder and the rectum. Paralysis of the cervical muscles may be so complete that the head cannot be held upright.

Respiratory paralysis may be due to involvement of the phrenic or the intercostal nerves. It is shown by occasional attacks of dyspnea and coughing. As the diaphragm is usually affected, the breathing is entirely thoracic. The respiratory movements are rapid, but irregular, shallow and ineffectual. There is cyanosis. The anxiety, distress and apprehension of the patient are sometimes terrible. There is constant dread of impending suffocation.

PROGNOSIS

Duration of the affection depends on its severity and extent. A patient may recover from a slight localized paralysis in a few weeks. The severer form lasts for many months, even for a whole year. Recovery is, as

a rule, to be expected, though often it is much delayed and frequently leaves deformities. The deglutition paralysis is quite serious. Respiratory paralysis, myocarditis and nephritis are annoying complications.

TREATMENT

Strengthening the diet is an important factor in the treatment of this condition; hence the patient should be fed by a stomach tube if he is not able to eat. The injection of serum is of doubtful benefit. Absolute rest in bed is important, and early contractures should be prevented. Massage and exercise are urgently recommended.



Fig. 1 (Case 2).—Position of collar. This photograph was taken after recovery.

REPORT OF CASES AND COMMENT

CASE 1.—History.—O. R., boy, aged 3 years, referred to me by Dr. Luttinger, Jan. 27, 1919, had had diphtheria four weeks before. No antitoxin had been administered, and paralysis of all four limbs developed two weeks after the attack.

Examination.—There was paralysis of all four limbs and of the neck. The patient appeared apathetic. There was a marked drooping of the head forward; the eyelids dropped; speech was distinctly nasal, and could not be understood at all. Respiration was thoracic, rapid, irregular and shallow. The patient could not sit up. There was marked interference with deglutition.

Treatment and Results.—After noting the interference with the pharyngeal muscles and fearing the stretching of the paralyzed neck muscles, I decided to apply something to prevent the stretching (devised on the same principle as apparatus used in anterior poliomyelitis or other forms of paralyzed muscles), and perhaps also to facilitate the respiratory difficulties. Remembering the principle of the Thomas

* Read before the Orthopedic Section of the Academy of Medicine, Oct. 17, 1919.

collar used to support the neck in cervical Pott's disease, I made a collar from thick felt, $1\frac{1}{2}$ inches in thickness and rather solid, and applied it in the vertical position. The width of the collar corresponded to the distance between the chin and the sternum when the head was slightly hyperextended (Fig. 1). This piece of felt was enveloped in softer felt, one-eighth or one-sixteenth inch in thickness. The collar was put on, encircling the neck, and the ends were sewed together. To my great surprise the child began to breathe better immediately. I then strapped the feet to prevent drop foot, and ordered the patient to bed, leaving the general treatment to the family physician, Dr. Luttinger. He took a culture from the child's nose and found diphtheria bacilli still present. He administered immediately 20,000 units of antitoxin. In a week a spinal brace was applied, the collar was left on, and massage was ordered. Later on, exercises were added. The exercises were, of course, the ones used in anterior poliomyelitis. In one and one-half months the child made a perfect recovery.

Though diphtheritic paralysis is curable, considering the severity of the symptoms, I believe that the orthopedic treatments, especially the application of the collar, hastened the recovery. I do not believe that the antitoxin was responsible for the recovery, as most pediatricians admit the uselessness of antitoxin in such a late stage. I was, however, skeptical about the orthopedic treatments till I had a chance to treat the second patient, who presented very interesting features:

CASE 2.—History.—S. W., boy, aged 7, admitted to the medical service of Dr. T. F. Reilly, Fordham Hospital, April 25, 1919, had had diphtheria two months previous to admission. He had received 5,000 units of antitoxin on the second day after the attack. Six weeks later paralysis of both upper and lower extremities developed. The child could not speak or swallow, and had to be fed by a stomach tube for ten days.

Examination.—When I was called to see the patient, April 29, there were paresis of both upper extremities and almost complete paralysis of both lower extremities with a tendency to drop foot. Breathing was thoracic, superficial and shallow. The face was dull and apathetic. The head drooped forward and the child could not hold it in an upright position. The eyelids dropped. The patient could not speak. He was still being fed by the stomach tube. If liquids were taken, regurgitation through the nose occurred.

Treatment and Results.—Remembering the benefit derived from the felt collar in the first case, I applied a similar one to the second child. Plaster casts were applied to the feet at the same time. The child began to improve immediately. The sudden improvement brought great joy to the kind nurses of the children's ward, who had shown a devoted interest in the case. Within a few days the child took food himself and showed marked improvement in his speech. May 8, massage and exercises were ordered; May 15, the child was able to take a few steps when he was supported. The casts were removed, May 31. The child continued to improve and, June 30, he was discharged, entirely cured, without any deformity whatever.

It was a source of joy to note the interest of the nurses of the children's ward, who spared no pains to carry out all orders. The last examination, Aug. 26, 1919, disclosed no paralysis or weakness of any muscle.

This case emphasizes a few points that are in contrast to those noted in the first case. Antitoxin was given on the second day, and still paralysis developed. The improvement after the application of the collar was remarkable: before its application the patient was getting worse all the time.

The child was cured without a second dose of antitoxin, which means that the improvements in the first case were also due entirely to the orthopedic treatments.

Though children with diphtheritic paralysis do recover, still the very rapid recovery noted in these two cases is undoubtedly due to the orthopedic methods employed.

The benefit of the collar can possibly be explained on the theory that mechanically it relieves the pressure on the trachea and esophagus induced by the pressure of the head. I am not, however, prepared to say whether that is really the reason.

529 Courtlandt Avenue.



Fig. 2 (Case 1).—Complete recovery. Note perfect symmetry of the face. Child is holding the brace which he was wearing before.

Effect of Alcohol.—The latest number of the special report series issued by the national health insurance medical research committee embodies the results of an investigation made on the effects of alcohol on manual work and the coordination of fine muscular movements. The pieces of test work to be done consisted in typing a memorized passage and correlating the number of errors, with the speed attained, in reproducing a given set of figures many times with a standard pattern adding machine and in pricking with an awl vertical rows of dots on a target suspended vertically at arm's length. The subjects included eight men and five women, and duplicate sets of experiments were conducted before and after the taking of moderate quantities of alcohol in the form of wine, etc., both while fasting and with food. The results of the experiments went to show that alcohol produced some effect in all of the individuals tested by the typing and adding machine methods. The degree of effect depended largely on whether the alcohol was taken on an empty stomach or with food, for on an average it was about twice as toxic under the former conditions as under the latter. In some subjects a moderate dose of alcoholic liquid, taken with food, produced no measurable reaction. Such a nonreactive dose amounted to one glass of port (= 18.5 c.c. alcohol) in a male subject, and to 4 ounces of port (= 22 c.c. alcohol) in a female subject. When the alcohol was taken with food, the effect was slightly longer in reaching its maximum. When alcohol (30 c.c.) was taken in 5 per cent. strength, the effect produced was about three fourths as great as when it was taken in 20 per cent. or 40 per cent. solution. A similar difference was observed when taking diluted brandy (10 per cent. alcohol) and "neat" brandy (37 per cent. alcohol).—*Medical Officer*, Nov. 15, 1919.

BLOOD PRESSURE IN OPERATIVE
SURGERY *

ALBERT H. MILLER, M.D.

PROVIDENCE, R. I.

As a factor in the preliminary examination, for judging the condition of the patient during operation and in following up the postoperative recovery, the blood pressure examination is of great importance although as yet imperfectly appreciated.



Fig. 1.—Simple blood pressure apparatus for use in operative surgery: stethoscope bell strapped to the arm and attached to ear pieces by tubing; sphygmomanometer cuff wrapped snugly around the arm and secured with a safety pin; gage and bulb connected to the cuff by tubing.

PREOPERATIVE EXAMINATIONS

The physical examination, which should invariably be made before any patient undergoes a surgical operation, is incomplete without a study of the blood pressure. Some of the pathologic conditions which bear directly on the chance of recovery from the operation and the anesthetic are indicated by characteristic blood pressure readings. Nephritis is accompanied by a marked increase in the systolic and diastolic pressures. Tuberculosis is regularly accompanied by a low systolic pressure. Myocarditis is indicated by a low pulse pressure. Incompetence of the aortic valve is indicated by a high pulse pressure and a low diastolic pressure. In some cases of aortic disease and also of exophthalmic goiter, the fourth phase of the blood pressure wave extends to zero and the fifth phase is lacking. With the stethoscope applied at the elbow or at the popliteal space, the pulse sounds are heard without constricting the limb. In other cases showing the high pulse pressure of aortic incompetence or of exophthalmic goiter, the same condition is found while the patient is under ether anesthesia, but this passes away early in the recovery.

For determining the index of the patient's resistance, the rule given by Moots¹ is of great value. It may be thus stated:

The pressure ratio, a fraction having the pulse pressure as numerator and the diastolic pressure as denominator, may be normal between 40 and 60 per cent. If the ratio is either high or low, there is reason to apprehend danger. If the ratio lies between 25 and 75 per cent., the case is probably operable; if outside these limits, it is probably inoperable.

In checking up the accuracy of this rule in a series of 1,000 cases, it was found that in the operable cases, 3.23 per cent. of the patients died and 96.77 per cent. recovered; in the inoperable cases, 23.07 per cent. of the patients died and 76.93 per cent. recovered.²

ROUTINE EXAMINATIONS DURING OPERATIONS

The importance of routine blood pressure tests in the course of surgical operations is not generally appreciated. Catastrophes occur daily which might have been foreseen and prevented by attention to this subject. The apparatus required is simple. The bulb or pump with release valve, for raising or lowering the pressure in the cuff, is joined to the gage by a short piece of tubing. By a T, inserted in this tubing connection is made with the usual cuff by a tube 3 feet in length. The gage is attached to the patient's pillow so as to be in the anesthetist's field of view. The cuff is wrapped smoothly about the arm and the outer folds secured by a safety pin. A flat stethoscope bell is connected to ear-pieces by a tube 3 feet long. The bell is provided with an elastic garter for keeping it in place at the bend of the elbow. This apparatus is put in place before the anesthesia is commenced. At five or ten minute intervals the anesthetist takes, by the auscultatory method, the systolic, diastolic and pulse pressures and records them on a chart on which are also entered the pulse and respiration rate, and other data of interest concerning the anesthesia or the operation. Changes in the blood pressure will result from excitement, from obstruction to respiration, from overdose of the anesthetic, from changes in the position of the patient, from unusual temperature in the operating room, and from hemorrhage or as the result of operative manipulation.

Hot and cold applications within the abdomen cause a marked fall in the systolic pressure, but the change



Fig. 2.—Blood pressure apparatus from anesthetist's point of view: gage attached to pillow in easy view, thus obviating danger of leaving pressure in the cuff between observations; during operations, the arm to which the apparatus is attached need not be exposed.

is usually transient. A drop in the temperature of the operating room is followed by a corresponding fall in the blood pressure, especially in the cases in which there is considerable visceral exposure. When the operating room temperature is raised the blood pressure slowly recovers. An operation performed in a room at a temperature of from 50 to 60 F. is certain to be accompanied by a considerable fall in the blood pres-

* Read before the Central New York Medical Association, Syracuse, N. Y., Oct. 30, 1919.

1. Moots, C. W.: Am. J. Obst. 74: 996 (Dec.) 1916.

2. Miller, A. H.: Boston M. & S. J. 180: 12 (Jan. 2) 1919.

sure, which will be especially marked if the incision is extensive and if there is a large exposure of viscera. The operating room temperature should be a matter of concern and should not be allowed to fall below 70 F. in the course of any major operation.

EFFECT OF POSTURE

To determine the effect of posture on the blood pressure during operations under anesthesia, a series of 1,000 cases has been tabulated with regard to posture and blood pressure. In this study, some confusion in the determination of standard pressures for comparison was inevitable. The standard pressures were taken in the dorsal position; some on the day before operation, some on the day of operation before the commencement of anesthesia, and some in the course of the anesthesia and the operation. The standard pressures taken on the day before operation are sometimes increased because of excitement. On the day of operation, the readings are frequently depressed as a result of the technic of preparation, including catharsis and deprivation of food and water, and following preliminary medication. The pressures taken in the course of operations may have been modified by the action of the anesthetic or by operative manipulations. The pressures for comparison in the dorsal position have been taken from ten to twenty minutes after the commencement of anesthesia. Pressures in other positions have been taken at

TABLE 1.—LACK OF REACTION TO EXPOSURE AND MANIPULATION OF INTESTINE FOR MORE THAN AN HOUR UNDER LIGHT ANESTHESIA IN EXPLORATORY LAPAROTOMY AND REDUCTION OF HERNIA THROUGH FORAMEN OF WINSLOW *

Time	Ether Dosage, Fluidounces	Pulse	Respiration	Blood Pressure		Pulse Pressure	Remarks
				Systolic	Diastolic		
Day before	..	120	24	120	85	35	
9:45	1	...	..	...	..	..	Ether anesthesia
9:50	2	132	28	...	...	...
9:55	3	...	..	...	..	..	Operation begun in lithotomy position
10:05	4	120	36	125	95	30	
10:10	5	...	..	...	..	..	Abdominal operation in dorsal position
10:15	6	136	48	...	...	...
10:25	7	124	36	...	...	...	Exposure and manipulation of intestine
10:30	8	...	..	130	90	40	
10:40	...	132	40	...	...	...
10:45	...	...	..	130	90	40	
10:55	...	108	36	...	...	...
11:00	...	...	..	130	90	40	
11:05	...	116	32	...	...	...	Appendectomy
11:10	9	...	..	135	95	40	
11:15	10	104	28	...	...	...
11:20	11	...	..	135	95	40	
11:25	...	...	..	...	..	..	Operation completed

* Pupil, contracted throughout; color, normal throughout. Recovery was uncomplicated.

a like period after the particular position has been assumed.

In the dorsal position, the systolic pressure varied less than 10 mm. in 55 per cent. of the cases, increased more than 10 mm. in 22.5 per cent., and diminished more than 10 mm. in 22.5 per cent.

In the lithotomy position, the systolic pressure varied less than 10 mm. in 64.5 per cent., increased in 24.4 per cent., and diminished in 11.1 per cent.

In the combined lithotomy and Trendelenburg position, the systolic pressure varied less than 10 mm. in 25

per cent., increased in 50 per cent., and diminished in 25 per cent.

In the reverse Trendelenburg position, the systolic pressure varied less than 10 mm. in 40 per cent., and diminished more than 10 mm. in 60 per cent. of the cases.

In the Trendelenburg position, the systolic pressure varied less than 10 mm. in 38.7 per cent., increased in

TABLE 2.—RESULT OF TRANSFUSION, EXPLORATORY LAPAROTOMY AND GASTRO-ENTEROSTOMY FOR PYLORIC ULCER WITH EXTENSIVE HEMORRHAGE *

Time	Gas - Oxygen, Liters per Min.	Pulse	Respiration	Blood Pressure		Pulse Pressure	Remarks
				Systolic	Diastolic		
Day before	..	122	..	60	30	30	9 p.m.
9:15	..	...	..	70	40	30	
9:45	..	...	..	...	..	..	Transfusion of 750 c.c. of blood from sister; procain anesthesia
10:00	..	...	..	110	60	50	
10:10	..	...	..	120	80	40	
10:15	10	...	..	...	..	..	Gas-oxygen anesthesia
10:20	5½	...	..	...	..	..	Operation begun
10:25	...	...	..	...	..	..	Exploratory laparotomy
10:30	..	108	24	120	80	40	
10:40	..	108	30	120	80	40	
10:45	..	112	24	130	90	40	
10:50	4½	96	..	130	90	40	
10:55	...	100	..	120	90	30	Gastro-enterostomy
11:00	5½	100	28	120	85	35	
11:05	...	108	..	125	90	35	
11:10	4½	96	28	130	90	40	
11:15	...	108	..	120	85	35	
11:20	5½	104	24	125	85	40	
11:25	..	112	..	...	...	...
11:30	..	112	..	90	60	30	
11:35	..	...	..	90	65	25	
11:40	4½	112	..	100	70	30	
11:45	..	...	..	...	..	..	Operation completed

* Pupil, contracted throughout. Recovery was normal save for phlebitis, ninth day.

4.1 per cent., and diminished in 57.2 per cent. of the cases.

These figures indicate that in this series of operations under anesthesia: In the dorsal position, the systolic pressure tended neither to increase nor diminish; in the lithotomy position, it tended to increase; in the combined lithotomy and Trendelenburg position, the increase in the systolic pressure was exaggerated; in the Trendelenburg position, the pressure tended to decline; and in the reverse Trendelenburg position, there was a marked tendency to decline in the systolic pressure.

The routine use of the reverse Trendelenburg or Fowler position following certain types of operation has undoubtedly contributed to unnecessary fatalities. Its use must be condemned unless the patient's condition has first been proved satisfactory by blood pressure tests.

EFFECT OF ANESTHESIA

By a light degree of anesthesia, in the absence of efficient dosimetric methods, we refer to a condition of anesthesia characterized by quiet respiration, a contracted pupil, with no increase in the secretion of perspiration, mucus and tears, and the pulse and blood pressure not markedly affected. The anesthetics, when carefully administered, do not usually cause a rise in blood pressure. With cyanosis, the systolic pressure is raised. If excitement be present, the systolic and diastolic pressures and the pulse rate are increased. A profound degree of general anesthesia is likely to be accompanied by a rapid decline in blood pressure. The spinal administration of anesthetics is followed by

a distinct drop in blood pressure which frequently reaches the danger zone; in one instance, the systolic pressure had declined to 20 mm. ten minutes after the administration.

The effect on blood pressure of overdosage with anesthetics is not generally realized. Cholecystectomy, hysterectomy and other major operations if free from hemorrhage may be performed under light anesthesia without marked effect on the blood pressure or the pulse rate. Under the overdosage of the anesthetic frequently employed, a tremendous decline in blood pressure is regularly noted.

INDEX OF SURGICAL SHOCK

A falling blood pressure with an increasing pulse rate is the most certain indication of the incidence of surgical shock. For determining the presence of shock, McKesson's³ rule is an important guide. It is thus stated:

With a pulse rate of 120 or more, a pulse pressure of 20 mm. or less, and a diastolic pressure of 80 mm. or less in a patient, who, at the beginning of the operation, had presented normal pressures, frank shock has occurred. If these low pressures are continued without improvement for more than half an hour, a vicious circle is generally established, which, without treatment, will cause the death of the patient.

In checking up the accuracy of this rule, it was found that in patients who were within the danger zone as determined by the rule for more than twenty-five minutes, the mortality rate was 69.23 per cent.²

CONCLUSIONS

Before every surgical operation, a physical examination should be made including an estimation of the blood pressure.

During operations, blood pressure tests provide an invaluable index to surgical shock, hemorrhage, and anesthetic overdosage.

The sphygmomanometer should be used not only in selected cases but also as a routine measure. In this way we shall become accustomed to normal variations in the blood pressure during operations and be able to detect the signs which indicate vital changes in the patient's condition.

The Fowler position should not be used after an operation until the circulatory condition has been proved to be satisfactory by blood pressure examinations.

131 Waterman Street.

3. McKesson, E. I.: Am. J. Surg. (anesthesia supp.) 30:2 (Jan.) 1916.

The Doctor's Dilemma.—The doctor, like his brother professional men, finds himself in a tight place in these days where income and outgo make such close connections. But the doctor has an additional grievance. The salaried man gets his pay, such as it is, on time. The doctor frequently has to wait for his and sometimes waits in vain. All the other bills apparently take precedence over the doctor's. Not, surely, because his services are less valued or because he is less in need, but more because he has the feeling that in his profession service should rank above profit. Were he to emulate the tradesman, he would run the risk of lowering the splendid tradition of his brotherhood. A minister almost never sues for his salary. A doctor must look at it in somewhat the same way. If the ethics of a profession stand in such wise, an obligation of honor surely lies on those whom the profession serves to accept the same high standard and live up to it.—Milwaukee Journal.

AN OUTBREAK OF BOTULISM *

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BOSTON

The outbreak of botulism reported here occurred in January, 1920, in an Italian family, living in the Bronx, New York City. The source of the toxin was shown to be a glass jar of factory packed California ripe olives. These olives, consumed as such and also as part of a salad, caused the death of six of the seven members of the family who ate of them. Bacteriologic examination of these olives was carried out by Mr. Paul Orr in the Department of Preventive Medicine and Hygiene of the Medical School of Harvard University; Dr. Charles Krumwiede of the Research Laboratories of the New York City Department of Health; the Microbiological Laboratory at Washington, D. C., and Dr. Gettlar of Bellevue Hospital, New York. At the present writing it is known that at least two of these laboratories have been successful in demonstrating the presence of *Bacillus botulinus* and its toxin. Mr. Paul Orr, working in this laboratory, has succeeded in isolating from the remainder of the olives used by the family a bacillus morphologically and culturally characteristic of *B. botulinus*. A Mandler filtrate of the liquor in which the olives not eaten were found proved toxic to animals as follows: When injected intraperitoneally into a 12 gm. white mouse, 0.004 c.c. of this filtrate caused death in seventy-four hours. One-tenth c.c. of this filtrate given to a 200 gm. guinea-pig by mouth resulted in death in sixty-eight hours. A 410 gm. guinea-pig which was given 3 c.c. of the same filtrate, by mouth, was found dead twelve hours later. One-tenth c.c. of antitoxin (Graham) injected intraperitoneally and simultaneously with 0.1 c.c. of the Mandler filtrate failed to protect an 11 gm. white mouse, death occurring in four hours. This indicated that the toxin in the olives was formed by an organism not homologous to the one used by Graham in the preparation of the antitoxin. The toxin was destroyed by heating to 80 C. for two minutes.

There were eight members in the D. family: Mary, the mother, aged 33; Paul, the father, aged 36; Dominica, a son, aged 16; Antonio, a son, aged 13; Angelo, a brother of Paul, aged 26; Dominick, a brother of Paul, aged 46; Lena, a daughter, aged 9, and Joseph, a son, aged 7. Dominick lived down town in Manhattan, but all the other members of the family lived together in the Bronx. Dominick frequently brought ripe olives to his brother's home, and it was he who furnished the jar of olives and made the salad that caused the deaths.

The diagnosis was not made until a necropsy performed on the body of the second member of the family to die suggested the possibility of food poisoning. It was then recalled that an outbreak of botulism, due to ripe olives (the Detroit outbreak), had been described in a very recent journal. Investigation of this clue led to the discovery that all the members of the family had partaken of ripe olives, and were presenting symptoms of botulism. A detective was immediately sent to the D. home with orders to confiscate all foodstuffs in the house.

* This work is a part of the investigation of food poisoning, conducted under the direction of Dr. M. J. Rosenau, professor of preventive medicine and hygiene, Medical School of Harvard University. The investigations are made under the auspices of the Advisory Committee on the Toxicity of Preserved Foods of the National Research Council, and under a grant of the National Canners Association.

The investigation here reported was begun after four of the family were dead, one so far gone that he could give no information, and one so ill that he could hardly talk. The two surviving ones were children, aged 9 and 7, respectively, and consequently could not be depended on for much information. As a result, many very desirable details are lacking in this report. Through the kindness of Mr. B. R. Hart, Chief, Eastern District, United States Food and Drug Inspection, was able to work with the government inspectors, and thus secure much information which would not otherwise be available. Inspectors Olof Olsen and F. L. Volland, U. S. Bureau of Chemistry, the Fordham Hospital, the New York City Health Department, the Medical Examiner's Office, and Dr. Louis J. Ferrara offered all the assistance possible.

EPIDEMIOLOGY

The olives responsible for this outbreak were "giant" size, California ripe olives, packed in 14 ounce (net weight) glass, hermetically sealed jars. They were not the same brand of olives that were responsible for the outbreaks in Canton, Ohio, and in Detroit in August and October, 1919, respectively. The present available information makes it seem quite probable that they came from an entirely different section of California than the olives responsible for the first two outbreaks. The olives concerned in the present outbreak were packed by a California olive company for a New York City distributing company. They bore the private label of the latter company. The distributing company ordered the olives, Oct. 11, 1917, and received them, April 4, 1918; but they rejected this shipment because the olives were not of good quality, branding them as "impossible" and declining to put them on the market under their label. The olives were then placed in a New York warehouse by the California company. They were resold and placed on the market by the California olive company, which in the meantime had undergone a reorganization. After considerable shifting and circulation among several New York distributors and wholesale dealers, thirty cases, 720 bottles, of these olives, were sold, Oct. 28, 1918, to the retail dealer who, in turn, sold the infected jar to Dominick. The New York distributing company protested, not only to the California company, but also to dealers in New York, the sale of these olives which they had rejected, under their private label; but the labels were not removed, and the olives continued on the market. During the shifting and circulation of these olives, several of the persons who handled them stated that many of the jars were spoiled and unfit for sale. One man, on purchasing a retail grocery store, threw away thirty-seven jars because they were not in good condition. Whether or not any of these numerous spoiled jars contained *B. botulinus* will probably never be known. Of the thirty cases sold to the grocer who sold the olives to Dominick, only five and one-half cases, 131 of the original 720 bottles, were on hand when confiscated by the health authorities. The remaining 589 bottles had been sold to customers in the neighborhood, none of whom, however, had made any complaint to the storekeeper. Whether or not any illness had occurred in these homes, attributed to other causes, since the sale of these olives began (Oct. 28, 1918) was not ascertained.

The exact date on which Dominick purchased the olives that caused the outbreak is not definitely known;

but he says it was sometime after Jan. 1, 1920. Thus it will be noticed that the jar of olives responsible for the outbreak had been packed for at least twenty-six months, for it had been in New York City since October, 1917.

Among the things commandeered by the detective at the D. home was one-half bottle of ripe olives and two empty olive jars of the same size and bearing similar labels. The tin cover of the half filled jar was missing, but two other tin covers were found each bearing the same batch number. In view of all the facts concerning these olives, there is practically no doubt that they all came from the same batch. Dominick, before his death, stated that he had purchased these three jars of olives at the same store, one just before Christmas, one just after Christmas, and the third shortly after New Year's, 1920. They were carried to the D. home by Dominick as a delicacy, one jar at a time. Definite facts are not available, but it is reasonable to assume that one jar was consumed before another was opened, thus making it seem quite probable that the third jar was the one that contained the toxin.

As pointed out in the case histories, there is no definite proof that Mary, the first to die, ate ripe olives; but certainly all information available indicates that she opened this third jar of olives, January 8 or 9, and ate some of the olives, replacing the jar on its accustomed shelf, where it was later found by the other members of the family. The unsettled conditions and irregular status in the home following her death and funeral make it seem very probable that no olives were eaten until the following Tuesday night, January 13, when the rest of the family gathered at the home in the evening for supper. As accurately as could be attained, this meal consisted of macaroni with tomato sauce and a salad prepared from ripe olives, anchovies, pickled peppers, olive oil and vinegar. Dominick stated before his death that he prepared this salad, saying that the olives came from a jar taken from a shelf over the kitchen table, that this jar had been previously opened, and that "several" olives had been removed. He said that the other members of the family were seated about the table as he prepared this salad. Some of the olives were removed from the jar and placed on a plate, from which he took them one at a time, to cut them up for the salad. According to him the other members of the family helped themselves to these olives while awaiting the completion of the salad. He did not know whether some ate more heartily than others. He did state, however, that he noticed nothing wrong about the odor or taste of the olives, but on the contrary found them "very good," saying that he "liked them."

No statements concerning the odor and taste of the olives were obtained from other members of the family before they died. When asked if he washed the olives before putting them in the salad he nodded an affirmative answer, but this assertion is open to much doubt in view of the other facts of the case. Paul, the father, stated before his death that "everybody" ate olives. Lena, 9 years old, developed no symptoms, but insists that she ate one whole olive which her father handed her at her request. When asked why she ate no more she simply stated that she "didn't want any more," but said that she found neither the taste nor the odor disagreeable; that, in fact, she "liked them." She did not eat any of the salad. She said

that her brothers, Dominica and Antonio, were very fond of ripe olives, and that she saw them taking olives from the plate and open jar while the salad was being prepared. She also said that her mother was very fond of olives, and that she had seen her, on several occasions, remove olives from an open jar and eat them.

The exact hour at which this meal occurred is not known, but it is reasonable to assume that it was not before 6 p. m. Assuming such to be the case, definite symptoms of botulism had developed in all those who showed symptoms at all in from four to fifty hours after this meal.

REPORT OF CASES

CASE 1.—Mary, the mother of the family, was the first to become ill. Information concerning her death is found in the following statement made by Dr. L. J. Ferrara, her physician:

"Jan. 10, 1920, I was called in at 8 a. m. and saw the mother, Mary, in bed suffering from a choking sensation, with partial blindness. The history obtained was that she had been worrying and crying the entire night before. Vomiting began at 10 p. m., January 9. I looked in her throat and found it practically normal. I asked her to take a drink, which she was unable to swallow. I then examined the eyes and found them to react to light; she could recognize me and various objects which I held up to her; she said her vision was blurred. Temperature was normal. Her pulse was about 80, snappy and bounding. Reflexes were normal. There was no tenderness or pain in the abdomen. History as to possible poisoning from alcohol or food products was negative. At 12 noon (of the same day) I was recalled and found on my arrival that the patient was dead.

"On questioning, the husband, Paul, stated that his wife had been treated two years ago for kidney trouble; that since then she had had, off and on, puffiness of the eyes and some swelling of the limbs. In view of this history I signed her death certificate as 'uremia, chronic nephritis,' ascribing the dimness of vision to albuminuric retinitis."

No definite data concerning the consumption of ripe olives by her is available, but all the information at hand makes it seem quite probable that on January 8 or 9 she opened the contaminated jar of olives and ate two or three or more of them. The fact that ripe olives had been kept in the house, that they always stood on a shelf over the kitchen table, and that Mary was particularly fond of them and had been observed to eat olives taken from such a jar on previous occasions, makes such an assumption quite reasonable. This assumption is further substantiated by the fact that the jar of olives used later by the family in the salad was found open with "several" olives removed. No definite statement as to the number actually missing could be obtained. There is no way of telling how soon after eating olives her symptoms appeared or how long symptoms had been present before she was seen by her physician, although it is stated that she vomited ten hours prior to the visit of her physician. It seems reasonable to estimate that death occurred fifteen or twenty hours after the onset of symptoms.

CASE 2.—Dominica, a son, aged 16, became ill Tuesday, January 13, about 10 p. m. Dr. Ferrara's statement concerning him is as follows:

"I was next called, January 14, at 7 a. m., to see the son, Dominica. The history, obtained from the father and verified by the patient, was that he was seized on the evening of January 13, about 10 p. m., with a choking sensation and inability to swallow, with a partial loss of vision, vomiting and extreme weakness. He was unable to talk, owing to the pharyngeal paralysis, and wrote answers to my questions on a piece of paper. His mental condition at the time was normal. He did not complain of abdominal pains. Dominica was in bed and was unable to open his eyes completely,

having a ptosis of both upper lids. His pulse was very weak, about 80. Temperature was normal. There was no tenderness of the abdomen. There was no diarrhea, the bowels not having moved at all. He could recognize various objects, such as matches, pencil and paper, but his vision was also dim. I washed his stomach with plain water, and removed a brownish, dark fluid, with a putrid smell, 4 quarts of water being required before the liquid returned clear. I put in through the tube a cup of strong black coffee to stimulate him, and ordered whisky. I sent an ambulance and had him removed to Fordham Hospital, where he arrived about 10 a. m., and died within a few minutes (thirty-two) after his arrival."

The diagnosis on admission to the hospital was "paralysis of the throat," "migraine" and "hysteria." He failed to react to one-thirtieth grain of strychnin sulphate, subcutaneously. He was mentally clear and conscious to the last, and there were no convulsions.

The onset of symptoms occurred four hours after eating the olives, and death occurred twenty-four and one-half hours after the onset of symptoms, or twenty-eight and one-half hours after ingestion of the olives. Information obtained from other members of the family shows that Dominica was unusually fond of ripe olives and always ate freely of them whenever they were available. This fact, together with the rapid onset of symptoms and the profuse vomiting (suggestive of gastric irritation due to a large amount of toxin) makes it seem quite probable that he partook more freely of the olives than the others. It was the necropsy on his body which led to the suggestion of food poisoning and later to the diagnosis of botulism.

CASE 3.—Paul, the father, aged 36, was the next member of the family to fall ill. Wednesday afternoon, January 14, he noticed that he had considerable difficulty in expectorating. When seen by his physician at 4 p. m., there was dimness of vision, diplopia, marked prostration and weakness, difficulty in swallowing and talking, and thick, glairy mucus in the mouth and throat which could be evacuated only with great difficulty. He immediately walked to the Fordham Hospital, the admission diagnosis being "paralysis of throat and partial blindness." His pupils reacted only sluggishly to light and accommodation. Other reflexes were not influenced. He vomited a small amount of material which was said to have a putrid odor. There was no diarrhea, but instead marked constipation. There soon developed ptosis of both eyelids and complete aphonia. He also complained of a distressing sense of pressure or weight in the epigastrium. Perspiration became very profuse. Edema of the soft palate and pharynx developed. As respiration became more difficult, cyanosis became more marked, and death, due to respiratory paralysis, resulted. Mental clearness was present throughout.

The highest recorded temperature was 99.8 F. The pulse rate never exceeded 92 beats a minute, and the greatest respiratory rate recorded was 24 a minute. The white blood count was found to be 10,600. The differential blood count was not abnormal and presented nothing of interest. Lumbar puncture revealed a sterile and otherwise negative fluid under pressure sufficient to cause one-half inch projection of the stream. The urine presented nothing of interest. The onset of symptoms occurred twenty-two hours after eating the olives, and death occurred forty hours after the onset of symptoms, or sixty-two hours after ingestion of the olives.

CASE 4.—Antonio, a son, aged 13 years, became ill at 8 p. m., Wednesday, January 14. He became much alarmed when a sensation of choking developed in his throat, and at 4:45 a. m., January 15, walked into the Fordham Hospital. His pupils were dilated and reacted sluggishly to light and accommodation. Other reflexes were not obtained. There was ptosis of both eyelids, dimness of vision, great weakness and prostration, difficulty in swallowing and speaking, with later development of complete aphonia, constipation, thick, glairy mucus in the throat, profuse perspiration

The highest recorded values for temperature, pulse and respiration were 99.6, 120 and 24, respectively. The urine contained a very few pus cells, but was otherwise negative.

[illegible]

CASE 7.—Lena, aged 9, a daughter, was taken to the Fordham Hospital, January 14, with her father. She was presenting no symptoms at this time, but was admitted for observation merely as a precautionary measure. She was quite positive that she had eaten one ripe olive, January 13, during the preparation of the salad, but had eaten none of the salad. During the night of January 17, it was felt by some of the physicians that she showed some hesitancy in speech and slight ptosis of the right eyelid in addition to constipation. There was, however, no concensus as to the presence of these symptoms, so that it seems impossible to state with finality that she exhibited definite symptoms. She was later discharged from the hospital apparently none the worse for her experience.

Joseph, aged 7, a son, was taken to the home of friends after his mother's funeral, and was not present. January 13, when the other members of the family became infected. He ate no olives and developed no symptoms.

SYMPTOMS AND PHYSICAL SIGNS

The symptoms and physical signs were much the same in all six cases. As stated above, the onset of symptoms varied from four to fifty hours after ingestion of the contaminated food. In general, the onset was gradual and not of such a nature as to cause apprehension on the part of the patient. Reference to the accompanying chart and the individual case histories will reveal the details of each case.

The incidence and progression of symptoms was not identical in all the cases, but followed the same course in general. The first intimation of trouble seemed to be rather an indefinite indisposition, followed rapidly by muscular weakness which gradually increased to great prostration. Difficulty in expectorating, thick speech, dryness of the mouth and dysphagia were among the first symptoms noted, seemingly due to mucus in the throat and perhaps also to beginning paralysis of the pharyngeal muscles. As the disease progressed the mucus became thicker, glairy and more tenacious, and could not be evacuated either up or down. It was the source of much discomfort, and the patients made vain efforts to remove it with their fingers or handkerchiefs. As the paralysis of the muscles of the throat increased, swallowing became more difficult and the ability to speak diminished toward an ultimate complete aphonia. A sensation of choking, with more or less sense of constriction about the throat, was noticed early in the disease by four of the patients.

The various eye symptoms were among the earliest manifestations. Dimness of vision, a blurring and mistiness, was noted by all the patients. Diplopia was remarked by only two of the six, but it is quite probable that it was present in the others. Dilated, sluggishly reacting pupils were observed in three cases. Other reflexes were present and active in three of the four cases examined. Ptosis of the eyelids invariably developed. Nystagmus was observed in one case.

Vomiting occurred in three of the cases and, as far as the evidence was available, was associated with large doses of toxin, which apparently produced gastric irritation prior to paralysis. In this outbreak, as in the Detroit cases reported by Jennings, Haass and Jennings,¹ the patients who vomited at the onset died sooner than the others. Diarrhea was not present in any case but, on the contrary, constipation was evident in all, evidence which may be interpreted as local, peristaltic paralysis. A feeling of pressure and "weight at the pit of the stomach" was remarked by two of the patients. A feeling of chilliness and profuse perspiration was present in four cases. Mental clearness, maintained until shortly before death, was strikingly characteristic. All the patients were drowsy and somewhat comatose immediately before death. One patient became somewhat irrational about an hour before death. Dyspnea did not manifest itself so much in rapidity as in difficulty of breathing. The highest respiratory rate recorded for any of the six patients was 30 a minute. The accessory muscles of

respiration were called more and more into play as the intoxication progressed, inspiration becoming more and more difficult and finally ceasing quietly when the muscles refused to function any longer. Cyanosis was observed in all cases as respiration weakened and the end approached. Thirst, vertigo, abdominal pain and diarrhea were absent in all cases.

The pulse remained of good volume and good quality throughout, although somewhat rapid and variable in rate. The highest rate recorded was 120 a minute. The temperature reaction was not remarkable, 102.4 F. being the highest recorded, and this followed the intravenous injection of antitoxin. A leukocyte count was made on only one patient, and this was found to be 10,600; the differential count was not abnormal. A lumbar puncture on the same patient revealed nothing other than somewhat increased pressure. The urine was negative except for a very few pus cells found in three of the four patients whose urine was examined.

TREATMENT

Elimination, stimulation and antitoxin were the fundamental bases of treatment. Stimulants, such as strychnin sulphate, atropin, camphor-in-oil, digitalis and coffee enemas were administered as it seemed advisable. Inhalation of oxygen was also used for short periods. Gastric lavage was performed as soon as the patient reached the hospital. Cathartics, for the most part, could not be swallowed. Magnesium sulphate and croton oil, when introduced through the stomach tube, brought no results. High colonic enemas usually brought good results. Nutrient enemas were also used, for the patients had difficulty in swallowing even liquids. Warm blankets contributed much to their comfort.

Antitoxin was not available until four patients were dead and one other was so far gone that he was past aid. This left only one patient, exhibiting definite symptoms, to whom the serum was administered. This patient was Dominick, aged 46. At the time the antitoxin was given, just forty-eight hours after the onset of symptoms, he was presenting the following manifestations of the disease: dimness of vision, diplopia, ptosis of both eyelids, great difficulty in speaking, inability to swallow, much glairy, tenacious sputum in the throat, great prostration and weakness, profuse perspiration, and respiratory difficulty. Twenty-five c.c. of serum obtained from Professor Graham of the University of Illinois were injected intravenously at 7:15 p. m. At 8:30 p. m. there was no apparent change in his condition. At 9:30 p. m. the temperature, pulse and respiration were recorded as 102.4 F., 124 and 30, respectively. The patient grew gradually weaker and ceased to breathe at 10:11 p. m., three hours after the antitoxin was administered.

Lena, the 9 year old daughter who ate one olive, was given two intravenous injections of 15 c.c. each, about twelve hours apart, of an antitoxin received from the Bureau of Animal Industry at Washington, D. C. As mentioned in the case history, it does not seem possible to state that she was presenting definite and clear-cut symptoms. Such symptoms never did develop, but to what degree the antitoxin was responsible for their failure to develop will probably never be known. It is not improbable that symptoms would not have developed if no antitoxin had been administered. Joseph, aged 7, was given one 15 c.c. intravenous injection of the same serum, merely as a prophylactic measure, for

1. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism, *J. A. M. A.* 74: 77 (Jan. 10) 1920.

at that time there was some uncertainty as to whether or not he had partaken of any of the olives.

Taken all in all, the serum therapy was inconclusive. The serum administered to Dominick was probably given too late to expect favorable results. Furthermore, the serum administered was not prepared from a homologous strain of *B. botulinus*, a fact that would render it ineffective in this case. As stated above, the Graham antitoxin failed to protect laboratory animals against the toxin present in the olives. The serum administered to Lena, presumably derived from a homologous strain, cannot be said definitely to have aborted the development of the disease.

THE EYE AS A PORTAL OF INFECTION IN RESPIRATORY DISEASES*

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AND

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The main channel of infection in respiratory diseases, and especially in pulmonary tuberculosis, has confused scientific men for a long time. An effort to avoid infection, especially in the acute diseases, has led to the introduction of many methods of protection, the latest of which is the gauze mask. As complicated as this problem has been in the study of the acute respiratory diseases, it has proved even more baffling and confusing in pulmonary tuberculosis, which disease accounts for at least three fourths of the deaths attributed to the tubercle bacillus. Much of the confusion is of course due to the improper comprehension of the problem at hand and the application of impractical methods of experimentation and conclusions drawn therefrom. Thus have been overemphasized at intervals prenatal infection, alimentary infection and other phases.

The problem that confronts us in the prophylaxis of pulmonary tuberculosis, though differing slightly, is practically the same as that in the acute respiratory diseases. We have to deal in both cases with organisms highly virulent¹ and specific or parasitic for the host, taking hold at the least provocation and producing clearly defined and characteristic pathologic changes, in contradistinction to those produced by the more saprophytic micro-organisms, which occur widely distributed in nature or which cause spontaneous disease in other species.

MODE OF INFECTION IN TUBERCULOSIS

Controversy has revealed diverse opinions regarding the exact portal of infection in pulmonary tuberculosis. Koch in 1884 maintained that tubercle bacilli entered the lungs with the inspired air and produced their lesions wherever they came to rest in the lungs. This view found almost universal acceptance for many years, and the dispute centered about the question as to whether dry and pulverized sputum (Cornet), or fluid droplets (Flügge) freshly expelled from the mouths of phthisical patients, play the more important part in propagating the disease. As a matter of historical interest it may be noted that shortly after the

rediscovery of the infectious nature of tuberculosis by Villemin, Chauveau in 1868 held that the alimentary canal might be the portal of entry in tuberculosis even more frequently than the air passages, an idea probably made evident by the large percentage of ingestion tuberculosis from bovine sources in those days. In 1904, von Behring uncompromisingly maintained the intestinal origin of pulmonary tuberculosis irrespective of age. Calmette and Guérin² in 1905 strongly supported this theory, though they did not agree with von Behring's statement that such infection occurs commonly in infancy. On the contrary, they believed that the lymphatic glands are more permeable in the adult than in the child, and that infectious micro-organisms may pass through them from the intestines to the lungs by way of the thoracic duct. To add to the confusion of this entire problem is the rise of the theory of latency or the residence of tubercle bacilli in the lymph glands and tissues free from all anatomic changes, as maintained by Baumgarten. Such latency has been recently observed by Wang,³ who found bacilli in three of thirty-two cases studied. He reviews the literature, but in all of the cases reported the time element in man is impossible of determination and Wang found that tubercle bacilli could be latent in guinea-pigs as long as 104 days (a comparatively short time of study for enlightenment in this problem).

THE EYE AS A PORTAL OF INFECTION

In considering so important a problem as the avenue of infection in pulmonary tuberculosis, it is conceivable that the question resolves itself not so much into producing effects at the expense of practicability as to considering the problem from the standpoint of facts. For a proper interpretation of facts the available data seem still to be lacking in definiteness, since dosage and the possibility and repetition of infection have been left entirely out of consideration. In the same manner a consideration of the eye as a channel of infection had been entirely neglected until Maxcy⁴ recently demonstrated that this might be one of the least protected regions of the body, giving access to pathogenic micro-organisms by droplet infection, especially from man to man. He found that *B. prodigiosus* introduced into the conjunctival sac can be recovered from the nose in five minutes, from the throat in fifteen minutes, and from the stool in twenty-four hours. With the mouth and nose protected by gauze, organisms were found in the nose and nasopharynx after droplet spraying at a distance of from 3 to 4 feet.

Maxcy states that from the nasopharynx the micro-organisms may follow one of three courses: 1. They may pass outward through the mouth with the sputum. 2. They may be carried into the larynx and reach the lower respiratory tract. 3. They may be carried downward into the esophagus with the swallowing movements, and perish in the intestinal canal or be excreted with the feces. He says that the latter is probably the most frequent course, as he obtained the bacilli in one of three subjects whose stools were tested.

A number of points of direct interest in the problem of the eye as an avenue of infection were left unsettled by Maxcy. These factors seemed worthy of further investigation: whether the micro-organisms really

* From the Research Laboratories, National Jewish Hospital for Consumptives.

1. Corper, H. J.: Are All the Tubercle Bacilli Found in the Sputum Virulent? *J. A. M. A.* 70: 1281 (May 4) 1918.

2. Calmette, A., and Guérin, C.: *Ann. de l'Inst. Pasteur* 19: 601. 1905.

3. Wang, C. Y.: *Lancet* 2: 417 (Sept. 2) 1916.

4. Maxcy, K. F.: The Transmission of Infection through the Eye, *J. A. M. A.* 72: 636 (March 1) 1919.

ever reached the respiratory tract below the epiglottis and vocal cords and how long they remained there; what course the micro-organisms followed after instillation in either eye; how long they persisted in the nose, pharynx or larynx (the studies reported by Maxcy were of only thirty minutes' duration); and since it has been suggested, though not authentically demonstrated, that micro-organisms can enter the lungs by way of the intestinal tract in experimental animals, whether this could occur in man. It was with a view to corroborating and elaborating the work initiated by Maxcy that the experiments to be described were performed.

EXPERIMENTAL DATA

The experiments were carried out on patients with pulmonary tuberculosis who were capable of expectorating (lung) sputum. These people were chosen for the twofold purpose of obtaining satisfactory pulmonary material and also with a view to using patients with a respiratory system of reduced protective mechanism such as may occur acutely at any time in any person but not often in a manner available for satisfactory experimental purposes.

Time Factor.—In order to gain an idea of the rate of appearance and disappearance of the micro-organisms from the nose and various parts of the pharynx after eye instillation, a series of seven cases were thus tested with the results given in Table 1.

TABLE 1.—APPEARANCE AND DISAPPEARANCE OF *B. PRODIGIOSUS* FROM THE NASOPHARYNX AFTER EYE INSTILLATION

Location	—Appearance—		—Disappearance—	
	Earliest	Latest	Earliest	Latest
Nose	5 min.	15 min.	45 min.	2¼ hrs.
Pharynx	10 min.	15 min.	1½ hrs.	2¼ hrs.

A brief survey of this table indicates that *B. prodigiosus* appears and disappears from the nose and throat after eye instillation with fair regularity and within a definite time in different persons.

TABLE 2.—DISTRIBUTION OF *B. PRODIGIOSUS* IN THE MOUTH AFTER RIGHT EYE INSTILLATION

Location	Case	Time Interval after Instillation in Hours				
		½	1	1½	2	2½
Hard palate	Y	—	—	—	—	—
	St. J.	—	+	—	—	—
Uvula	Y	+	—	—	—	—
	St. J.	—	+	+	—	—
Right tonsil	Y	+	+	+	+	—
	St. J.	—	+	+	—	—
Left tonsil	Y	—	—	—	—	—
	St. J.	—	—	—	—	—
Posterior nasopharynx	Y	+	+	+	+	+
	St. J.	+	+	+	+	—

Course of Micro-Organisms.—In order to determine whether the micro-organisms instilled into the eye follow a definite course, a suspension of *B. prodigiosus* was dropped into the right eye, and various parts of the nasopharynx were tested with the results shown in Table 2. An examination of this table reveals the tendency of the micro-organisms to follow definite paths. If instilled into the right eye the organisms are found on the right side of the nasopharynx and on the right tonsil, while the left side is free from them, as are also the anterior portions of the mouth. Instilla-

tions of strong solutions of argyrol into the eye were also found to follow a similar definite course in the nasopharynx.

The direct determination of the presence of micro-organisms in the trachea and on the vocal cords, which might indicate a downward passage into the lower

TABLE 3.—LAST POSITIVE CULTURE OF *B. PRODIGIOSUS* FROM PHARYNX AND FROM SPUTUM AFTER EYE INSTILLATION, IN HOURS

From Pharynx	From (Lung) Sputum
1½	2
1¾	1¾
1½	*
1½	2½
2	2
1½	2
2	*
1¾	2½
2¼	2½
2¼	2¼
2¼	*
2	*
2	2¼
2¼	2¾
1¾	*
2½	2¾
2	*
2	*
1¾	*

*In these cases the sputum was negative before the pharynx.

respiratory tract after eye instillation, is admittedly difficult, so that a number of procedures were employed for this purpose. It would be unreasonable to expect the determination of the presence of *B. prodigiosus* in the washed sputum itself, and their presence in the unwashed sputum, especially while the nasopharynx was still positive, is obviously open to criticism. There were two other procedures to be considered: the passing of a tube into the trachea, obtaining through this tube a swab of the trachea and vocal cords, and the examination of the (lung) sputum after the nasopharynx and mouth were proved negative by careful and repeated examinations.

A series of ten cases were examined by passing a metal tube into the trachea from four to six hours after the instillation of *B. prodigiosus* into the eye. The nasopharynx was negative for *B. prodigiosus* in these cases after about two hours. It was found that only a small area could be thus swabbed; but two of the ten cases revealed positive cultures from the vocal cords, one within six hours, and the other four hours after eye instillation. In a series of twenty cases the nasopharynx and sputum were examined to determine whether the sputum was positive for *B. prodigiosus* after eye instillation for a longer period of time than was the nasopharynx. The time of appearance of the last positive cultures from the nasopharynx and pharynx and from the sputum in the twenty cases is given in Table 3.

Of the twenty cases studied, there were seven cases, or 35 per cent., in which the lung (sputum) specimens were positive on repeated examination after the pharynx was negative. If these seven cases are considered, the lung specimen was positive on an average of 0.6 hours (minimum, one-quarter hour; maximum, one hour) after the pharynx was negative on repeated examination. One case in the series was of interest because of the fact that a definite positive culture of *B. prodigiosus* was obtained from the sputum one week after the instillation into the eye, the pharynx being repeatedly negative in the interval following the first two hours and also at the time of obtaining the positive culture from the sputum. Three other

cases, observed through an interval of nine days after eye instillation, gave negative sputums for *B. prodigiosus* after the initial few hours following instillation.

DISTRIBUTION AFTER INGESTION

The study of the distribution of *B. prodigiosus* after ingestion was divided into the persistence of the organism in the mouth, the appearance in the sputum, and the appearance in the feces after ingestion. In none of the cases shown in Table 4 was *B. prodigiosus* found in the sputum during the first two hours after the mouth and pharynx were negative.

TABLE 4.—PERSISTENCE OF *B. PRODIGIOSUS* IN THE MOUTH AFTER ORAL INGESTION, IN HOURS

Number of Cases	Time of Persistence		
	Shortest	Longest	Mean
11	4¼	5	4½

In four cases the nose was examined for *B. prodigiosus*, and in no case were the organisms found within one hour after oral ingestion, while the mouth and pharynx were positive during this time.

In a series of ten cases, *B. prodigiosus* was given by mouth and the sputum and feces were examined after six hours and at daily intervals for ten days. In none of these cases was a positive culture obtained from the sputum; the organisms were recovered from the feces in only two of the ten cases during the first twenty-four hours, after which no more positives were obtained.

TABLE 5.—EFFECT OF HYDROCHLORIC ACID AND HYDROCHLORIC ACID AND PEPSIN ON THE VIABILITY OF *B. PRODIGIOSUS* IN VITRO

Exposure at 37 C.	Concentration of Hydrochloric Acid										
	Alone (Normal Per Cent.)*						With 0.2 Per Cent. Pepsin in Addition				
	0	0.5	1.0	1.5	2.0	2.5	0.0	0.5	1.0	1.5	2.0 2.5
5 min.	+	+	+	+	—	—	+	+	+	+	—
15 min.	+	+	+	+	—	—	+	+	+	+	—
25 min.	+	+	—	—	—	—	+	+	+	+	—
40 min.	+	+	—	—	—	—	+	+	+	+	—
60 min.	+	+	—	—	—	—	+	+	+	+	—
2 hr.	+	+	—	—	—	—	+	+	+	—	—
3 hr.	+	+	—	—	—	—	+	+	+	—	—

* One per cent. normal acid is equivalent to 0.0365 per cent. by weight of hydrogen chlorid, and the other figures are in proportion.

In order to find a possible explanation for the inability to recover *B. prodigiosus* from the feces after the ingestion of large amounts of the culture, the effect of various concentrations of hydrochloric acid and of a mixture of pepsin and hydrochloric acid on suspensions of the bacilli was studied with the results given in Table 5. An examination of this table reveals that the cultures of *B. prodigiosus* used in these experiments are highly susceptible to the action of hydrochloric acid, alone or in the presence of pepsin, 0.07 per cent. by weight of hydrochloric acid killing within five minutes.

SUMMARY

The eye must be considered as one of the important portals of infection in respiratory diseases, and, although the greater part of the infectious material entering by way of the eye is subsequently swallowed and passes into the gastro-intestinal tract, a small but definite portion of it finds its way into the larynx and trachea, where it may persist even as long as a week (as was noted in one case studied).

In its passage from the eyes, the infectious material traverses a definite channel dependent on which eye it has entered or into which it has been introduced. Infectious material that is ingested is far less likely to enter the respiratory tract than that entering by way of the eye or nose.

MATERNAL MORTALITY

C. HENRY DAVIS, M.D.
MILWAUKEE

There is a general impression among physicians that there has been a great improvement in maternal mortality during the past half century. This impression is based on the present favorable maternal mortality in hospital and dispensary services, and not on a comparison of mortality and birth statistics.

In 1917, Grace L. Meigs¹ made a careful study of maternity mortality from all conditions connected with childbirth from the available records of the United States and certain other countries. In answer to the question, Is the death rate from childbirth falling? she says (page 17):

According to the evidence available, these death rates are apparently not decreasing. During the twenty-three years ending in 1913, in this country no definite decrease in the death rate from the diseases caused by pregnancy and confinement can be demonstrated; nor can any decrease in the death rate from puerperal septicemia be shown.

She says further of the deaths from diseases of pregnancy and the puerperal state (page 22):

In order to make possible a comparison of the death rate from these causes for fifteen foreign countries with those for the United States, an average rate has been computed for the years 1900 to 1910 for each of the countries, using the same method as that in use in the United States. When the sixteen countries studied are arranged in order, with the one having the lowest rate first, the death registration area of the United States stands fourteenth on the list. Only two countries, Switzerland and Spain, have higher rates; many of the countries, however, show rates differing but little from that of the United States. Markedly low rates are those of Sweden (6), Norway (7.8), and Italy (8.9); a strikingly high rate is that of Spain (19.6). [The ten year average for the United States was 14.9 per hundred thousand population (Table 1).]

The death rate from child birth per thousand live births is not available for the death registration area of the United States, but can be given only for the small number of states and cities included in the provisional birth registration area and for one year, 1910. This rate, 6.5, is considerably higher than that for 1910 of any of the countries studied.

However, a birth registration area was established in 1915, and eventually there will be records from which it will be possible to compute our maternal mortality on the basis of the number of live births. A comparison of the birth rate in the birth registration area with the mortality rate in the death registration area for 1915 and 1916 would indicate that in 1915 one mother died in every 164 live births, and in 1916 one for every 152 live births. The ratio in 1910 was one mother for every 154 live births.

During the past thirty years, deaths from many diseases have been reduced to a fraction of their former toll. Between the years 1890 and 1915, the records of the death registration area of the United States

1. Meigs, Grace L.: Maternal Mortality, U. S. Dept. of Labor, Children's Bureau, Miscellaneous Series 6, Bureau Publication 19, 1917.

show that the deaths from tuberculosis per hundred thousand population dropped from 252 to 145.8; pneumonia, from 186.9 to 82.9; diphtheria and croup, from 97.8 to 15.7; diarrhea and enteritis under 2 years, from 139.1 to 59.5; typhoid fever, from 46.3 to 12.4. The death rate from diseases caused by pregnancy and the puerperal state in 1890 was 15.3, while in 1915 it was 15.2. The maternal mortality rate in 1916 was 16.3 per hundred thousand population.

In the face of all available statistics, we are not justified in believing that the average woman is benefited by the advances that have been made in scientific obstetrics during the past half century. Few realize that for all women of childbearing age, childbirth is the second greatest cause of death. For the year 1915 in the death registration area of the United States, there were, among women aged 15 to 45, 29,200 deaths from tuberculosis; 10,134 from childbirth, of which 4,173 were from puerperal septicemia; 8,766 from the various circulatory disturbances; 6,458 from all digestive disturbances; 5,549 from pneumonia, all types; 5,424 from cancer and other malignant tumors; while for these ages syphilis was reported as the cause of death 647 times and gonorrhea 174 times.

Additional data to prove the great danger of pregnancy and labor are given in Table 2, which is based on a medico-actuarial mortality investigation. The table has been modified and rearranged to make it available for general study and comparison with other statistics. This insurance record shows that for all women insured during the childbearing period, the diseases of pregnancy and the puerperal state are the

the family records of 10,000 applicants. The first series of 5,000 showed that one applicant for life insurance in every seventeen reported a mother or sister or both as having died from the immediate effects of childbirth; 1 in 27 from tuberculosis, and 1 in 47 from cancer or other malignant tumor. The second series of 5,000 cases showed childbirth 1 to 17.7; tuberculosis 1 to 29.7, and malignancy 1 to 42.7. In view of the

TABLE 2.—MOST COMMON CAUSES OF DEATH AMONG INSURED WOMEN IN THE UNITED STATES *

Cause of Death	Percentages of Total Deaths of Women Insured; Age at Time of Applying for Insurance				
	15-29	30-44	15-44 Average	45 and Over Average	All Ages Average
Tuberculosis of the lungs.....	27.2	13.9	20.5	4.0	15.0
Cancer and other malignant tumors.....	2.7	11.8	7.3	13.3	9.3
Pneumonia.....	6.1	7.5	6.8	10.7	8.1
Organic diseases of the heart.....	3.3	5.3	4.3	10.7	6.4
Diseases of pregnancy and puerperal state.....	12.6	5.6	9.1	....	6.1
Nephritis and Bright's disease.....	4.2	6.4	5.3	7.4	6.1
Typhoid fever.....	6.3	4.3	5.3	1.3	4.0
Cerebral hemorrhage and apoplexy.....	1.5	3.9	2.7	10.3	5.2
Appendicitis and typhlitis.....	2.3	1.5	1.9	0.3	1.4
Diseases of the uterus.....	2.2	3.3	2.8	1.0	2.2
Cirrhosis of the liver.....	0.4	0.8	0.6	1.0	0.7
Diabetes.....	0.7	0.9	0.8	1.8	1.1
Suicide.....	2.1	1.4	1.7	0.5	1.3
Accident.....	3.7	4.0	3.8	2.6	3.4
All other causes of death.....	24.7	29.4	27.0	35.1	29.7
	100.0	100.0	100.0	100.0	100.0

* This table does not indicate the ages of the women at the time of death. The table is based on the Medico-Actuarial Mortality Investigation, compiled and published by the Association of Life Insurance Medical Directors and the Actuarial Society of America, New York, 2: 52, 1913.

TABLE 1.—AVERAGE DEATH RATES PER HUNDRED THOUSAND POPULATION IN CERTAIN COUNTRIES FROM DISEASES CAUSED BY PREGNANCY AND CONFINEMENT, 1900 TO 1910*

Country	Death Rate per Hundred Thousand Population from Diseases Caused by Pregnancy and Confinement		
	Total	Puerperal Septicemia	All Other
Sweden**.....	6.0	2.4	3.5
Norway.....	8.1	4.1	3.9
Italy.....	8.9	3.3	5.7
France†.....	10.3	4.8	5.5
Prussia‡.....	10.4	4.7	5.8
England and Wales.....	11.1	4.7	6.5
New Zealand.....	12.4	3.1	9.3
Ireland§.....	12.9	4.5	8.4
Hungary.....	13.3	3.6	9.8
Japan**.....	13.3	4.5	8.8
Australia||.....	14.1	4.7	9.4
Belgium.....	14.8	5.8	9.0
Scotland**.....	14.8	5.5	9.4
United States*.....	14.9	6.5	8.3
Switzerland.....	15.2	6.4	8.8
Spain**.....	19.6	12.3	7.3
Austria.....	#	6.6	#

* Table XII, p. 56, of "Maternal Mortality," by Meigs (Footnote i).
** Rates based on figures for 1901 to 1910.
† Rates based on figures for 1906 to 1910.
‡ Rates based on figures for 1903 to 1910.
§ Rates based on figures for 1902 to 1910.
|| Rates based on figures for 1907 to 1910.
¶ Rates based on figures for death registration area which increased from year to year; in 1900 it comprised 40.5 per cent. of the total population of the United States, and in 1910, 58.3 per cent.
Figures not available.

second greatest cause of death; and for all women insured, maternity ties with nephritis and Bright's disease as the fifth greatest cause of death.

A study of these insurance figures suggested that from insurance records additional valuable information might be obtained regarding the frequency with which individual families are affected by death from common causes such as tuberculosis, childbirth and malignant tumors. Through the courtesy of Dr. J. W. Fisher, medical director of the Northwestern Mutual Life Insurance Company of Milwaukee, I have examined

similar ratios in the two series of 5,000 each, it was not considered advisable to give more time to this line of investigation.

The examination of 10,000 family histories as given by applicants for life insurance would seem to indicate that among the class of men who have applied for life insurance during recent years, maternity has been a cause of death in more families than either tuberculosis or malignant tumors. In comparing these figures with figures already given from the actual numbers of deaths based on the causes recorded on the death certificates, it must be remembered that tuberculosis is most frequent and most fatal among the very poor—a class excluded from the life insurance records except as a percentage of applicants may have been born in poverty either in this country or abroad. Another and possibly more important reason for the great frequency of childbirth over tuberculosis arises in the practice of physicians in giving tuberculosis or other general cause on the death certificate of the woman who dies shortly after delivery without reference to the childbirth. The layman, on the other hand, remembers the childbirth and not the cause of death recorded on the death certificate.

The records of large maternity hospitals indicate that most of the deaths from puerperal sepsis are preventable when a rigid surgical technic is employed in the delivery room, and that many of the deaths from other complications of pregnancy, labor and the puerperium are unnecessary. The continued high maternal mortality constitutes a standing reproach to all civilized peoples in general, and to the medical profession in particular.

The teaching of obstetrics has perhaps not kept pace with that of general medicine and general surgery, but for this the teachers of obstetrics are only partially responsible. Obstetrics has always been the most time consuming and at the same time the poorest paid work

a physician undertakes. Comparatively few physicians have specialized in this branch of surgery. Hospital facilities for obstetric cases are most inadequate when compared with those for general surgical or medical cases. Comparatively few hospital interns have any real training in obstetrics. Most physicians in general practice have to handle all types of labor with little training and under the most unfavorable conditions.

The present need in obstetrics is not so much the discovery of the cause of certain rare and obscure conditions, but rather the application of present knowledge. The infection of obstetric patients should be prevented by elimination of the unclean midwife—both male and female. This may be accomplished by systematic and long continued education of the people and the profession. The toxemias of pregnancy should be prevented through careful prenatal supervision. Most of the severe toxemias are preventable. The delivery mortality and morbidity should be reduced to the minimum by ample hospital facilities. There is no longer any question about going to the hospital for even the most simple operation. Why continue the practice of doing obstetric surgery in a home with lack of facilities and questionable asepsis?

SUMMARY AND SUGGESTIONS

1. Mortality statistics show that for women of child-bearing age (15 to 45), childbirth is the second greatest cause of death. The records of life insurance companies show that for all women who are insured under 45 years of age, the diseases of pregnancy and the puerperal state are the second greatest cause of death. Childbirth ties with nephritis and Bright's disease for fifth place as a cause of death among insured women.

2. A study of 10,000 family histories as given by applicants for insurance in the Northwestern Mutual Life Insurance Company shows that one in every 17.3 associates the death of a mother or sister or both with childbirth, 1 in 28.3 with tuberculosis, and 1 in 45 with malignancy. It is believed that a considerable percentage of these deaths from childbirth were recorded on the death certificates as being due to tuberculosis, heart disease, etc., and that the applicant for insurance remembered the associated childbirth and not the cause of death given on the death certificate. Our present mortality records do not show the frequency with which childbirth is a contributing cause of death.

3. The present maternal mortality may be greatly reduced by application of our present obstetric knowledge. Systematic education similar to that used in combating tuberculosis is needed.

4. Increased hospital facilities and nursing service must be provided. The state should furnish assistance in giving poor women the proper care during pregnancy, labor and the puerperium. For the present, more hospital beds may be made available by sending women home by ambulance early in the puerperium and caring for them through an outpatient nursing service.

5. The clinical teaching of obstetrics must be improved. Outpatient services are at present necessary; but as soon as beds are available, these women should all be brought to the hospital for delivery. Students get a midwife idea of obstetrics from the so-called simplified technic used in many outpatient services, and reflect these methods in the continued high maternal mortality. Few interns have an obstetric training comparable with that received in medicine and surgery. They go into general practice, and must meet the emer-

gencies of obstetric practice with the inadequate training received as an undergraduate.

6. Churches could aid greatly in making motherhood safer, if on Mother's Day special collections were taken for the obstetric services of our various hospitals. In addition to the money raised, such a collection would have an educational value by calling the people's attention to the great obstetric needs.

141 Wisconsin Street.

Clinical Notes, Suggestions, and New Instruments

A SIMPLE TECHNIC FOR CONCENTRATING SPUTUM*

STANLEY WOOLLEY, M.D., LOOMIS, N. Y.

Greenfield and Anderson¹ have recently described a simple technic for the sedimentation of tubercle bacilli in the sputum. In brief, this method consists in placing a small amount (5 c.c.) of sputum in a centrifuge tube, adding two volumes of 1 per cent. sodium carbonate in 1 per cent. phenol (carbolic acid), shaking well, and placing in the incubator for from twelve to twenty-four hours. The tubes are then centrifuged for about fifteen minutes and smears made from the sediment after pouring off the supernatant fluid.

The advantages claimed by the author for this method are: (1) rapidity; (2) sterility of sputum when taken from the incubator, and (3) the resemblance of the films to direct smears. They also made controls of their method, using the full technic of Ellerman and Erlandsen for comparison, and report a distinct advantage in the simplified method.

This technic was recently tried out at the Loomis Sanatorium, and with some slight modifications, has been adopted in place of the more cumbersome Ellerman and Erlandsen technic.

The sanatorium uses the standard 4 ounce blue glass pocket sputum flasks ("Cleaneasy") for collecting sputum for concentration or sedimentation. As these are graduated, it is a simple matter to add the required amount of sodium carbonate solution directly to the sputum. The cork is replaced and the contents are thoroughly mixed by shaking. If the bottle is more than one-third full, which is usually not the case, a portion of the contents can be discarded, or treated in the same way in another bottle.

Placing in the incubator (37.5 C.) overnight has generally been found sufficient for digestion. On removal, the bottle is again shaken and the contents poured into a 50 c.c. plain, lipped centrifuge tube. In case there are more than 50 c.c. in the bottle, a sufficient amount is discarded before shaking. These tubes are centrifuged for fifteen minutes in an electric centrifuge, the supernatant fluid is poured off, and smears are made in the usual way.

In comparing the two methods, thirty-seven specimens were examined. After thorough shaking of the sample of sputum, the contents of each bottle were divided: one part was used for the standard Ellerman and Erlandsen (E. & E.) method, and the other for the simplified Greenfield and Anderson (G. & A.) technic. The G. & A. method showed nine positives and twenty-eight negatives, the E. & E. method eight positives and twenty-nine negatives. The results were the same for each specimen by the two methods, with the one exception in which the E. & E. method was negative. Each slide was thoroughly examined by two examiners, and separate records were kept and compared after all slides were scrutinized.

The advantages of the G. & A. method, besides its simplicity and cleanliness, are that the sediment yields better smears and the stained bacilli are more distinct. This is probably because digestion is not quite as complete as in the E. & E. method, but our limited experience seems to show that it is sufficient for all purposes.

* From the Loomis Sanatorium, Babbitt Memorial Laboratory.
1. Greenfield, J. G., and Anderson, I.; *Lancet* 2:423 (Sept. 6) 1919.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

USE AND ABUSE OF CATHARTICS *

(Concluded from page 461)

RHUBARB

Rhubarb¹ might be called the "constipating purge"; it presents a remarkable combination of constipating and purgative action, since it contains tannic acid and a resinous body, which, on hydrolysis, yields various purgative anthraquinon derivatives (rhein, emodin, chrysophanic acid, etc.). The latter may also exist partly free. In addition, this drug contains a large amount of calcium oxalate, which accounts for its "grittiness" when chewed.

MODE OF ACTION AND INDICATIONS

With small doses (up to 0.3 gm., or 5 grains), the astringent action predominates; with gram doses (15 grains or more) the purgative action is brought out, a mushy evacuation resulting in from six to ten hours, followed by a greater tendency to constipation than is the case with most other purgatives. When used in sufficiently large doses to be a reliable cathartic, rhubarb is a distinct irritant to the intestine; hence it is contraindicated in such conditions as enteritis or mucous colitis.

Authorities differ regarding the use of rhubarb in chronic constipation. Some consider it especially indicated in this condition, because—as is the case with other anthraquinon cathartics (cascara sagrada, senna, aloes)—habituation does not readily occur. Others, and with greater cogency of reason, condemn rhubarb as one of the worst of all cathartics in chronic constipation, because of its tendency to leave constipation as an after-effect. We may safely conclude that chronic rhubarb purgation is a misuse of the drug. It surely cannot cure chronic constipation; and it might make it worse.

Rhubarb is claimed to be especially indicated in those cases of delicately poised enteric function, occasionally found in feeble women and children, characterized by a tendency to diarrhea following the use of any other purgative. Rhubarb knows when to "stop." The introduction of such nonirritating physical laxatives as liquid petrolatum and agar, which cannot cause excessive action, has rendered rhubarb much less important in such cases.

The chief use of rhubarb is in the milder diarrheal disturbances, especially of infants and children. On the other hand, in the severer diarrheal disorders, when there is actual inflammation of the intestine, rhubarb would be contraindicated because of the possibility of its acting as an irritant. When the intestinal tract contains curds or other unsuitable or indigestible food, which produces colic and diarrhea in the course of "nature's" efforts at evacuation of the irritant, rhubarb

is a remedy *par excellence* to reinforce the salutary tendency to evacuation, and to antagonize, by its astringent action, an excessive prolongation of the diarrheal discharges. For this purpose the *aromatic syrup of rhubarb* is usually administered, and with good reason. Here is a pharmaceutic masterpiece in efficiency of drug disguising. Children delight in taking it. It is so weak a preparation—representing only 3 per cent. of the drug—that it can be given in teaspoonful doses even to infants. For adults it is too feeble in action. The following is Kerley's² schedule of dosage:

DOSAGE OF AROMATIC SYRUP OF RHUBARB

6 months	4 c.c. (3 i)
18 months	8 c.c. (3 ii)
3 years	12 c.c. (3 iii)
5 years	16 c.c. (3 iv)

For children, this is the rhubarb preparation to be preferred to all others, unless the sugar contained in it should render it objectionable, as in excessive intestinal fermentation. In such cases, an equivalent amount of the aromatic tincture of rhubarb, of which the syrup contains 15 per cent., might be substituted; and benzosulphinid (saccharin) used for sweetening, as in this prescription:

	Gm. or C.c.
R Benzosulphinid	0|03
Sodium carbonate	0|03
Aromatic tincture of rhubarb.....	4|50
Water	to make 30|00
Dosage same as that of the syrup.	

This drug has the reputation of being "good for the stomach." It would no doubt be as difficult to bring objective proof for this action as it is for that of other so-called stomachics. Its not unpleasant bitter, aromatic taste and its astringent effect would entitle it to rank among the astringent bitters were it not for its purgative properties. This combination of qualities possessed by it renders rhubarb superior to other astringent bitters in some cases of dyspepsia complicated with constipation. For this purpose, owing to the stomaclic qualities of the alcohol contained in them, one of the tinctures, the tincture of rhubarb (20 per cent., spiced with cardamom) or the more pleasant aromatic tincture (also 20 per cent., flavored with cinnamon, clove and nutmeg) would be employed in teaspoonful doses—more or less, according to the effect on the bowels—taken in a little water half an hour before meals. This treatment is, of course, suitable only in "atonic" conditions, and would be contraindicated by a state of excessive irritation or irritability.

SIDE EFFECTS

As the rhubarb stools have a "bilious" appearance due to the presence of the coloring matters of rhubarb, it was formerly classified as a cholagogue, and special indications were constructed for it based on this supposed action on the liver. We now know that it is not a real cholagogue, and that whatever benefits are obtained from its use in liver disturbances are due to its cathartic action. It must be remembered that, owing to the chrysophanic acid it contains, rhubarb imparts to the urine a yellowish color, which may lead one to suspect the presence of icterus. This urine may be distinguished from that of jaundice by the fact that it becomes purplish red on the addition of an alkali. Rhubarb renders the milk of nursing women laxative to the child. The drug has been known to cause macular, vesicular and even hemorrhagic eruptions, though such effects are rare.

* This article, the nineteenth, concludes the series on the "Use and Abuse of Cathartics." These articles, with revision and additions, will shortly be published in book form.

1. Rhubarb is the rhizome of an Asiatic plant, related to but by no means identical with the "rhubarb" or "pie-plant," the juicy stems of which we use in cookery. Eating of these has, therefore, merely the laxative value of cellulose food, and will, of course, not give one the purgative action of the official rhizome.

2. Kerley, C. G.: The Treatment of the Diseases of Children, Philadelphia, W. B. Saunders Company.

METHOD OF ADMINISTRATION

For solid administration forms, powdered rhubarb is to be used. The *extract of rhubarb* is undesirable, as it is unreliable in action. The active principles are so easily injured by heat that the extract may even be less efficient than the powdered root.³ Soap forms a good excipient for rhubarb pills. This prescription might serve as example:

	Gm. or C.c.	
℞ Rhubarb, powdered	60	gr. xc
Soap, powdered	20	gr. xxx
Water.....enough to make a mass	|	
Mix and divide into 30 pills.		
Label: One or two after each meal.		

Each of these pills contains only 0.20 gm. (3 grains) of rhubarb; and more than 0.30 (5 grains) could hardly be given in pill form, on account of the necessary limitation in the size of pills. Hence, when larger doses are required, the powder form must be employed, though the powder might be disguised by enclosing it in cachets, each of which may be made to contain up to 0.60 gm. (10 grains) of the powder. Some persons actually enjoy chewing rhubarb; and little cubes of the rhizome are on the market, especially suitable for this purpose.

RHUBARB AND ALKALI

The addition of alkali prevents precipitation when an alcoholic preparation of rhubarb is mixed with water. This is the reason for the presence of a small amount of potassium carbonate in the syrup of rhubarb. There are numerous other compound rhubarb preparations, however, in which alkali is used for synergistic or for cooperative action.

Compound rhubarb powder, also known as Gregory's powder, is a mixture of:

Powdered rhubarb	25 gm.
Magnesium oxid	65 gm.
Jamaica ginger	10 gm.

We have here the evacuant action of the rhubarb, which acts chiefly as stimulant to peristalsis, reinforced by the laxative action of the magnesium ion, which acts by retaining fluid in the bowel. In addition to this, the antacid action of the magnesium oxid is of value in excessive intestinal acidity, which is frequently present in the summer diarrheas of infants and children. The dose of this powder for an adult would be from 2 to 4 gm. (one-half to 1 dram); for a child 2 or 3 years old, from 0.3 to 0.6 gm. (5 to 10 grains). This powder is, however, far from being palatable. Adults will take it, but children only with protest and often only after a struggle. In this connection, two axioms on children's medication might be laid down:

1. A struggle in administration sometimes does more harm than the medicine can do good.
2. The more we know about medicines, the less offensive is our medication.

That it is not necessary to inflict Gregory's powder on the sensitive palate of a child is shown by a prescription that offers all the effects obtained from the powder in an actually delicious form:

	Gm. or C.c.
℞ Magnesia magma	30
Aromatic syrup of rhubarb.....	30
M. Label: Teaspoonful every two hours.	

The proportion of the ingredients, size of dose, and frequency of repetition of dose may, of course, be varied to suit the individual case. The previously described saccharinated substitute might be used

3. For the same reason the use of the fluidextract of rhubarb is very limited.

instead of the syrup in cases in which sugar would be contraindicated.

"*Rhubarb and soda*" is quite a popular stomachic remedy, and deservedly so. It is a veritable gastric polychrest, combining the previously detailed effects of rhubarb in dyspepsia with those of baking soda, which is probably the single most efficient temporary remedy against gastric distress. Rhubarb and soda tablets are marketed by various manufacturers. They are the most convenient form for administration of this remedy to the average dyspeptic. This prescription might be useful:

	Gm. or C.c.	
℞ Powdered rhubarb	10	3 iiss
Sodium bicarbonate	30	3 i
Oil sugar of peppermint (N. F.)	30	3 i
Mix and divide into 30 powders.		
Label: One, in hot water, after meals as required.		

The oil sugar might be omitted for those who dislike sweet, or for patients with whom sugar disagrees. The 0.60 c.c. of oil of peppermint contained in the oil sugar (2 per cent. according to a general formula in the National Formulary) might be incorporated with the other drugs. For patients who dislike the flavor of peppermint—and there are such—oil of fennel, oil of anise, or any other volatile oil desired might be substituted. Instead of being divided into doses, the powder might be dispensed in a box and the patient directed to take a level or a heaping teaspoonful, as required. This preparation is therapeutically as efficient as, and pharmaceutically much superior to, the old and now no longer official *mixture of rhubarb and soda*, at present embalmed in the National Formulary under the title of "*Compound Rhubarb Mixture*." The manner in which the extemporaneous preparation may be modified, as indicated above, to suit the needs and idiosyncrasies of the patient proves the undesirability, so often noted in other instances, of ordering a ready made "hand-me-down" mixture.

TREATMENT OF LARVA MIGRANS, OR CREEPING ERUPTION

DR. R. R. KIME, Lakeland, Fla., writes: In *Queries and Minor Notes* (THE JOURNAL, March 8, 1919, p. 748) there was a short discussion on the treatment of larva migrans, or creeping eruption. Most of the methods of treatment presented are painful and uncertain in results. I would suggest a simple, efficient, quick, easily applied remedy, consisting of salicylic acid, 10 grains, for young children, or salicylic acid, 20 grains, to collodion, 1 ounce, for older children. If this is painted well over the eruption, especially at the points of migration, twice daily, the eruption will soon disappear. The collodion obstructs migration and the salicylic acid destroys the larva.

Faræus' Sedimentation Test for Pregnancy.—Faræus noticed that the blood of a pregnant woman allows more sedimentation of erythrocytes than the blood of the non-pregnant. He uses a tube 0.01 cm. in diameter, and mixes in it 8 c.c. of blood with 2 c.c. of a 2 per cent. solution of sodium citrate, and sets it aside for an hour. If the sediment of the corpuscles then reaches only to a height of 1 cm. or less, the woman is not pregnant as, with blood from a pregnant woman, the sediment was always found extending above the 1 cm. mark. Hauch stated at the recent French Gynecologic Congress at Brussels that this test is being used considerably in the Scandinavian countries, and that negative findings could be relied on, but that positive findings were noted sometimes in certain diseases as well as in the pregnant.

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SATURDAY, FEBRUARY 21, 1920

AMERICAN FOOD HABITS AND HEALTH

Changes in the food habits of large groups of persons may be brought about by necessity and likewise by altering customs and food preferences. Conditions determined by the war and consequences arising from it have enforced pronounced changes in the dietaries of thousands. What the outcome of this necessary response to the exigency of food situations may be is now being exemplified in the effect of the innovations on the health of the affected nations. Scurvy, beriberi and war edema are conspicuous illustrations of the extreme effects brought about by necessity, that is, by actual shortage of certain foods or by their high cost. A few months of deprivation may suffice to send deficiency diseases broadcast among people previously living in good health and working efficiency.

The other category of change in food habits by which new dietary customs come into vogue and older choices lose their popularity is slower in becoming manifested. The more permanent revisions of food preferences are not ordinarily created by famine, war or pestilence. They develop slowly, like other changes in styles; nevertheless they do arise, despite the fact that many persons assume that our food practices are perennially the same. Recently the Office of Home Economics in the United States Department of Agriculture¹ completed a comparison of the foodstuffs purchased by 500 families with the amounts of the same foods purchased by 400 families about twenty years ago. The outcome shows that the amount of meat in the diet has decreased about 8 per cent., and grain products about 11 per cent., while dairy products have increased about 6 per cent.; vegetables, 4 per cent., and fruits, 8 per cent. The average amount of meat and fish supplied in the diet in the 500 studies was about 6 ounces daily per man; dairy products, 16 ounces; grain products, 13 ounces; vegetables, 16; fruits, 9; sugar and syrups, 3, and fats, 2 ounces.

The statistics indicate, so far as such broad generalizations which deal with the quantity of nutrients rather

than the special qualities of the foods can be depended on, that the "average" diet of such groups is adequate. The use of milk increased up to 14 ounces a day in the period under consideration. This is scarcely more than one-third quart a day; and since the amount of milk did not increase in accordance with the greater number of children in the families studied, the undervalued importance of milk in the dietary still deserves to be emphasized to the American public. Few of the dietaries were seriously below the accepted standards for the more important mineral ingredients required, namely, iron, calcium and phosphorus. The average dietary is more likely to be deficient in iron than in the other elements mentioned. The data indicate that milk and other dairy products supply the greatest percentage of calcium; vegetables and grain products, the greatest percentage of iron; and dairy and grain products, the greatest amount of phosphorus, and in each case at the lowest cost.

THE CONSEQUENCES OF BURNS

The pathogenesis of the severe symptoms, often ending in death, which may follow burns has long been a matter of speculation. The widely unlike character of the phenomena involved makes it more than probable that differences in the degree of injury are attended by a variety of untoward consequences not necessarily dependent on a common cause. Thus, in burns of the first and second degree there is little, if any, actual destruction or disintegration of the tissues, the reaction being more nearly of a severe inflammatory character. On the other hand, in the severe damage of burns of the third degree, when subcutaneous cellular tissues are actually destroyed, unusual chemical products may be generated, and their possible deportment in the organism must be taken into account. It is easy to understand how local symptoms arise in the case of burns; but the nature of the less frequent but more aggravated general phenomena, with their remote effects, has been more puzzling.

An unusually large number of observations on a group of persons more or less severely burned in a munition factory near Frankfort¹ has afforded an opportunity to test, on a considerable scale, the validity of some of the theories that have been advanced to explain the consequences of burns. The theory of Sonnenburg,² which attributed death to a reflex depression of the vasomotor tonus, failed to receive support from these clinical cases. Vasomotor shock was not a common manifestation. Marked changes in the blood, reported by a number of observers, have been emphasized as factors of primary significance. Alterations in the form of the red corpuscles with hemoglobinuria,

1. Becky, K., and Schmitz, E.: Klinische und chemische Beiträge zur Pathologie der Verbrennung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **31**: 416, 1919.

2. Sonnenburg: Die Ursachen des Todes nach ausgedehnten Verbrennungen, Deutsch. Ztschr. f. Chir. **9**: 138, 1877; Virchows Arch. f. path. Anat. **80**: 381, 1881.

1. Langworthy, C. F.: Office of Home Economics: Some Results of the Work Carried on During the Fiscal Year 1918-1919, J. Home Economics **11**: 519 (Dec.) 1919.

and particularly a loss of water from the blood accompanied by an increase in the number of erythrocytes amounting sometimes to 4,000,000 per cubic millimeter, are on record. In the Frankfort victims hemoglobi-nuria, which is often regarded as an almost specific symptom of severe superficial burns, was by no means always present. The formed elements of the blood were considerably altered in several instances, but the most striking finding was the enormous increase in the number of leukocytes, which reached 50,000 per cubic millimeter in one case. Whatever the significance of such changes in the blood picture may be, they cannot be regarded by themselves as of sufficient moment to account for the severity of the symptoms exhibited by badly burned patients. In any event it is unlikely, to say the least, that the altered red corpuscles so often observed after burns could produce by thrombosis or embolism those lesions which have been observed at necropsy.

The most probable hypothesis of the pathogenesis of burns still remains unchallenged. It looks on the clinical manifestations, such as delirium, hemoglobi-nuria and albuminuria, as well as on the anatomic find-ings, as the outcome of a profound intoxication.³ How-ever obscure the nature of the hypothetic poison still is, there are many hints that it may be allied to those prod-ucts which are concerned in so-called anaphylactic shock. One thinks, first of all, of protein derivatives that might arise through the destruction of the tissues at the site of injury. It is no longer a new conception to assume that the organism may be sensitized by chemical compounds arising through abnormal reac-tions in its own tissues. Vogt³ has summarized this view in suggesting that death following immediately on a burn may be due to shock, while delayed death is the outcome of an intoxication. The poison is gen-erated in the area of tissue destruction, and by its continued absorption and distribution leads to a sensi-tization of the body which, in turn, permits subsequent death by anaphylaxis.

Corresponding with the views just formulated, the detection of foreign toxic products in the urine has been reported after severe burns as well as following anaphylactic seizures. Becky and Schmitz¹ assert the presence of a protein of unidentified character in the urine of the Frankfort patients, and they confirm the previous reports concerning the enhanced toxicity of the urine for mice. Bearing in mind the fiasco of earlier studies on "urotoxic coefficients," and the unfortunate confusion which they caused in discus-sions on "autointoxication," we may well hesitate to embody such evidence in any theory of intoxication after burns. The essential features of the possible production of poisons in burns are by no means invali-dated, even if the current evidence is not yet conclusive.

From the standpoint of treatment it cannot be too strongly emphasized that something far more serious and threatening than the mere disintegration of local-ized areas of tissue must be taken into account. A profound systemic intoxication may be involved.

"UP FROM INSANITY"

Newspaper medicine contributes much to the gaiety and insouciance of medical life, as may be seen by the frequent quotations from the lay press in our Tonics and Sedatives. There is some excuse for the ephemeral dailies whose reporters can hardly be expected to be familiar with the elaborate technical terms of medicine; it would be impossible to employ a medical censor to examine the hourly output of world news. It amuses us if the reporter discusses the interstitial glands, ascribes *Taenia solium* to its proper place in brain anatomy, credits some surgeon with the clever removal of the Ethiopian tubes, and eyes us as he writes with a scarcely perceptible movement of the alligator super-cilii. But it is a matter of concern when a dignified monthly periodical, with weeks and often months for consideration of its manuscripts, gives publicity to med-ical material which is unproved, misleading, untrue or sensational. It should not be difficult to have any med-ical essay scrutinized by expert physicians before publi-cation.

The November issue of the *Atlantic Monthly* con-tained an article entitled "Up from Insanity" by E. J., purporting to be the experiences of one who had been insane and had recovered. The editor of the *Atlantic* is at pains to say of the author that "his life has been precisely as described in his revealing narrative. He could not be so frank and sign his name; but that name is known to the editor. The paper has been the subject of much correspondence, and with the author's consent pains has been taken to verify many of the facts. The *Atlantic* has entire confidence that the story is genuine down to the smallest detail." The editor thus claims to have taken pains to verify many of the facts, and says that the story is genuine down to the smallest detail. But there is one fact, one small detail, that the editor has not authenticated; that is, as to whether the writer of the article has ever suffered from insanity. It is, of course, a small detail, but it should not have been overlooked.

There is no evidence in the article itself that "E. J." ever did suffer from insanity; and since the editor offers us no proof of the fact, it would seem that a very essential element in the story is lacking. On the other hand, there is in the article considerable evidence that the writer was not insane. After a harrowing description of an episode intended to be the real "thriller" of this sensational paper, the writer (on his way to hunt big game in Africa) consulted a "celebrated New York specialist" who told him he had only six

3. Bardeen, C. W.: Johns Hopkins Hosp. Rep. 7: 137, 1898. Eyff: Centralbl. f. d. Grenzgeb. d. Med. u. Chir. 4: 428, 1901. Pfeiffer: Virchows Arch. f. path. Anat. 180: 367, 1905. And particularly Vogt: Ztschr. f. exper. Path. u. Pharmacol. 11: 191, 1912.

months to live, and his advice "was to go out and hunt and roam the world and make the best of the passing hours." As there is no curable form of insanity in which sudden taking off could be predicted, and as any celebrated specialist would have been a little more politic in his prognosis to an insane man, and under such circumstances would have advised a sanatorium for the remainder of his brief career, we are inclined to believe that the specialist did not discover insanity in the patient. But he seems to have made a wrong prognosis, and Time took its revenge. The writer went on the suggested hunting trip to Africa, and on his return he learned that just *six months* after he had left the United States "*that great physician had died—insane.*"

We shall have to be brief with the "thriller" just alluded to: One cold, raw March day, while traveling from village to village in a buggy, as a salesman, apparently, he entered a country store and found as he crossed the threshold that a great change had come over him. He leaned against the counter to keep from falling, was unable to speak, and "grinned diabolically" in attempting to talk to the merchant. The merchant in a kindly and fatherly way helped him back into his buggy, and he drove seven miles in a torrential down-pour to a village inn. The host helped him out, and as he supported him into the house winked at his pals around the stove. The patient grinned "like a Cheshire cat," had lost his power of locomotion, stared at the pals who burst out laughing in his face, finally got to his room, fell across the bed fully dressed and went to sleep, with a vicelike frontal headache. Sometime in the night he awoke, lighted a lamp, looked at himself in the mirror (he describes the "horrible caricature" with reportorial frills) and then became intensely nauseated and violently ill! After closing this description he exclaims: "That, my friends, is insanity, the ultimate curse of God." On the contrary, the description does not fit insanity at all, but is a clinical picture of a condition very familiar to physicians and to laymen in times past—before the days of prohibition. The inn-keeper and his friends around the stove evidently—from the text—made a diagnosis at the time. They laughed. Their diagnosis may have been wrong. It may be that it was a hysterical nervous condition from fatigue and exposure simulating closely intoxication; but the description does not fit insanity.

The picture of himself as drawn by the writer in the article is that of a man now about 42 years of age, who had been at various times a salesman, a wanderer and a reporter. He was a poor mixer, odd, eccentric, shy, morbidly self-conscious so that at one time he wore blue glasses because of this, and given to introspection. In other words, he describes the usual course of an ordinary case—a neurotic individual with a tendency to hypochondriacal self-analysis, self-pity and gross exaggeration of his symptoms.

There is plenty of really good literature written by the insane, either after recovery or during the progress of the disease, and some of it has been of distinct benefit to humanity; for instance, "The Mind that Found Itself," by Clifford Beers—a book that led to the foundation of useful societies of mental hygiene in this country and Canada, and has furthered the welfare of the insane everywhere. Then there is the "Autobiography of a Paranoiac," extracts from which were published years ago in the *Journal of Psychology*, a truly extraordinary self-analysis, written in most excellent style, and a real contribution to psychology. "Up from Insanity" is misleading and sensational, carries no conviction, does no good, and the *Atlantic Monthly* is the last periodical in which one would expect to see such an article.

BOTULISM FROM RIPE OLIVES

For the fourth time within a few months a highly fatal outbreak of botulism due to ripe olives is recorded in our columns. The article on an outbreak of botulism in New York in THE JOURNAL¹ this week follows close on the heels of the report of the Memphis outbreak in our "General News" of last week. These added to the outbreaks at Canton, Ohio, and Detroit make a formidable showing.

Three of the four outbreaks appear to have been traced to one brand of olives, packed in southern California, a fact that we believe should be given wide publicity at this time, even if commercial interests suffer. It seems at all events as if all local health authorities should make systematic attempts to find out whether this particular brand of olives is being distributed within their jurisdiction. It is only the part of prudence and good common sense to make sure so far as possible that olives of this brand are not being "salvaged" and perhaps distributed to scores of small groceries and delicatessen shops throughout the country.

Two particularly disturbing features characterize these later outbreaks, one being that the olives apparently responsible for the New York outbreak were not of the same brand as those causing botulism in Canton, Detroit and Memphis. If it is true that more than one brand of olives is involved in the causation of botulism, the difficulties that public health authorities will have in coping with this menace are measurably increased. It is evident also that the whole ripe olive industry should be subjected to investigation and supervision. Steps in this direction have already been taken, as is also noted in our news columns. Thus far green olives do not seem to have been implicated in the causation of botulism.

The second point about which concern may well be felt is the seeming willingness of unscrupulous dealers

1. Sisco, D. L.: An Outbreak of Botulism, this issue, p. 516.

to sell olives and perhaps other foodstuffs that have been condemned. We are informed that the olives causing death in Memphis were obtained from a store of which the principal business is buying and selling salvaged merchandise. In this case, olives found in a dish on the table at the house where they were served had a very objectionable and pronounced foul odor. In the New York outbreak, a distributing company in New York City refused to put the olives on the market under their label, but the jars were resold by the California olive company that packed them and were shifted about from place to place for some months, many being rejected during their circulation because they were obviously spoiled and unfit for sale. From the information available it does not seem clear that the olives that were eaten in New York had a definitely spoiled odor. The only evidence from those eating the olives came from one victim shortly before death, who stated that he noticed nothing wrong about the odor or taste, and from one 9 year old child, who also noticed nothing disagreeable in taste or odor. Although a half bottle of ripe olives, probably the one that contained the toxin, was found in the home of the victims, no statement is made about the physical condition of these olives.

It seems clear that immediate and drastic warning should be given to dealers regarding the sale of ripe olives showing any signs of spoiling. It is also true that at least until fuller information is available salvaged food, particularly olives, should be regarded with considerable suspicion by the general public.

Current Comment

A PECULIAR SYNDROME ASSOCIATED WITH ADENOMA OF THE HYPOPHYSIS

Hitherto there have been two clear-cut clinical pictures associated with disease of the hypophysis: acromegaly, first accurately described by the French clinician Pierre Marie, and the syndrome described many years later by Fröhlich as dystrophia adiposogenitalis. It has generally been assumed that acromegaly is an indication of hyperpituitarism, while Fröhlich's syndrome is a manifestation of hypopituitarism. The work of American observers, and particularly of Harvey Cushing, has thrown a good deal of light on the subject of disorders of the hypophysis, and has indicated that in addition to these classical pictures certain atypical manifestations may at times be associated with disease of this gland. Reichmann¹ has recently recorded two examples of a third fairly clear-cut syndrome associated with disease of the hypophysis and easily distinguishable from either acromegaly or Fröhlich's syndrome. The prominent clinical features presented by his patients were turgidity and cyanosis of the face, with exophthalmos and dilated pupils; cardiac hypertrophy, with hypertension and bradycardia;

glycosuria, premature menopause, pronounced myasthenia, edema of the legs, and a blood picture showing a decrease in the lymphocytes. In the patient who came to necropsy, the lesion was a chromophil adenoma of the anterior part of the hypophysis, such as has been described by Benda as characteristic of acromegaly. The necropsy disclosed in addition a small thyroid rich in colloid material, and a slight but definite hyperplasia of the suprarenals. There was also osteoporosis in the bones of the vertebral column, and the patient had noted that her stature was gradually decreasing. It is apparent from the pathologic findings in this case that, while the main lesion was in the hypophysis, there was evidence that other glands of internal secretion were involved. The thyroid was smaller than normal, and the suprarenals were somewhat hyperplastic. Indeed, Reichmann had concluded during the patient's life that the syndrome was probably a polyglandular one. Reichmann is of the opinion that the clinical picture presented by these patients is not exceedingly uncommon. It will, of course, require further reports to determine whether this is the case. History has usually shown that the description of a new syndrome is followed by its recognition in various parts of the world, and there is little doubt that other reports on this peculiar condition will appear in the literature if Reichmann's assumption is correct. Since our knowledge of the glands of internal secretion is still very fragmentary, observations of this sort are stimulating both to the clinician and to the laboratory worker.

THE PIGMENTS FOUND IN NERVE TISSUES

The existence of lipochromes—fat-holding or fat-combining pigments—in various parts of the body has long been recognized. The yellow color characteristic of the corpora lutea belongs to the group here referred to. Only in recent years has the chemical nature of some of the lipochromes been more clearly understood. The pigments of milk fats and body fats, of egg-yolk, of blood serum, of the corpus luteum and of other tissues have been identified as belonging to two classes of coloring matter, the carotin and xanthophyll pigments, respectively. We are indebted especially to the work of Palmer and his associates¹ in this country that these carotinoid pigments are now known to represent in many, if not in all cases, merely the lipochromes of plants transferred in the form of animal or human food and incorporated into the animal tissues. Histologists are familiar with a pigment that accumulates in the nerve cells in advancing life and sometimes under pathologic conditions. Of its origin and nature little has been known definitely. Because the pigment has been observed in certain wasting processes, some pathologists have looked on it as originating in the cells through their "wear and tear." As nothing more specific than staining methods has been depended on to determine the identity of the so-called cell lipochromes in most cases, it is by no means certain that the same products have been encountered in every instance.

1. Reichmann: *Deutsch. Arch. f. klin. Med.* **130**:133, 1919.

1. Palmer, L. S., and Eckles, C. H.: *J. Biol. Chem.* **17**:191 (March) 1914; **23**:261 (Nov.) 1915; **27**:27 (Oct.) 1916.

For one case, that of the lipochrome pigment of the nerve cell, however, the researches of Dolley and Guthrie² at the University of Missouri appear to have given a satisfactory answer. They demonstrate that it is a plant carotinoid pigment, derived from the food and incorporated in the cell, but limited to such species as carry carotinoids in the blood serum. Thus, in bovines, the occurrence of lipochrome in nerve cells appears to be customary; in swine, it is absent. Man, who is best known to exhibit lipochrome, is also known to carry carotinoids in his blood serum and to have colored fat. Some investigators have attempted to distinguish a group of pathologic pigments from the true lipochromes by calling them "lipofuscins."³ Dolley and Guthrie² have been able to make pigment appear in or be absent from the nerve cells, according to the method of feeding they employed. When carotinoid-free diets were given, the lipochrome was missed from the nerve cells. They demonstrated that the reactions of the pigment that they could induce experimentally to deposit in the nerve cells was identical in its microchemical tests with the so-called "lipofuscin." The quite different melanin pigment that has been noted in nerve cells is, according to Dolley,⁴ likewise not a natural constituent of any region of the nervous system, nor is it a product of normal or hypernormal functional activity. The genesis of the melanin pigment under all conditions, physiologic, morbid or senile, the Missouri investigators assert, is referable solely to depression. According to them, the histogenesis of the melanin pigment found in nerve cells is from nuclear material.

BRONCHIAL SPIROCHETOSIS

As long ago as 1905, Castellani, the student of tropical diseases, described the occurrence in the island of Ceylon of a form of bronchial infection caused by spirochetes. Since that time other observers have seen cases of bronchial spirochetosis in various parts of the world, but chiefly in the tropics. The American observers Jackson and Waters recognized the disease in the Philippines in 1908. The experiences of the recent war led to the observation that the disease was not confined to tropical countries. During the war, cases were observed in considerable number along the Adriatic coast, in Serbia, in Switzerland and in France. Recently Farah⁵ described a number of cases of the disease in Egypt. The condition is one that is usually confused with tuberculosis. It generally runs a chronic course, although it may occur in the acute form. Patients usually complain of a chronic cough which is worst on arising and toward night and is accompanied by an expectoration that is frequently bloody. In the common form of the disease, the

chronic type, the patient is usually afebrile, and no pronounced effect on the general health results. The recognition of the disease depends on the finding in the sputum of the characteristic spirochete, which was named by Castellani *Spirochaeta bronchialis*. The organism stains readily with the ordinary basic aniline dyes, but does not take Gram's stain. It generally occurs in the sputum in large numbers. Attention is called to the subject at the present time because of the return of large numbers of our citizens from service in France and other European seats of war where the disease might possibly have been contracted.

THE ATTEMPTS TO TRANSPLANT TUMORS

It has been remarked that the cancer problem, like the kingdom of heaven, is within us. An ordinary infection can be transferred from one individual to another, and the disease may often even be conveyed between individuals of different species. This is in striking contrast to what is true of most neoplasms. They do not continue to develop when introduced into another than the original host. Hence, when it was found that one or more varieties of tumors having something in common morphologically with the malignant growths of man could be transferred from animal to animal, particularly in the case of mice, the hope of finding important facts in relation to the spread of such tumors was greatly encouraged. The story of transplantation experiments in cancer research is a history of many chapters. Spurred on by the striking analogies with human experience obtained in the investigation of tumor grafts in mice, as well as by the tremendous human importance of the questions at issue, numerous investigators have turned their best energies toward transplantation studies. Despite the oft repeated experience of "negative results," the workers have persisted in what has often seemed to be a hopeless undertaking. Nothing short of the courage of mind which is a characteristic of the true man of science could have kept cancer research alive to the degree that is represented by its place in present day medical inquiry. Yet in the midst of many disappointments and of the protracted uncertainties, some positive findings and helpful information have almost always been forthcoming. Each year has witnessed the patient unearthing of some new fact that has proved to be a spur to further initiative. As an illustration of this we may cite the recent attempts of Mann¹ in the Department of Experimental Surgery at the Mayo Clinic to obtain a transplantable tumor in the higher species of animals. Heretofore all such experiments, with the exception of those dealing with the infectious sarcoma of the dog, have been failures. Mann has made a new effort to transplant tumors of the dog and cat, for the advantage of obtaining a transplantable growth in a larger species is obvious. The results obtained in the Rochester experiments were strikingly similar to those hitherto observed in autotransplantation and homotransplantation of normal tissues. The transplants of a mammary carcinoma of a dog and of a fibroma of a cat failed to

2. Dolley, D. H., and Guthrie, Frances V.: The Pigmentation of Nerve Cells, II, The Lipochrome a Plant Carotinoid Pigment, J. M. Research, **40**: 295 (Sept.) 1919.

3. Wells, H. G.: Chemical Pathology, 1918, p. 475.

4. Dolley, D. H.: The Recovery from Depression in the Purkinje Cell and the Decline to Senility of Depression: With the Incidental Histogenesis of Abnormal Pigmentation, J. Comp. Neurol. **28**: 465. 1917. Dolley, D. H., and Guthrie, F. V.: The Pigmentation of Nerve Cells, I, The Non-Fatty, Melanotic Pigment in the Dog and Rabbit Produced by Chronic Depression, J. M. Research, **39**: 123 (Sept.) 1918.

5. Farah, Najib: Presse méd. **27**: 774 (Dec. 17) 1919; abstr. J. A. M. A. **74**: 360 (Jan. 31) 1920.

1. Mann, F. C.: Attempts to Obtain a Transplantable Tumor in the Higher Species of Animals, J. Cancer Res. **4**: 331 (Oct.) 1919.

develop to any noteworthy extent on other individuals of the same species. The transplants of the fibroma which were made in the donor grew, however, and were exactly similar to the mother tumor in the cat. Mann has discovered the lesson in such experiences. The problem, he says, of developing a transplantable tumor in the higher species of animals is, it would seem, closely allied to the problem of making homotransplants of normal tissues grow. Here, again, is a fruitful field for renewed research.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Reciprocal Relations Established.—Reciprocal relations have been established between the state medical licensing boards of California and Iowa which became effective Jan. 22, 1920.

New Officers.—At the meeting of the West Side Medical Association of Kern County, held in Taft during the week of January 17, Dr. Harry N. Taylor, Maricopa, was elected president, and Dr. Allen, Taft, secretary.

Botulism Study.—A fund has been raised by the olive growers and the canning industry for an intensive study of botulism in California. The investigation will be conducted in the laboratories of the Stanford University Medical School and the George William Hooper Foundation for Medical Research of the University of California and has the cooperation of the U. S. Public Health Service and the California state board of health. A careful study will be made of the distribution of *Bacillus botulinus* in nature, of the ways in which food materials may become infected and of the steps necessary to destroy the organism when it has infected raw food materials. It is expected that the work will require at least two years.

FLORIDA

Personal.—Dr. Clarence M. Slack has been elected mayor of St. Petersburg.—Dr. John T. Bowen, Clearwater, who has been on duty with hospitals in Serbia during the world war, has received a decoration from the Serbian government.

Bequest to Health Bureau.—A citizen of Florida, who wishes to remain anonymous, has deposited with the state officer a will in which he leaves \$75,000 to carry on the fight against venereal disease. The will provides that a corporation must be formed to administer the bequest, which constitutes the major portion of the testator's fortune.

County Society Program.—The committee on scientific work of the Hillsboro County Medical Society has issued the society's program for 1920 in the form of a calendar. The meeting days of the society are red letter days to the physicians of the county. At the bottom of the page for each month appears the scientific program for the society's bimonthly meetings.

ILLINOIS

Chicago

Grant by the Fenger Memorial Association.—The Fenger Memorial Association, at the suggestion of Dr. Ludvig Hektoen, has awarded Dr. Harry B. Culver a grant to aid in the study of certain urinary infections.

Dinner to Philadelphia Neurologist.—Dr. Charles H. Frazier, Philadelphia, was given a complimentary dinner at the University Club, February 18, at which he met former service men who had been members of his classes, and afterward read a paper before the Chicago Medical Society on major trigeminal neuralgias and their treatment.

Decrease in Influenza and Pneumonia.—From more than 2,000 there was a drop to 136 cases of influenza, February 14, and pneumonia cases dropped from a maximum of 300 to

56. Eighteen deaths were reported from influenza, and twenty-three from pneumonia. On account of the improvement in the influenza situation, the ban on visiting in hospitals has been removed, and public funerals are again permitted.

Augustana Hospital Drive.—A drive of the Augustana Hospital for \$700,000 for the erection of a new building was opened, February 16, by the first of a series of ten dinners. Addresses were made by Chief Justice Harry Olson, chairman of the executive committee, Dr. William A. Evans, Mrs. C. A. Evald, and Mrs. Albert J. Ochsner. A budget was approved to apportion to the various divisions the following amounts: executive committee, \$18,245; men's division, \$22,911; women's division, \$5,454; miscellaneous, \$2,300.

Joint Meetings.—A joint meeting of the Chicago Pediatric Society and Clinic Society of the Children's Memorial Hospital was held at the hospital, February 20. Dr. John A. E. Eyster of Madison, Wis., delivered the address of the evening.—A joint meeting of the Chicago Medical Society and American Congress on Internal Medicine will be held February 25, at 8:40 p. m. Dr. A. Scott Warthin, chief of the department of pathology of the University of Michigan, Ann Arbor, will deliver an address on "The Medical Aspects of Gassing and Warfare with Particular Reference to Mustard Gas," illustrated by lantern slides.

INDIANA

Conference on Mental Hygiene.—At the Indiana Conference on Mental Hygiene held in Indianapolis, December 15, under the auspices of the Indiana Society for Mental Hygiene, President William Lowe Bryan of Indiana University, Bloomington, was elected president; Mr. Z. T. Fitzgibbon, Muncie, vice president; Mr. Paul Kirby, Indianapolis, secretary, and Mr. Edward Woollen, Indianapolis, treasurer. Medical members of the executive committee are Drs. S. E. Smith, Richmond, George S. Bliss, Fort Wayne, and Charles P. Emerson, Indianapolis.

Personal.—Dr. Columbus B. Goodwin, Kendallville, is reported to be seriously ill with pneumonia in Lakeside Hospital.—Dr. George S. Bliss, superintendent of the Indiana Home for Feeble-Minded Youth, Fort Wayne, has been appointed executive head of a similar institution operated by the United States government in Honolulu, Hawaii.—Henry C. Gemmill, director of the Fort Wayne municipal venereal clinic, has resigned to accept a position as executive officer of the seventh district of the U. S. Public Health Service with offices in Cincinnati.

LOUISIANA

Full-Time Health Work.—The Rapides Parish Police Jury has appropriated \$15,000 to be supplemented by appropriations made by Alexandria for carrying out full-time health work.

No Bubonic Plague in New Orleans.—The U. S. Public Health Service announces there have been no new cases of human plague in New Orleans since December 29. During the two months preceding, there were in all twelve cases of human plague, all of them among those employed in the large food warehouses located near the water front. The situation was promptly and effectively met by the authorities, and New Orleans is declared to be just as safe today as any other city in the country. It is just as safe to visit New Orleans as it is to visit Rome, Paris or any other large city.

MASSACHUSETTS

Tuberculosis Association Established.—The representatives of organizations in northern Massachusetts which are interested in the control of tuberculosis met, February 4, in Salem and organized the Northeastern District Tuberculosis Association, electing Israel C. Clark, Haverhill, president; Mrs. Sturges, Salem, vice president; Mrs. George G. Winchester, Gloucester, secretary, and Josiah Gifford, Salem, treasurer.

Universal Military Training Bill.—Acting on the unanimous request of the council of the Massachusetts Medical Society, the joint committee on legislation of that society and of the Massachusetts Homeopathic Medical Society, February 10, considered and unanimously endorsed the medical aspects of the bill now before Congress providing for universal military training. It was the opinion of the committee, which represents over 4,000 physicians of Massachusetts, that the detection of diseases and defects through physical examination, their relief by appropriate measures,

and the betterment of health and physique through out of door life and exercise must inevitably improve greatly the physical condition of the young men throughout the country.

MICHIGAN

Society Reorganized.—Physicians of Barry County met at Hastings, December 31, and reorganized the Barry County Medical Society, electing the following officers: president, Dr. Clarence H. Barber, Hastings; vice president, Dr. Edgar T. Morris, Nashville; secretary, Dr. Arthur W. Woodburne, Hastings.

State Officers Reelected.—At the meeting of the trustees of the Michigan State Medical Society in Detroit, December 13, Dr. Frederick C. Warnshuis, Grand Rapids, was elected secretary and editor of the official organ. Dr. David Emmett Welsh, Grand Rapids, was reelected treasurer. It was decided that the annual meeting of the society be held in Kalamazoo, from May 25 to 27.

Personal.—Dr. Garfield Smalley, Charlotte, who has been in Central America for a number of years, is ill with tropical fever in the Charlotte Sanatorium.—Dr. Vern N. Richeson has succeeded Dr. Jeannette Brigham, resigned, as city health officer of Howell.—Dr. George K. Pratt, Flint, has been made assistant superintendent of the Oak Grove Hospital.—Dr. Lloyd C. Harvie, Saginaw, has been appointed city physician of Saginaw to succeed Dr. Leon B. Harris, deceased.—Dr. Lucius G. Fitzgerald, Port Huron, was acquitted by a jury, January 19, of the charge of performing an illegal operation.

MINNESOTA

Upper Mississippi Physicians Elect Officers.—At the annual meeting of the Upper Mississippi Medical Society held in Brainerd, January 8, the following officers were elected: president, Dr. J. A. Evert, Brainerd; vice president, Dr. F. L. Wilcox, Walker; secretary-treasurer, Dr. Irving Badeaux, Brainerd.

Overseas Medical Officers Club.—Minneapolis physicians, surgeons and dentists who served in the U. S. Army, Navy, Marine Corps or Public Health Service during the world war met, January 15, and organized a club, of which Dr. Frederick E. Haynes was elected president and Dr. Clifford E. Henry, secretary.

Deaths.—Elmer Ray Hoskins, Minneapolis; Ph.D., University of Minnesota, 1916; aged 30; Instructor in Anatomy, University and Bellevue Hospital Medical College, 1917-1918; Lieut., U. S. Sanitary Corps, 1918-1919; Associate Professor of Anatomy, University of Pittsburgh, and Assistant Professor of Anatomy, University of Minnesota, 1919; extensive contributor to the literature on the endocrine organs; died January 30, from influenza-pneumonia.—Walter W. Denny, a senior student of the University of Minnesota and an intern in St. Paul City Hospital, died January 26, from influenza.

MISSISSIPPI

Physician Sentenced.—Dr. Fletcher E. Lee, Aberdeen, is said to have been found guilty of manslaughter and sentenced to imprisonment for twenty years. Dr. Lee was charged with performing a criminal operation, as a result of which Miss Mary Miller of Aberdeen died.

Infirmery Purchased.—The locating commission of the Mississippi conference of the Methodist church has purchased the South Mississippi Infirmery, Hattiesburg, from Dr. Walter W. Crawford for \$30,000. The present building will be moved and the infirmery will continue work until new buildings to cost \$500,000 are ready for use.

NEW JERSEY

New Officers.—At the reorganization meeting of the Greenville Medical Society held in Jersey City, January 14, Dr. Samuel A. Cosgrove and Dr. Leonard B. Fauquier, both of Jersey City, were elected president and secretary-treasurer, respectively.—At the annual meeting of the Atlantic County Medical Society held in Atlantic City, January 9, Dr. Henry T. Harvey was reelected president, Dr. Walt P. Conaway, vice president, and Dr. Edward Z. Holt, secretary-treasurer; all are residents of Atlantic City.

Personal.—Dr. Marcus A. Curry, Greystone Park, has been appointed physician in chief and medical superintendent of the Morris Plains State Hospital pending the election of a permanent superintendent to succeed Dr. Britton D. Evans,

deceased.—Dr. Philip Embury, Basking Ridge, recently sustained severe cuts and bruises when his automobile was struck and demolished by a train at a grade crossing on the Lackawanna Railroad.—Dr. Matthew K. Elmer, Bridgeton, has been elected a director of Cumberland National Bank.—Drs. David H. Oliver and Stacy M. Wilson, Bridgeton, have been elected directors of the Cumberland Trust Company.—Dr. William G. Schaffler, Lakewood, recently discharged as Colonel, Medical Corps, U. S. Army, resumed practice at Princeton, February 1.—Dr. Blase Cole, Newton, has been elected a director of the Merchants National Bank, Newton.—Dr. John R. C. Thompson, Bridgeton, has been reelected physician of Cumberland County.—Dr. Morris R. Faulkner, Vineland, sailed from New York for South America, January 15.

NEW YORK

New Officers.—At the annual meeting of the Medical Association of Oneida County held in Utica, January 13, the following officers were elected: president, Dr. Wood Clark; vice president, Dr. John D. Jones; secretary, Dr. Daniel E. Pugh, and treasurer, Dr. Robert Sloan, all of Utica.

Welfare Legislative Program.—Social welfare and labor legislative programs were discussed at a hearing before the senate labor committee February 12. These measures include the Knight bill extending the workmen's compensation law to cover occupational diseases, a health insurance measure, and a bill regulating the working hours of women and children.

Board of Inebriety Quits.—Assemblyman Martin McCue reported to the Assembly at Albany that the New York City board of inebriety, organized in 1910 to care for persons addicted to overindulgence in intoxicants, has found no one in need of its aid and has asked to be disbanded. A bill was introduced to delegate its powers to the board of correction.

Personal.—Count Pierre de Nouy, who was here during the war working for the French Mission, arrived on the *Rochambeau*, February 11, to take charge of the new laboratories of the Rockefeller Institute in connection with Dr. Alexis Carrel's research work.—Dr. St. Clair Darden, Poughkeepsie, has been appointed superintendent of the Healthwin Hospital and has assumed the duties of his position.

New York City

Personal.—Dr. Seymour Oppenheimer has been appointed a trustee of the state institute for the study of malignant disease.—Dr. Philip F. Bernstein, Brooklyn, has been appointed diagnostician to the Brooklyn section by the New York department of health.

Sanitary Code Affecting Milk.—At a recent meeting of the board of health, section 155 of the sanitary code of the department of health was amended and the term "modified milk" was defined. Under the terms of the amendment "modified milk" means any subdivision of the classification known as "Grade A for infants and children" which has been changed by the addition of water, sugar of milk or other substance intended to render the milk suitable for infant feeding. Such milk cannot be sold without a permit from the department of health.

NORTH CAROLINA

School Clinic.—Buncombe County Medical Society has established a permanent clinic at Asheville for the treatment of schoolchildren suffering from adenoids and diseased tonsils. Arrangements have been made for operations at the Mission, Meriwether and Biltmore hospitals, the physicians donating their services, but the hospitals making graduated charges not exceeding \$12.50. The clinic will not be limited to Buncombe County, but will be open to those in western North Carolina.

Personal.—Dr. Andrew J. Warren, Raleigh, assistant state health officer, has been appointed health officer of Charlotte, succeeding Dr. C. Curtis Hudson, Charlotte, who resigned to accept a similar position in Richmond, Va.—Dr. James C. Braswell, Whitakers, was elected grand master of North Carolina masons at the meeting of the grand lodge at Raleigh.—Dr. Walter A. Newman, Wilmington, physician of New Hanover County, has been appointed field health director for Halifax County, Va.

Sanatorium Burns.—The Royal League Sanatorium, Black Mountain, with all its cottages, was destroyed by a fire originating in the power house on the night of February 15. Dr.

Isaac J. Archer, the superintendent, and the nurses and staff removed the patients without casualty to Cragmont Sanatorium, nearby. The loss is estimated at \$30,000, partially covered by insurance. This sanatorium was the first to be established by a life insurance or fraternal insurance organization for the care of its members suffering from tuberculosis.

OHIO

Starts for Prison.—Dr. William A. Charter, Marion, sentenced several weeks ago to imprisonment in the penitentiary for from one to seven years for performing an illegal operation, was taken to the penitentiary, January 21.

Peak of Influenza Epidemic.—The larger cities of the state have passed the peak of the influenza epidemic, and the mortality is presumably at its height, but it is likely that the incidence of the disease will yet be greater in smaller towns and rural districts.

Hamilton S. Biggar Prizes.—The Cleveland Medical Library Association announces a prize essay competition for two prizes, one of \$200 and one of \$100, to be designated the Hamilton S. Biggar Prizes of the Cleveland Medical Library Association. Competition is open to members of the medical profession of Cuyahoga County, senior students in Western Reserve University and interns in hospitals in Cuyahoga County. The prizes will be awarded for the best essays on some clinical or theoretical subjects of immediate clinical interest. Manuscripts must be submitted to the secretary of the association, Dr. George Edward Follansbee, on or before Oct. 1, 1920, the identity of the author being safeguarded in the usual way. The announcement of the winners of the prizes will be made at the annual meeting of the association in December.

Personal.—Dr. James W. Young, Bellefontaine, has been appointed coroner of Logan County, succeeding Dr. Horace A. Skidmore, resigned.—Dr. David E. Stephen, Lorain, was seriously injured in a collision between his automobile and an interurban car, January 14.—Dr. LeRoy Pence was elected president of the Mechanics Building and Loan Association, Lima, at its annual meeting, January 20.—Dr. Jonas E. King, Girard, has been appointed health commissioner of Trumbull County.—Dr. James J. Martin, Bucyrus, has been elected city health commissioner.—Dr. James P. Wortman, Crooksville, suffered a fracture of the leg in an automobile accident, January 20.—Dr. Robert C. Rind has been elected president of the Springfield City Hospital staff. Dr. Clarence S. Ramsey has been reelected vice president and Dr. William B. Quinn has been elected secretary.

PENNSYLVANIA

Academy Offers Use of Library.—The Pittsburgh Academy of Medicine announces that the use of its library is open to all members of the Allegheny Medical Society and that a resident librarian is on duty at the Academy building, 322 North Craig Street, from 10:30 a. m. to 2:30 p. m., daily.

New Officers.—Mercer County Medical Society held its meeting January 4 at Buhl Hospital, Sharon, preceded by a clinic and luncheon. The following officers were elected: president, Dr. Frank Bleakney, Grove City; vice presidents, Drs. Augustus M. O'Brien, Sharon, and David Ferringier, Stoneboro; secretary, Dr. Martha Edith MacBride, Sharon, and treasurer, Dr. Carl J. Mehler, Sharon.

Licenses Revoked.—Federal attorney E. Lowry Humes was notified February 8 by Dr. John M. Baldy, Philadelphia, president of the Bureau of Medical Education and Licensure, that the bureau has revoked the license of Dr. Ellsworth J. Trader of Pittsburgh, now serving a sentence in the federal prison in Atlanta, Ga., for illegal writing of prescriptions for narcotics.—Six Pittsburgh physicians have been arrested by federal agents in the last few weeks.

Philadelphia

Campaign Against Quacks.—A city-wide campaign against quack doctors was announced February 10 by assistant district attorney Charles Edwin Fox, after William J. Locker, a practitioner of drugless therapy, pleaded guilty before Judge Rogers of practicing without a license.

Provost of University Resigns.—After forty-four years of service in college work, Provost Edgar Fahs Smith of the University of Pennsylvania has tendered his resignation to the board of trustees. He announced his complete retirement from all university activities and connections, giving

up not only his office as provost which he has held since January, 1911, but also the Blanchard professorship of chemistry.

Personal.—Dr. Joseph C. Beck, Chicago, professor of rhinology, otology and laryngology of the College of Physicians and Surgeons of Illinois, read a paper on the use of radium and other nonsurgical measures in malignant disease of the head and neck, before the section on otology and laryngology of the College of Physicians, February 18.—Dr. Alonzo E. Taylor of the University of Pennsylvania sailed for Europe, February 14, to make a close study of food conditions in the "hungry sections" of the continent.—Dr. C. Lincoln Furbush, director of public health and charities, has been confined to his home with a mild attack of influenza.

VIRGINIA

Improvement of Health Administration.—The United States Public Health Service is conducting a campaign throughout the state to improve health administration in the rural districts. The work is being financed jointly by federal, state and local authorities.

Damages Against Sanatorium.—Henry Cohen, Jr., is said to have been awarded \$2,000 damages in his suit for \$10,000 which he brought against the Tucker Sanatorium, Richmond, claiming that he sustained injuries as a result of the application of hot water bags, while he was a patient in the institution in December, 1918. The attorneys for the sanatorium made a motion to set aside the verdict on the ground that the amount awarded was excessive.

WASHINGTON

Physicians Meet.—At the recent meeting of the Washington Medical Library Association held in Seattle, Dr. Samuel J. Holmes, was reelected president for the fourteenth term; Dr. J. A. Smith was elected vice president, and Dr. Charles A. Warharnik, secretary-treasurer. The number of active members of the association has increased to 177.—At the meeting of the Pierce County Medical Society held in Tacoma, February 10, the topic of the evening was an open discussion of influenza, inaugurated by Dr. Charles S. Wilson of the city health office.

Laboratory Activities.—The work of the laboratory of the Washington state board of health for January shows a large increase over previous records. The number of examinations totaled 1,318; representing an increase of 67 per cent. over the December total and of 220 per cent. over the monthly average for 1918. There has been an epidemic of diphtheria in the state, and the laboratory has been able to render efficient service in the distribution of large amounts of mediums as well as in the prompt diagnosis of cultures. The increase in the diphtheria diagnostic work is shown by the January total of 728 in contrast to the total of 915 for the entire year 1919. Virulence tests on the carrier cases have been made where requested at the expiration of the quarantine period. The Wassermann work also shows a steady increase since its introduction in 1918. The Wassermann specimens for 1918 totaled 435; for 1919 the total was 1,827, and for January, 1920, it was 278.

WISCONSIN

Hospital Items.—The new Milwaukee Maternity and General Hospital, formerly the Columbia Hospital, has been completely remodeled at a cost of more than \$10,000 and was opened for inspection, Dec. 21, 1919.—The Methodist conference is reported to be planning to buy St. Joseph's Hospital, Racine, and will erect an \$80,000 hospital building.

CANADA

Hospital News.—The old Toronto General Hospital is to be purchased by the city of Toronto and will be converted into an isolation hospital.

Medical Clinic for Kingston.—Incorporation has been granted to the Kingston Clinical Association, Limited, with a capital of \$100,000. The purpose of the association is to conduct a medical clinic which will standardize the systematic examinations. Specialists in each branch of medicine will be in charge, and all modern science equipment will be used. This will make Kingston a more important medical center, as it is the first clinic of the kind to be established in Canada. Dr. Walter T. Connell will be the director.

Public Health Notes.—Representatives of the Academy of Medicine, Toronto, and of the Ontario Medical Council,

headed by Dr. Edmund E. King, recently waited on the Ontario Government in support of the vaccination act. The physicians desire that the act be left unamended, or else strengthened by giving more power to the Ontario board of health and the medical officers of health. Every child should be vaccinated before going to school at least, and there should be subsequent vaccination if necessary. The deputation thought it would be in the interests of the community if vaccination was made compulsory.—Dr. Arthur A. Simard, Quebec, president of the provincial board of health of Quebec, reports the general health of the province as good. Close touch with the origin and spread of smallpox in Ontario has been maintained, and it has been decided not to lift the boundary quarantine against Ontario. Every precaution is also being taken against the admission of influenza into that province. This disease has been present in many points in Ontario, and although not so bad as the epidemic of 1918, a large number of deaths from influenzal pneumonia have been reported.—Toronto has had as many as thirty deaths a day from influenza, and the height of the epidemic has evidently not been reached.—The Winnipeg epidemic of encephalitis lethargica has reached sixty cases with twenty-three deaths, an unduly high mortality rate of 38 per cent. In eighteen cases the brain was examined and showed marked congestion, perivascular infiltration with lymphocytes and plasma cells, and occasionally hemorrhage. Degeneration of the nerve cells was variable, the changes being most marked in the midbrain. Marked lesions were also found in the kidneys. A remarkable epidemic of hiccup occurred in Winnipeg at the same time.

FOREIGN

Fuchs in Spain.—On the invitation of the Junta de Ampliación de Estudios (Postgraduate Studies' Board), Dr. E. Fuchs, professor of ophthalmology at the University of Vienna, will deliver a course of lectures at Madrid on the pathology of eye diseases. In addition, his lectures will be supplemented by explanations by Dr. Cajal.

Deaths in the Profession Abroad.—Dr. H. Müller, professor of internal medicine at the University of Zurich until 1918, aged 71. Percussion and auscultation were his hobbies, he used to say, and he used them in perfecting the diagnosis of heart disease so that under his teachings congenital heart disease is detected earlier and in larger proportions in Switzerland, it is said, than elsewhere.—Dr. Julio Robert, physician to the French embassy at Madrid and to the French hospital, director of the first infant consultation station at Madrid.

Prize for Research on Nerves.—The *Nederlandsch Tijdschrift* publishes a notice from the University of Leyden to the effect that the Bachiene prize of at least 500 florins, with a parchment certificate, will be awarded for the best work on the recording of the electric phenomena in the living body of certain nerves that have not already been thus studied. The nerves that have been already investigated are the phrenic, the vagus of the lung and the depressor nerves. It is stated that competition is open to all, and the competing articles describing the research can be in Dutch, French, English or German. They must be in the hands of the secretary, H. Krabbe, Witte Singel 28, Leyden, Netherlands, before March 1, 1921.

LATIN AMERICA

Influenza in Havana.—On account of the prevalence of influenza, the health officer of Havana, Dr. López del Valle, has put in force several measures to combat the spread of the disease. Among the measures adopted are the forbidding of all mask balls and children's dances, the placarding of houses where cases occur and the restricting of public funerals.

Tribute to Dr. Vieira de Carvalho.—The *Annuaire Paulistas de Medicina e Cirurgia* of São Paulo, Brazil, describes the ceremonies which have been organized by the Santa Casa in honor of the completion of thirty years as director of that public hospital by Dr. Arnaldo Vieira de Carvalho, professor of forensic medicine in the law school there and one of the founders and organizers of the Faculdade de Medicina e Cirurgia. The faculty will present him with a bronze bust at the public meeting planned at the Theatro Municipal, where a gold medal and a parchment describing his record as physician, administrator and citizen will also be presented. Representatives from scientific institutions in other states have announced their intention to attend as well as numbers outside of scientific circles.

GENERAL

Personal.—Drs. William J. Mayo, Rochester, Minn., and Franklin H. Martin, Chicago, who have been touring South America in the interests of a possible Pan-American College of Surgeons, started for home from Santiago, Chile, February 14. In the course of their tour they have visited Buenos Aires, Montevideo and Valparaiso, Chile.

Delegates to World Red Cross Meeting.—The American Red Cross has announced the appointment of the following delegates to the first meeting of the general council of the League of Red Cross Societies at Geneva, Switzerland: Willoughby G. Walling, Chicago; Otis H. Cutler, New York; Mrs. William K. Draper, New York; Samuel Mather, Cleveland, and Eliot Wadsworth, Boston. Mr. Henry P. Davidson, chairman of the board of governors of the league, will accompany the delegation. The council will open in Geneva, March 2, and will continue in session one week. Twenty-four powers have been invited to send delegates from their national Red Cross societies.

Bill to Suppress Bubonic Plague.—To continue the work for suppression and control of bubonic plague in New Orleans, Senator Ransdell of Louisiana has presented to the Senate an amendment to the deficiency bill, appropriating \$250,000 for the immediate use of the Public Health Service. This is in accordance with the recent request of the Public Health Service, which has no available funds at the present time to suppress the bubonic plague and similar epidemic diseases. The Clearing House Association of New Orleans is cooperating with the Public Health Service and has agreed to lend the New Orleans Dock Board \$500,000 to finance the operations of local authorities in rat-proofing operations on the docks.

Air Service Medical Association.—Medical officers formerly or at present connected with the air service of the Army have organized the Air Service Medical Association of the United States and have elected the following officers: president, Dr. John A. McReynolds, Dallas, Texas; vice presidents, Col. Theodore C. Lyster, New York City; Col. Eugene R. Lewis, Dubuque, Iowa; Col. Isaac H. Jones, Philadelphia; Col. William H. Wilmer, Washington, D. C., and Col. Albert E. Truby, Washington, D. C.; secretary, Major Vernon K. Earthman, Dallas, Texas, and treasurer, Major Robert S. McCombs, Philadelphia. The next annual meeting of the association will be held in the St. Charles Hotel, New Orleans, April 26.

Resolution Regarding Dr. Osler.—At the meeting of the executive committee of the Federation of American Societies for Experimental Biology in Cincinnati, Dec. 30, 1919, a minute was drafted, stating:

In the death of Dr. Osler, the medical profession has suffered an immeasurable loss. Belonging to no cult, or age, or clime, . . . he was master of the art of medicine in its purest form. . . . As a teacher, he was again master, painting with broad strokes pictures of disease never to be forgotten by the student. An investigator and an inspirer of investigation, a worthy counsellor of brother physicians, a delver in the history of medicine, and an ornament to its letters; and withal so human and of such rare personal charm as to be beloved of all who came in contact with him. Such was the man we mourn. We grieve not only at the loss of leader and friend, but also that death overtook him in the very shadow of the great conflict which brought him so great personal loss and sorrow and robbed him of the mellow years which were so fully his due.

Incidence of Influenza.—The U. S. Public Health Service reports the incidence of influenza for the month of January as being excessive. In thirty-one states which have sent reports, there were over 120,000 cases. The mildness of the disease is generally commented on, and it is believed that many physicians are not reporting mild cases of influenza. Mortality reports from large cities indicate that from May, 1919, to January, 1920, the death rates from influenza and pneumonia were "quite generally below the general average." With the week ending January 17, which marked the beginning of the influenza epidemic in Chicago, the death rate from influenza and pneumonia in Chicago increased slightly, but is still not in excess of the average for the season. Similar significant increases have taken place in New York City, Washington, D. C., Milwaukee, Kansas City, Mo., St. Louis, Cleveland, San Francisco, Albany, N. Y., Atlanta, Ga., Baltimore, Cambridge Mass., Columbus, Ohio, Dayton, Ohio, Indianapolis, Jersey City, N. J., Louisville, Ky., Minneapolis, Newark, N. J., New Haven, Conn., Philadelphia, Pittsburgh, Richmond, Va., St. Paul, Syracuse, N. Y., and Toledo, Ohio.

Regulations for Prescribing Liquors

A circular issued by the Commissioner of Internal Revenue gives explicit directions regarding Form 1403, prescription blanks for practicing physicians who have secured permits to prescribe liquor. As stated in the abstract of Internal Revenue Regulations 60 (THE JOURNAL, Jan. 31, 1920, p. 342), it is first necessary for practicing physicians to secure a permit to prescribe. Application for such a permit must be made on Form 1404, in triplicate, sworn to before a notary public. These blanks can be secured from the federal prohibition director of the state or from the collector of internal revenue of the district in which the physician making application is located. Permits will be issued only to physicians legally qualified to practice under the laws of the state. The three copies when filled out are returned to the federal prohibition director. After receiving a permit to prescribe, the physician is then supplied with Form 1403 on which prescriptions for alcohol and alcoholic liquors must be made out. These prescription blanks are furnished in books of 100 blanks each. A sample blank is reproduced in the adjoining column. The books are serially numbered, and each prescription blank in each book is also serially numbered, with stubs attached. Books must be returned to the director when the prescription blanks have all been used, or sooner if ordered by the director or the Commissioner of Internal Revenue. All unused, mutilated or defaced blanks must be returned with the books.

The state directors and the district collectors of internal revenue by whom these prescription books will be issued are directed to keep a record of the books issued to each physician. Prescription books can be secured by physicians only after they have made application in triplicate on Form 1404 for a permit to prescribe and after the permit has been issued on Form 1405. No bond is required for such a permit. A register is also issued to each physician in which must be recorded all prescriptions written for alcohol or liquors.

Instructions regarding the administration of liquors in accordance with the regulations are explicit. They read as follows:

"Regulations No. 60 provide that distilled spirits, wines and alcoholic medicinal preparations may be administered by physicians to their patients for medicinal purposes in cases where the use of such liquor is believed necessary to afford relief of some known ailment, and delay in procuring the same through a retail pharmacist upon a prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may make application on Form 1404 for permit for this purpose, and if approved a permit will be issued by the commissioner to the physician to use the liquor in the course of his practice, and he may obtain as much as six (6) quarts of liquor during any calendar year, to be administered as stated above, but he may not sell or furnish the same to such persons or to any other persons." Permits to prescribe may be issued by state prohibition directors, but permits to physicians to use liquor for administration to their patients must be issued by the Federal Prohibition Commissioner.

"Physicians are not permitted to write prescriptions for liquor for their own use, and the law provides that not more than a pint of spirituous liquor to be taken internally shall be prescribed for use by the same person within any period of ten days, and no prescription shall be filled more than once."

Druggists qualified to sell medicinal liquors are notified that all prescriptions for medicinal liquor must be on Form 1403 except that in any case where a physician holding a permit to prescribe liquor is not in possession of such a form due to any justifiable reason and where delay in procuring this form might result in loss of life, aggravation of the illness or intense suffering, he may prescribe intoxicating liquor on a form other than Form 1403 provided such prescription contains all of the information called for on Form 1403 and a record of the prescription is made.

Book No. 22414 Blank No. 1 Book No. 22414 Blank No. 1

PRESCRIPTION STUB—NATIONAL PROHIBITION ACT

PRESCRIPTION BLANK—NATIONAL PROHIBITION ACT

THIS STUB MUST BE LEGIBLE

For _____, 192_____,
(Date)

(Give full name of patient)

(His street and No.)

(City)

(State)

(Ailment for which prescribed)

(Kind and quantity of liquor prescribed)

(Directions for administration)
Signed _____, M. D.,
(Sign full name)

(Street and No.)

(City)

(State)
Permit No. _____
The information called for above must be clearly and legibly written. See instructions in Record Book

Permit No. _____, 192_____,
(Date)

(Give full name of patient)

(His street and No.)

(City)

(State)
R
FOR USE OF PHARMACIST ONLY
Canceled _____, (Date delivered)

(Name as on permit)

(Street and No.)

(City)

(State)
Signed _____, M. D.,
(Sign full name)

(Street and No.)

(City)

(State)
Permit No. _____
c2-9422 THIS PRESCRIPTION MUST NOT BE REFILLED See Regulations for penalties imposed

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY, RELIEVED FROM ACTIVE DUTY

ILLINOIS
Chicago—Benjamin, H. W.

MICHIGAN
Detroit—Marsh, A. R.

NEW YORK
Brooklyn—Schneider, S.
New York—Burk, S. B.
Goldberg, R. M.
TENNESSEE
Flatwood—Sharp, T. H.

Disease Conditions in the Army

For the week ending February 6, it is reported that influenza continues at many of the large camps and stations, principally among the eastern and southern states. The number of new cases of pneumonia for that week was double the number reported for the previous week. Admission and noneffective rates showed a slight decline. There was a marked decline in the number of new cases of influenza, measles and pneumonia occurring among the American forces in Germany. The incidence of pneumonia in the camps in the United States is about one tenth of that accompanying influenza at the height of the 1918 epidemic. The mortality percentage was also much lower.

Foreign Correspondence

PARIS

Jan. 15, 1920.

The Attitude of French Societies of Learning Toward German Savants

Notwithstanding the fact that the treaty of peace has gone into effect, there are as yet no indications that relations between French and German men of science are about to be resumed. It will be recalled that it was the attitude of the ninety-three signatories of the all too famous manifesto of German intellectuals that induced our academies to break with the German savants. Before the war, Germany had, to a certain extent, reserved to herself the monopoly of treatises on natural science, and France saw fit to buy and use them, but does not propose to do so longer. The Sociétés françaises de sciences naturelles have recently formed a federation for the purpose of combating German enterprise in this field. The Sociétés françaises de chimie have also formed a federation with the same object in view.

It is interesting to note that the attitude of German men of learning during the Franco-Prussian War of 1870-1871 was far from being correct, just as was the case in the War of 1914-1918. Dr. Léon Cheinisse has published some extracts from the correspondence of the celebrated German jurist Rudolf von Ihering, who, under date of Aug. 23, 1870, wrote:

"Happy is the man who is permitted to play a part in this towering flight of our people! . . . Never before in the history of any people has there been such a glorious epoch. . . . It is like the German tale of Cinderella, who was suddenly raised to the rank of princess. Thanks be to these dogs of Frenchmen for having, up to the present time, treated our people as Cinderella was treated. The application of the story has thus been brought home to their conscience, and the blows have fallen on their own shoulders. The humiliation and weakness of France must ever remind Frenchmen of our cause for gratitude. . . ."

It may perhaps be assumed that the arrogance of the German mentality, which still persists in spite of everything, and of which THE JOURNAL recently cited a typical example (THE JOURNAL, Dec. 20, 1919, p. 1889), will be no slight obstacle to the resumption of normal relations with the scientists and scholars of the empires of "Mitteleuropa."

Child Welfare in the United States

Dr. P. F. Armand-Delille, who was sent last year on a mission to the United States, recently reported to the Académie des sciences morales et politiques his impressions of the child welfare movement in that country. In his report he brought out the fact that in the United States the care of children's health has been thoroughly organized, and commended the system of visiting nurses; the consultations held in the homes with mothers and prospective mothers, the

teaching of hygienic rules, and the care of the child who may be ill. He also emphasized the value of the American federation of charity organizations, which made possible a better utilization of charity funds from public and private sources. He found that the heartiest cooperation prevailed, which resulted in the greatest benefit to public health in general.

This visit of Dr. Armand-Delille furnishes an additional example of the salutary influence that the United States is destined to exert on the development of public hygiene in France. In a previous letter (THE JOURNAL, Jan. 31, 1920, p. 338) I mentioned other evidences of such influence.

Antipyrin and Anaphylaxis

Dr. Fernand Vidal, professor of clinical medicine at the Faculté de médecine de Paris, in collaboration with Dr. Pasteur Vallery-Radot, has made an interesting report to the Académie des Sciences on an anaphylactic state produced by a nonalbuminoid substance—antipyrin. A woman, aged 24, had formed the habit of taking antipyrin every month for the relief of headache. During a period of nine years no untoward effects were produced, but at the end of this period anaphylaxis appeared, together with an intense pruritus at the level of the chin and lips, which became red, swollen and painful. This anaphylactic state was so persistent that it continued for seven years after the patient had completely abstained from the drug. Vidal and Pasteur Vallery-Radot have been investigating for the purpose of discovering how small a dose must be to exclude all possibility of accident, and they find that it lies between 0.0001 and 0.0002 gm. Patients to whom these minute doses are administered for a period of two months are desensitized completely and definitively and they can take antipyrin tablets without feeling the slightest discomfort.

Vidal remarked that analogous conditions doubtless existed for a number of substances that are ingested and inhaled. He mentioned particularly the case of a merchant who, after having sold mutton for more than thirty-seven years, was no longer able to handle mutton without having an attack of asthma. Our temperamental nature may, then, be continually modified, by the process of sensitization and desensitization; by anaphylactic shocks that take place totally unknown to us. It seems that asthma, migraine, and certain other morbid states with which man is affected during certain periods of life, are obedient to the laws of anaphylaxis.

Medical Relations with Poland

At the instance of Professor Letulle, the first meeting of the Comité médical franco-polonais was held recently at the Faculté de médecine de Paris. This committee, which was presided over by Professor Roger, dean of the Faculté de médecine, counts among its members a number of physicians of Polish extraction; for example, Dr. Babinski, hospital physician of Paris; Dr. Danysz of the Institut Pasteur, and Dr. Ockinzyc, hospital surgeon of Paris. A similar committee has been appointed in Warsaw, and the hope is expressed that before long, by means of journeys in the interest of science and by courses of lectures, scientific relations between Poland and France may be restored.

Vehicles for the Use of Cripples

Marshal Pétain has taken steps to promote an exhibit of vehicles for the use of cripples, which will be held in the Grand-Palais.

LONDON

Jan. 24, 1920.

A New Surgical Organization

The Association of Surgeons of Great Britain and Ireland, at the inaugural meeting of which Sir Rickman J. Godlee presided, owes its inception to the suggestion of Sir Berkeley Moynihan in 1914. England was then almost alone in having no representative society for the adequate discussion of surgical topics. At a meeting held at the Royal College of Surgeons, May 26, 1914, a committee was appointed to draw up rules and to circularize the members of the surgical staffs of hospitals connected with teaching schools. The war interrupted the project, and after more than five years, organization of the association has been effected. Two main principles have been kept in view: First, the active membership of the association will be limited both in respect to members and to age. Second, the discussions will be free, in every meaning of the word and the expression of thought will be untrammelled by the dread that what might be said confidentially to a friend will be repeated in a garbled form from the

ousetops. No reports will be sent to the journals or newspapers, but the fellows will be at liberty to publish their communications when and where they choose, appropriately in the *British Journal of Surgery*. Experience of other countries shows the advantage of holding meetings at different centers, but it is proposed that at least every third meeting shall be held in London. It is hoped that stagnation in the directorate will be avoided by the annual change of resident and one third of the ordinary members of council, and continuity will be secured by the more or less permanent tenure of office by the honorary treasurer and secretary.

Miners' Nystagmus

At a meeting of the North Staffordshire Institute of Mining Engineers, Dr. T. L. Llewellyn, medical officer to the collieries of North Staffordshire, declared that deficiency of illumination is the dominating factor in the causation of miners' nystagmus, and, in his opinion, so important that all other factors become insignificant. In the prevention of the disease three main considerations must be taken into account: 1. Nystagmus is a disease of gradual onset; the average number of years of underground life before failure of sight is twenty-five. 2. The illumination in open-light pits is five times that in safety-light pits. 3. Cases of nystagmus, although uncommon, do occur in open-light pits.

The True Nature of Multiple Exostoses

At a meeting of the Medical Society of London, Prof. Arthur Keith read an important paper on the true nature of multiple exostoses. From the study of the roentgen-ray records of four cases of multiple exostoses he had come to the conclusion that the disease should be removed from the category of tumors and placed among the disorders of growth under the name suggested by Morley Roberts—diaphysial aclasis. The exostoses which attracted the attention of the clinician are merely secondary results which mask one of the most remarkable disorders of growth. In one case the patient was a private, aged 20, in a labor battalion who was diagnosed in the Third Canadian General Hospital as suffering from multiple exostoses. The lower ends of the femurs and the upper and lower ends of the shafts of the tibiae presented an arrest of bone development, which was to be anticipated if John Hunter's teaching on the growth of bones was correct. Hunter was the first to perceive that the shaft of the long bones grew by a double process: In the first process new bone is laid at the extremities of the shaft in the diaphysial lines; in the second, which Hunter named the "modeling process" the cancellous bone laid down is rebuilt, trimmed and gradually converted into an architectural part of the shaft. In diaphysial aclasis the modeling process is arrested; hence between the properly formed part of the shaft and the epiphysial end there is interposed an irregular cylinder of imperfectly modeled bone, on the surface of which there are several outgrowths. Further investigation of the case showed that the diaphysial ends of all the bones of the body manifested a similar disturbance of growth, the disturbance being greatest at the lines where growth is most vigorous and prolonged. A clue to the true nature of the disease is given by noticing its incidence on the skeleton. Bones formed in membrane or in cartilage are not affected. It is only where the two processes—membrane formation and cartilage formation—come into juxtaposition that this disorder of growth occurred. Hence it is most marked at the growing ends of diaphyses of long bones, especially those where growth is greatest. The proximal end of the humerus and the distal ends of the radius and ulna show a much greater disturbance of growth than the shafts which end at the elbow joint. In the lower extremity, growth is greatest at the diaphysial ends directed toward the knee, and there the disturbance is greatest; but as there is also considerable growth at the proximal end of the shaft of the femur and at the distal ends of the tibia and fibula, these parts also exhibit ample evidence of the disease. At these sites two different kinds of bone formation are in progress. As bone is laid down within the growth disk (epiphysial line) in cartilage a covering of fibroblastic bone is being deposited by the growing margin of the overlying periosteum. We have so concentrated our attention on the process of ossification, which takes place in the cartilaginous growth disk, that we have left out of sight the equally important processes which go in the ferrule of periosteum which surrounds the growth disk. Consequently we are not prepared to encounter a dislocation in the harmony with which these two processes ought to proceed. In achondroplasia the arrest of the growth is a partial cessation of the growth process which goes on within the cartilaginous disk. In

diaphysial aclasis the arrest lies in the growing edge of the periosteal ferrule. Hence large areas of cartilage-formed bone are left exposed. This arrest of periosteal formation is only temporary. The modeling process which is attended by the deposition of periosteal bone goes on for years after all growth in length has ceased. This conception of multiple exostoses is not new. Hunter emphasized its constitutional nature. Paget recognized it as an ossific diathesis due to some morbid condition of the blood. Several German writers have recognized it as a disturbance of growth.

Nephritis and Military Service

The discovery during the war of "trench nephritis" has led the Medical Research Committee to institute an inquiry into the condition of the soldier's kidney. The main work devolved on Capt. Hugh MacLean, whose report involves an examination under war conditions of 50,000 men. He began by attempting to find out whether there was a tendency during training for symptoms of kidney trouble to develop in ordinary recruits. He found that only 2 per cent. gave any indication of kidney mischief. He concluded that no injurious effects are produced on the kidney by any of the conditions associated with training for active service. The soldier during training does not appear to be more liable to deleterious kidney effects than is the civilian in ordinary life. No relation between albuminuria and occupation was found. Long service exercised no ill effects on the incidence. It was thus evident that trench nephritis was not a condition carried over from civil life. Further work confirmed this view. Conditions such as length of service, previous illness, age and occupation seemed to play no part in its etiology. Many of the cases developed in men who had been in the front area only a short time. Other factors—diet, infection, water supply and so on—were excluded. By elimination, the conclusion was reached that the most probable cause of trench nephritis is infection by means of body vermin, probably lice. The mortality from the disease was low in the first instance; but relapses occurred, and some of the cases became chronic. They were found to fall into the same groups as ordinary Bright's disease—interstitial and parenchymatous.

Piteous State of Wounded Serbians—Serbian Surgeons to Be Trained in England

Sir John Lynn-Thomas, the orthopedic surgeon of Cardiff, who returned recently from Serbia, paints a gloomy picture of the state of the wounded and disabled in that country. The land is filled with cripples, many of whom could be cured or improved by modern orthopedic methods. The contrast between what has been accomplished in England by Sir Robert Jones and his co-workers and the state of the broken soldiers of our ally is piteous. These men are without the simplest appliances, and the country lacks surgeons with the requisite knowledge of the new methods. It is felt by the Serbian Red Cross Society in Great Britain that the proper method to help these soldiers is to invite Serbian surgeons to come to this country to study British orthopedics under our most distinguished men. This invitation has been sent, and a favorable reply is expected.

RIO DE JANEIRO

Jan. 10, 1920.

Bubonic Plague

In the shipments of alfalfa and wheat imported from Buenos Aires, rats infected with bubonic plague were discovered. Shortly after, several cases of plague occurred among the men working on the docks at Rio de Janeiro. There were ten cases reported, but no deaths.

Institute of Medical Research

Dr. Rocha Lima, formerly of the Instituto de Manguinhos, Rio de Janeiro, and lately professor at the university and chief of the section on pathologic anatomy in the institute of tropical diseases in Hamburg, has been offered the position of director for the Butantan Institute for Medical Research. He is expected in Rio at the end of January, when he will give a definite answer.

Medical School Changes

Dr. Alfredo de Andrade has been promoted to professor of analytic chemistry, and Dr. Adelino Pinto has been appointed in his place.

Federal Department of Public Health.

The law creating the federal department of public health was approved by President Pessoa, January 20. As men-

tioned in a former letter, the creation of a ministry of public health did not meet the approval of congress. There will be three boards under the supervision of the department, namely, a board of health for Rio de Janeiro, a board of rural sanitation, and a board of maritime and fluvial prophylaxis. Besides these, there will be sections dealing with sanitary statistics; sanitary engineering; the supervision of drains; the prevention of leprosy and venereal diseases; the supervision of the practice of medicine, pharmacy, dentistry and obstetrics, and hospitals for contagious diseases and child welfare. The federal government takes charge of meat and food inspection and of all the functions of the municipal health service.

Under the law, a supreme council of hygiene and public health is appointed. The following officials are members of the board: the president of the department of health, the directors of the above mentioned divisions, the professor of sanitary engineering in the polytechnic school, the surgeon-general of the army, the chief of the navy medical corps, and the government legal adviser. The exclusion from this board of the professor of hygiene and of the dean of the medical school, as well as the president of the Academia de Medicina, was not favorably received in medical circles.

The cost of rural prophylaxis and sanitation of the interior will be met by a special tax on alcoholic drinks, by the income from the different laboratories pertaining to the department of the interior, 15 per cent. of the revenue of gambling houses, clubs and casinos at health resorts, and a stamp tax of from 20 to 200 reis on all tubes of serums, vaccines, opotherapeutic products and on all drugs either foreign or domestic. Public opinion is not in favor of licensed gambling.

Infectious Disease in Brazil

In an address to medical graduates, Dr. Afranio Peixoto protested vehemently against the erroneous impression that Brazil is one great hospital. Many prominent physicians seem intent to convince the public that there are scarcely any healthy persons in the population of 25,000,000, and that those who are lucky enough to escape from malaria or hookworm disease are infected with the Brazilian trypanosomiasis. Just because Chagas saw some cases of the disease which bears his name in Lassance (state of Minas), one physician has gone to the extreme of asserting that 15 per cent. of the population is infected with *Trypanosoma cruzi*.

Election of Officers

At a meeting of the Sociedade de Medicina e Cirurgia, December 30, the following officers were chosen: president, Prof. Fernando Magalhães; vice presidents, Dr. Julio Monteiro and Dr. Plinio Marques; secretary-general, Dr. Leonel Gonzaga; secretaries, Dr. Edilberto Campos, Dr. Arnaldo de Moraes and Dr. Theophilo de Almeida; speaker, Dr. Octavio Ayres; librarian, Dr. Catao; custodian of the museum, Dr. Del Vecchio, and editor of the annals, Dr. Guarany Goulart.

Marriages

EUSTACE HAROLD PRESCOTT, Lieut., M. C., U. S. Navy, Edgefield, S. C., to Miss Alpha Hammond of Edgefield County, S. C., at Augusta, Ga., February 1.

BENJAMIN FRANKLIN DAVIS, Chicago, to Miss Marie Lucile Brickson of Stoughton, Wis., February 7.

JAMES SYLVESTER ANTLE, Utica, Ill., to Miss Margaret Walter of LaSalle, Ill., in Chicago, January 17.

ALBERT WARD McCALLY, Dayton, Ohio, to Miss Edna Fiegenbaum of Edwardsville, Ill., December 25.

CHARLES LYNDON OUTLAND, Tarboro, N. C., to Miss Alice Louise Sadler of Richmond, Va., January 21.

KINTON DORION, Lawrence, Mass., to Miss Angelina Tessier of New Bedford, Mass., January 26.

J. J. FITZGERALD, Granite City, Ill., to Miss Georgia Coudy of Louisville, Ky., December 3.

PAUL WESLEY BEST, Atlanta, Ga., to Miss Louise Cotton of Waco, Texas, January 21.

CHARLES A. WADE to Miss Florence Marie McGeehan, both of Chicago, February 8.

LYMAN OVERSHINER, Indianapolis, to Miss Ella Ingles, in Indianapolis, December 13.

Deaths

Correction.—The obituary notice of Dr. William J. Humphrey, Union City, Pa., which appeared in THE JOURNAL of Dec. 27, 1919, was incorrect. Dr. Humphrey informs us that he is alive and well. The source of information was a notice which appeared in an Eastern medical journal.

Melvin George Overlock, Worcester, Mass.; Baltimore Medical College, 1896; aged 54; a member of the Massachusetts Medical Society; a specialist in tuberculosis, and instrumental in securing legislation requiring the maintenance of tuberculosis hospitals in cities and towns of Massachusetts; state medical health inspector; a trustee of the Worcester City Hospital since 1900; died in that institution, January 30, from diabetes.

Oliver Thompson Hyde ☉ Albuquerque, N. M.; College of Physicians and Surgeons in the City of New York, 1901; aged 44; a specialist in tuberculosis, and for six years director of the St. Joseph Sanatorium, Albuquerque; for several years resident director of a sanatorium in Silver City, N. M.; formerly a member of the faculty of Drake University, Des Moines, Iowa; died, February 2, from tuberculosis.

Royal A. Gove, Tacoma, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 63; a member of the Washington State Medical Association; for twelve years secretary of the Pierce County Medical Association; for six years a member of the State Board of Medical Examiners, and for two years its chairman; from 1892 to 1896 a member of the city council; died, January 21.

Francis Pollock Ball ☉ Lock Haven, Pa.; University of Pennsylvania, Philadelphia, 1877; aged 63; once president of the Medical Society of the State of Pennsylvania; who was one of the guests of honor at a banquet given by the Clinton County Medical Society in 1918; chief surgeon of the Lock Haven Hospital; died in Williamsport, Pa., January 31, from angina pectoris.

William Henry Cook, Coffeen, Ill.; Washington University, St. Louis, 1867; aged 85; a member of the Illinois State Medical Society; a charter member of the District Medical Society and for two years its secretary; one of the organizers of the Montgomery County Medical Society, and at one time its president; died, January 28, from senile debility.

James H. Shorter ☉ Macon, Ga.; Long Island College Hospital, Brooklyn, 1875; aged 69; oculist and aurist to the Macon Hospital and to the Southern Railway; a member of the American Academy of Ophthalmology and Oto-Laryngology, and of the American Laryngological, Rhinological and Otological Society; died, February 2.

Francis Torrens Stewart ☉ Philadelphia; Jefferson Medical College, 1896; aged 45; professor of clinical surgery in his alma mater; since 1910 surgeon to the Jefferson and Germantown hospitals, and for twenty-five years a member of the surgical staff of the Pennsylvania Hospital; author of a manual on surgery; died, February 4, from uremia.

Claude Dewes Hamilton, Canton, Ohio; College of Physicians and Surgeons, Baltimore, 1913; aged 31; a member of the Ohio State Medical Association; who served as captain, M. R. C., U. S. Army, and was discharged, April 4, 1919; died in Phoenix, Ariz., January 30, from pulmonary tuberculosis.

Fred Grey Benton ☉ Major, M. C., U. S. Army; University of Syracuse, N. Y., 1912; aged 33; who entered the Medical Reserve Corps, June 29, 1916; was graduated from the Army Medical School, June 10, 1917, and promoted to captain and major, Aug 3, 1918; died at Fort Aurora, January 18.

Lyle Gunn Thornton ☉ Lieut., M. C., U. S. Army, Westpoint, Texas; Chattanooga (Tenn.) Medical College, 1897; aged 45; physician of Colorado County, Texas, and assistant city physician of Westpoint; died at Fort Sam Houston, San Antonio, Texas, January 15, from valvular heart disease.

Ridgeley Brown Warfield ☉ Baltimore; University of Maryland, Baltimore, 1884; aged 56; professor of surgery in his alma mater; formerly associate professor of anatomy in Baltimore Medical College; chief surgeon of the Maryland General Hospital; died, February 4, from heart disease.

Harry A. Medernach, Portland, Ore.; Chicago College of Medicine and Surgery, 1904; aged 42; who served during the war as a secretary of the Knights of Columbus, at Camps Lewis, Ballard, and Vancouver, Wash., died, January 28.

☉ Indicates "Fellow" of the American Medical Association.

Richard Cooke Harley, Newark, N. J.; George Washington University Medical School, Washington, D. C., 1904; aged 41; a member of the Medical and Chirurgical Faculty of Maryland; formerly health officer of Prince Georges County, Md.; died, February 4, from pneumonia.

Henry Brown Conrad, South Bend, Ind.; Johns Hopkins University, Baltimore, 1916; aged 29; who resigned from an internship in Johns Hopkins Hospital to enter the Navy, and was relieved from active duty with the U. S. N. R. F., Nov. 26, 1919; died, January 29, from pneumonia.

Crandall Loughery, Montreal; McGill University, Montreal, 1918; aged 28; who served with the Canadian Army Medical Corps in France in 1918 and 1919; a member of the staff of the Montreal General Hospital; died in that institution, Oct. 25, 1919, from bronchopneumonia.

Peter Winston, Farmville, Va.; University of the City of New York, 1860; aged 83; a member of the Medical Society of Virginia; surgeon in the Confederate Service during the Civil War; for fifteen years physician to the State Normal School; died, about January 30.

Sally Robinson Creighton Best, New York City; Cornell University, New York City, 1899; aged 50; a member of the executive committee of the American Woman's Hospitals, and active during the war in the censorship of drugs for the government; died, February 6.

Frank C. Hershey, Carmel, Ind.; Medical College of Indiana, Indianapolis, 1894; aged 53; a member of the Indiana State Medical Association; health officer of Hamilton County; died, February 4, from septicemia, due to a slight scratch of the hand.

John W. Starr, Pocahontas, Iowa (license, Iowa, examination, 1889); aged 61; a member of the Iowa State Medical Society; once secretary and treasurer of the Pocahontas County Medical Society, and city physician; died, January 17, from angina pectoris.

William Francis Gillim, Chicago; University of Louisville, Ky., 1871; aged 73; a member of the Kentucky State Medical Association; for many years a practitioner of Owensboro; while returning to his old home in Owensboro, February 4, died at Evansville, Ind.

Boyer Smith Kofford, Youngstown, Ohio; University of Buffalo, N. Y., 1917; aged 25; lieutenant, M. C., U. S. Army, with service overseas and discharged, Feb. 15, 1919; a member of the staff of the Youngstown Hospital; died, January 27, from pneumonia.

Frank Boutelle Fuller ♂ Pawtucket, R. I.; Harvard University Medical School, 1878; aged 66; acting superintendent of health of Pawtucket; for several years medical examiner (coroner) for the Pawtucket district; died, January 23, from heart disease.

Beauregard Ross Merritt, Fancy Farm, Ky.; Marion-Sims Medical College, St. Louis, 1891; aged 50; a member of the Kentucky State Medical Association; one of the owners of the Dawson Springs Sanitarium; died in that institution, January 24.

Marvin William Duckwall, Dayton, Ohio; Miami Medical College, Cincinnati, 1902; aged 40; a member of the Ohio State Medical Association; for many years a member of the board of St. Elizabeth's Hospital; died, February 1, from tuberculosis.

Milton Harlan Cloud ♂ Masontown, Pa.; Miami Medical College, Cincinnati, 1886; aged 62; a director and for several years vice president of the Masontown Bank; vice president of the Masontown Glass Company; died, January 27, from meningitis.

Robert Bruce Duncan, Petaluma, Calif.; Missouri Medical College, St. Louis, 1873; aged 73; coroner and public administrator of Colusa County in 1888; twice health officer of Petaluma; died in the Petaluma Hospital, January 3.

Joseph P. Ralston, Jr. ♂ Houston, Texas; University of Texas, Galveston, 1896; aged 49; was crushed between the elevator and the wall of the elevator shaft in the Kress Building, Houston, February 2, and instantly killed.

Raymond Jack Hauser ♂ Lieut., M. C., U. S. Army, Danville, Pa.; University of Pennsylvania, Philadelphia, 1910; aged 33; on duty at Camp Grant, Rockford, Ill., died, January 18, from pneumonia complicating influenza.

Alexander John Macaulay, Brockville, Ont.; Trinity Medical College, Toronto, 1888; aged 55; medical officer of health of Brockville; president of the Ontario Medical Health Officers' Association in 1906; died, October 27.

William Alexander Molson, Montreal; McGill University, Montreal, 1874; M.R.C.S. (Eng.), 1875; coeditor of the *Canada Medical and Surgical Journal* from 1879 to 1882; died, January 5, from cardiorenal disease.

Richard F. Boonstra, Detroit; University of Michigan, Ann Arbor, 1913; aged 31; lieutenant, M. C., U. S. Army; on duty with the air service and discharged, March 4, 1919; died, January 30, from pneumonia.

Rollin Alanson Curtiss, Stratford, Conn.; University of the City of New York, 1893; aged 53; a member of the Connecticut State Medical Society; died, January 28, from cerebral hemorrhage.

Logan M. Thompson, Atlanta, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 61; a member of the Missouri State Medical Association; died in Macon, Mo., January 19.

Charles Henry Waters, Dawsonville, Md.; University of Maryland, Baltimore, 1871; aged 70; for many years pastor of the Trinity Baptist Church, near Dawsonville, Md.; died, January 26.

Morgan Shell Evans, New Orleans; Tulane University, New Orleans, 1917; aged 26; an intern in the State Charity Hospital, Natchez, Miss.; died, January 21, from tubercular meningitis.

William Harrison Wilson ♂ Johnson City, N. Y.; Bellevue Hospital Medical College, 1888; aged 56; physician and surgeon to the Binghamton City Hospital; died, about January 23.

J. Sion Smith, Fort Wayne, Ind.; Fort Wayne (Ind.) College of Medicine, 1891; aged 71; superintendent of several branches of the Bass foundries, Fort Wayne; died, January 24.

Jesus Monagas, Mayaguez, P. R.; University of Barcelona, Spain, 1883; aged 58; a member of the Porto Rico medical Association; died, January 27, from cirrhosis of the liver.

Edwin T. Myers, Netawaka, Kan.; Western Reserve University, Cleveland, 1876; aged 63; a member of the Kansas Medical Society; died, January 23, from chronic nephritis.

William H. Clarkson, Blair, Okla.; Memphis (Tenn.) Hospital Medical College, 1889; aged 58; a member of the Oklahoma State Medical Association; died, December 13.

Otto James Blessin, Galesburg, Ill.; Hahnemann Medical College, Chicago, 1901; aged 40; captain, M. R. C., U. S. Army, and discharged, Jan. 18, 1919; died, January 29.

James Emmett Vaughan ♂ Lynchburg, Va.; Lincoln Memorial University, Knoxville, Tenn., 1893; aged 60; died, Dec. 18, 1919, from chronic interstitial nephritis.

William A. Paschall, Franklin, Tenn.; Vanderbilt University, Nashville, Tenn., 1881; aged 60; died at the Woman's Hospital, Nashville, January 31, from pneumonia.

John Alexander Landis, Oklahoma City; University of Tennessee, Nashville, 1860; aged 82; died at the home of his daughter in Brownsboro, Texas, January 24.

Joseph William Martin, DuBois, Neb.; University of Nebraska, Omaha, 1903; aged 52; died at the home of his mother in Pawnee City, Neb., January 23.

Charles Ash Bower ♂ Mitchell, S. D.; Hahnemann Medical College, Chicago, 1900; aged 44; was drowned while bathing at Lake Worth, Fla., January 21.

Caleb F. Elkins, Liege, Mo.; American Medical College, Eclectic, St. Louis, 1901; mayor of Liege and health officer of Montgomery County; died, January 26.

John F. Shaw, Wilkes-Barre Pa.; Medico-Chirurgical College of Philadelphia 1895; aged 66; also a druggist; died, February 1, from cerebral hemorrhage.

William Gwathmey, Beulahville, Va.; Medical College of Virginia, Richmond, 1898; aged 40; a member of the Medical Society of Virginia; died, January 5.

Edward Hills Lake, San Francisco; St. Louis College of Physicians and Surgeons, 1895; while on his return from Australia, died at sea, January 28.

Patrick James Hughes, Lawrence, Mass.; University and Bellevue Hospital College, 1907; aged 41; died, January 26, from pulmonary tuberculosis.

Robert G. Langsdale, Middletown, Ohio; Medical College of Ohio, Cincinnati, 1881; aged 71; died in the Middletown City Hospital, January 26.

H. Moses Brooks, Olivebranch, N. C.; University of Maryland, Baltimore, 1879; aged 64; died, January 21, in a hospital in Charlotte, N. C.

John M. Grant ♂ St. Louis; Missouri Medical College, St. Louis, 1889; aged 55; a specialist in surgery; died, January 29, from pneumonia.

A. Malen Spangler ♂ Pageton, W. Va.; College of Physicians and Surgeons, Baltimore, 1892; aged 53; died, January 18, from diabetes.

Joseph L. Anderson, Tarentum, Pa.; College of Physicians and Surgeons, Baltimore, 1883; aged 65; died, January 27, from pneumonia.

James T. Parker, Chauncey, Ga.; Southern Medical College, Atlanta, 1897; aged 44; died in a hospital in Macon, Ga., January 30.

Joel J. Foulon ♂ East St. Louis, Ill.; Missouri Medical College, St. Louis, 1887; aged 57; died, January 23, from heart disease.

John Maynard Gulick, El Paso, Ill.; Northwestern University Medical School, 1891; aged 53; died, January 15, from endocarditis.

Nicholas R. Marshall, Evanston, Ill.; Rush Medical College, 1867; aged 76; a veteran of the Civil War; died, February 3.

Alban Thomas Cuzner, Gilmore, Fla.; College of Physicians in the City of New York, 1864; aged 80; died, January 18.

Edward Martin Cherry, San Francisco; Cooper Medical College, San Francisco, 1899; aged 46; died, about January 30.

Cyrus V. Luke ♂ Woodworth, Ill.; Illinois Medical College, Chicago, 1899; aged 44; died, January 16, from brain tumor.

Joseph Talbot Maclean, New York City; Bellevue Hospital Medical College, 1876; died, January 28, from pneumonia.

John M. Pierce, Rogersville, Tenn. (license, Tennessee, 1889); aged 73; for many years a druggist; died, December 16.

Archibald Gooding Servoss, Havana, Ill.; Jefferson Medical College, 1886; aged 54; died, January 22, from gastric ulcer.

Oliver Frank Harper, Baltimore; Atlanta (Ga.) School of Medicine, 1911; aged 30; also a chemist; died, January 22.

Emory Lanphear, St. Louis; Missouri Medical College, St. Louis, 1881; aged 60; died, in Citrus Park, Fla., February 6.

Philip Gray Sanderson, Detroit; University of Illinois, Chicago, 1899; aged 53; died, January 28, from pneumonia.

Ralph Emerson Buck, Newfield, N. J.; Rush Medical College, 1894; aged 49; died, February 4, from acute gastritis.

James A. Fraser, Lexington, Mich.; University of Vermont, Burlington, 1886; aged 60; died, about January 29.

L. C. Goneke, Springvale, Ga.; Atlanta (Ga.) Medical College, 1884; aged 60; died, January 27, from dysentery.

Frederick Woodhull, Hartney, Man.; Trinity Medical College, Toronto, 1886; aged 56; died in October, 1919.

Walter Westlake Hoare, Walkerville, Ont.; Queens University, Kingston, Ont., 1864; aged 83; died, January 29.

Samuel L. Inman ♂ El Paso, Texas; Marion-Sims College of Medicine, St. Louis, 1897; aged 54; died, recently.

Edmund B. Echlin, Ottawa, Ont.; Queens University, Kingston, Ont., 1891; aged 56; died, Dec. 12, 1919.

Sabritt Scruggs, Rolla, Miss.; Kentucky School of Medicine, Louisville, 1866; aged 80; died, January 27.

William Bilbro Palmer, Audubon, Texas; University of Nashville, Tenn., 1887; aged 70; died, January 21.

D. Luke Gavin, Shubuta, Miss.; Louisville (Ky.) Medical College, 1898; died in Chicora, Miss., January 31.

Frederick Roderick Dew, Weston, W. Va.; Baltimore Medical College, 1905; aged 40; died, January 31.

Daniel Justin McSweeney, Boston; Harvard University Medical School, 1903; died, about January 20.

Renwick W. Bartley, Marion, Ind.; Loyola University, Chicago, 1880; aged 74; died, January 25.

James T. Croney, Lima, Ohio (license, Ohio, years of practice, 1896); aged 75; died, January 21.

Nicholas J. Hopkins, Dunnville, Ont. (license, Ontario, 1869); aged 77; died, Nov. 7, 1919.

P. W. Logan, Knoxville, Tenn.; Jefferson Medical College, 1861; aged 80; died, January 28.

J. C. Barker, Lebanon, Mo. (license, Missouri, 1884); aged 84; died, January 18.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

EUMICTINE

Report of the Council on Pharmacy and Chemistry

The Council has adopted and authorized publication of the report which appears below. This report declares "Eumictine" ineligible for New and Nonofficial Remedies because (1) it conflicts with Rule 10 in that it is unscientific and useless, (2) it conflicts with Rule 6 in that it is sold under unwarranted therapeutic claims, (3) it conflicts with Rule 4 against indirect advertising to the public in that the name "Eumictine" is blown in the bottle for the obvious purpose of bringing the product to the attention of the public when it is prescribed in the original package and (4) because the name is therapeutically suggestive and not in any way descriptive of its composition.

W. A. PUCKNER, Secretary.

Eumictine is a preparation from the laboratory of Maurice Le Prince, Paris, France, and is marketed in this country by George J. Wallau, Inc., New York. It is claimed that the product is "a balsamo-antiseptic preparation composed of Santalol, Salol, and Hexamethylene-Tetramine, in the form of gluten-coated capsules." Nowhere in the advertising are the amounts of the ingredients given. According to the American agent, however, "each capsule is supposed to contain 20 centigrams of Santalol, 5 centigrams of Salol, 5 centigrams of Hexamethylene-Tetramine."

Eumictine is advised "in treating genito-urinary diseases (urethritis, cystitis, prostatitis, pyelitis, etc.)." It is claimed to be "both an antiphlogistic modifying agent, a well-tolerated diuretic" which "may be administered for long periods without ill effects."

The Council declares Eumictine ineligible for New and Nonofficial Remedies because it is exploited in conflict with the following rules:

It is unscientific (Rule 10). Eumictine is composed of hexamethylenamin, salol and santalol in fixed proportions. Hexamethylenamin may serve a useful purpose in some forms of infection of the urinary tract, but neither it nor salol are of any considerable value in gonorrhea. It is now known that the balsamic preparations, formerly so widely used, do not have the curative effects in gonorrhea and associated conditions that used to be ascribed to them. To combine three substances, none of which has any distinct therapeutic value in the conditions for which Eumictine is proposed, does not enhance their value. There is nothing original in the combination used in Eumictine, or in the manner of dispensing it.

It is sold under unwarranted therapeutic claims (Rule 6). These claims are made not only for the components of Eumictine but for the combination itself. Though santalol has certain advantages over the somewhat variable oil of santal and other balsamic resins, it is not true that santalol "does not cause congestion of the renal epithelium" or that it does not "produce exanthema as do copaiba, cubebs, and the ordinary santal oil." It is not true that salol is "devoid of toxicity." Neither is it correct to say that salol "asepticizes and disinfects the bladder, the prostate and the urethra." The claim that hexamethylenamin "is of value when any acute symptoms or tendency to inflammation subsist" is not justified. The claim that hexamethylenamin "renders soluble the uric acid and urates" is also without foundation. The fol-

lowing paragraph is characteristic of the claims made for Eumictine:

"Anti-gonorrhoeic by its Santalol, diuretic, urolytic and analgetic by its hexamethylenetetramin (Urotropin) antiseptic and antipyretic by its Salol, Eumictine represents a real therapeutic advance in the scientific treatment of diseases of the urinary passages."

Instead of being "a real therapeutic advance" in the treatment of diseases of the urinary passages, Eumictine presents one of the complex combinations that have long retarded the scientific treatment of these diseases. Eumictine also conflicts with Rules 4 and 8 of the Council.

Correspondence

NEED OF UNIFORMITY IN SHAPE AND SIZE OF PROFESSIONAL REPRINTS AND ADVERTISED OBJECTS

To the Editor:—There should be uniformity in the size, shape and arrangement of printed data that the physician may wish to preserve, conveniently file and promptly refer to. This should include (a) reprints of papers and (b) advertising data describing objects that deserve preservation and prompt reference.

The object of collectanea is convenience for filing and for reference. I have previously made recommendations to advertisers that they adopt a suitable system whereby descriptive matter, memoranda, etc., could be readily filed. One measure has been extensively adopted, viz., index filing cards of a standard size, 3 by 5, also small, closely printed circulars or descriptive booklets of the same size and containing several pages of outline. The fact is that many physicians now use index filing systems, kept in the drawer of a desk for short case notes, and another for other data. Inquiry and experience teaches me that this custom of filing data is becoming nearly universal, and will become more so in proportion as the material is supplied in filable shape. Meanwhile, all heterogeneous printed stuff in odd sizes and forms is thrown in the scrap, where it deserves to go. Contemplate the millions of money thus wasted. (One comes to doubt gravely the commercial wisdom of many big business bodies.)

Reprints of valuable articles suffer in much the same way. To collect and attempt to arrange them causes suffering, vexation and loss of time to those who wish to preserve and later read them. Surely all editors or managers of medical journals should be as wise, or at least as cooperative, as some manufacturing concerns have now become. This subject is no trifling matter; it is of fundamental significance.

J. MADISON TAYLOR, M.D., Philadelphia.

"VACCINATION WITHOUT SCAR"

To the Editor:—In a recent editorial comment (THE JOURNAL, Jan. 24, 1920, p. 252), reference was made to Major J. R. Goodall's paper on "The Subcutaneous Method of Vaccination," under the caption, "Vaccination Without Scar." The experiment recorded by Goodall in his paper does not give exact information, which is necessary before any conclusions can be drawn. Six thousand individuals were each given, subcutaneously, from one quarter to three quarters of the contents of a capillary tube of vaccine with sufficient water added to make 1 c.c. The local reaction was described as being very similar to that resulting from the injection of typhoid vaccine. The reaction, however, did not appear in the majority of cases till after the second day. This was occasionally delayed till even the tenth day. No reaction was reported in 8 per cent. of the cases. In a few cases the reaction was marked, causing swelling of the elbow, and in some the edema involved the whole arm and hand. Between the seventh and tenth days the local swelling and induration subsided, leaving a hard nodule ill defined, which later became well circumscribed and persisted for

about one month. The general symptoms varied in intensity and did not differ from those of ordinary vaccination. No mention, however, is made of different reactions being observed in the cases of men previously vaccinated, which is regretted. An omission which is most vital to the subject was the revaccination of some of those who had received the vaccine by the ordinary method. This would have given evidence as to the immunity produced. Without such further observations, accurate deductions cannot be drawn.

Finally, the wisdom of the subcutaneous injection of vaccine virus which, under ordinary circumstances, contains living bacteria is open to question. The bacterial count of vaccine virus (Hygienic Laboratory standards) may be as high as fifty bacteria per capillary tube. Goodall used from one quarter to three quarters of the contents of the capillary tube, and even if smaller amounts are used, this objection remains.

R. D. DEFRIES, M.D., Toronto.

"HITHERTO UNDESCRIBED DISLOCATION OF THE PATELLA ENDWISE"

To the Editor:—There is nothing new under the sun. In THE JOURNAL, Feb. 7, 1920, p. 388, there appeared under the heading "Hitherto Undescribed Dislocation of the Patella Endwise," a report of a case of horizontal rotation of the patella due to laceration of the quadriceps tendon. Such an injury has not hitherto escaped observation and description, as the author would indicate, but, on the contrary, is described in many textbooks on general surgery and in monographs on fractures and dislocations. Such cases are very rare, but have been known to occur for many years. Reference to this injury will be found in Stewart's "Manual on Surgery," page 316; Wharton and Curtis' "Practice of Surgery," page 598, Keen's "Surgery," Volume II, page 427; Wyeth's "Surgery," page 200; and it is described very fully and reported cases are cited in Stimson's work on "Fractures and Dislocations."

JOHN H. GIBBON, M.D., Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GOLAY'S MODIFIED WASSERMANN REACTION

To the Editor:—Could you give me information about the simplified serologic test of J. Golay, appearing in THE JOURNAL, Jan. 31, 1920, p. 361. Could you give me the technic?

PAUL SERRE, M.D., Dixmont, Pa.

ANSWER.—Golay's modification of the Wassermann reaction is based on the antihuman hemohemolytic method of Noguchi (THE JOURNAL, April 20, 1918, p. 1157). The antigen is furnished by an alcoholic extract of the liver from congenital syphilis. Complement is obtained from a rabbit immunized by injection of 10 c.c. of a 10 per cent. suspension of human corpuscles in physiologic sodium chlorid solution. The serum is inactivated by heating over a water bath at 56 C. for one hour. The amboceptor is titrated as follows: Into each of a series of tubes are put 1 c.c. of physiologic sodium chlorid solution, two drops of human serum and 0.5 c.c. of a 5 per cent. suspension of blood corpuscles. Progressive doses (one, two, three, etc., drops) of rabbit serum are added to the various tubes. The titer of amboceptor is the smallest quantity that will produce complete hemolysis after incubation over a water bath at 37 C. for one-half hour. The antigen is titrated in the same way by using the requisite quantity of amboceptor as determined in the foregoing. For preparing the suspension of blood corpuscles the defibrinated blood of the patient is washed with physiologic sodium chlorid solution until it is free from serum and the wash water is absolutely clear. The technic of the test is as follows: In the first tube (syphilitic system) are put 1.1 c.c. of physiologic sodium chlorid solution, the requisite drops of antigen, and two drops of the patient's serum: in the

second tube 1.2 c.c. of physiologic sodium chlorid solution and two drops of the patient's serum. The tubes are incubated at 37 C. for one hour. The requisite number of drops of amboceptor and 0.5 c.c. of a 5 per cent. suspension of corpuscles (hemolytic system) are then added to each tube; these are incubated until complete hemolysis of the control. The tubes are centrifuged and the results are read. It is advisable to use two doses of antigen for each test; one the maximum titer, the other dose sensibly less. Three tubes will then be necessary instead of two. The test should be made as soon as possible after obtaining the patient's blood.

THERAPEUTIC VALUE OF DIGITALIS

To the Editor:—Please refer me to the recent literature on the therapeutic value of digitalis as disclosed by recent investigations and tests.

J. A. SPEED, M.D., Durham, N. C.

ANSWER.—The literature contains a vast number of articles pertaining to digitalis; a general discussion of digitalis may be found in such recent works as Frederick Forchheimer's "Therapeutics of Internal Diseases," edited by Frank Billings and E. E. Irons; "A Manual of Pharmacology," by Torald Sollmann, or "Useful Drugs," published by the Council on Pharmacy and Chemistry. The subjoined references are to some of the leading articles of the last ten years:

- Hatcher, R. A., and Brody, J. G.: A Biological Standardization of Digitalis, *Am. J. Pharm.*, 1910, p. 360.
Hatcher, R. A.: The Persistence of Action of the Digitalins, *Arch. Int. Med.* **10**: 268 (Sept.) 1912.
Hatcher, R. A.: The Elimination of the Digitalis Bodies, *THE JOURNAL*, Aug. 9, 1913, p. 386.
Eggleston, Cary: Biologic Standardization of Digitalis Bodies by the Cat Method, *Am. J. Pharm.* **85**: 99 (March) 1913.
Eggleston, Cary: Clinical Observations on the Emetic Action of Digitalis, *THE JOURNAL*, Sept. 6, 1913, p. 757.
Hatcher, R. A., and Eggleston, Cary: The Stability of the Infusion of Digitalis, *THE JOURNAL*, Nov. 27, 1915, p. 1902.
Roth, G. B.: Standardization of Digitalis, *Bull. 102, Hyg. Lab., U. S. P. H. S.*, p. 5.
Barker, L. F., and Bridgman, E. W.: Extreme Prolongation of Conduction Time in the Bundle of His, an Example Resulting from Digitalis Therapy, *THE JOURNAL*, March 24, 1917, p. 903.
Rowntree, L. G., and Macht, D. I.: The Standardization of Digitalis and the Potency of American-Grown Digitalis, *THE JOURNAL*, March 18, 1916, p. 870.
Eggleston, Cary: Influence of Large Doses of Digitalis and Digitoxin on the Blood Pressures in Man, *THE JOURNAL*, Sept. 22, 1917, p. 951.
Hatcher, R. A.: Digitalis Therapy and the Present Shortage of Drugs, *THE JOURNAL*, Nov. 3, 1917, p. 1524.
White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, *Arch. Int. Med.* **21**: 740 (June) 1918.
Pratt, J. H.: Digitalis Therapy, *THE JOURNAL*, Aug. 24, 1918, p. 618.
Hatcher, R. A., and Eggleston, Cary: Study in Elimination of Certain Digitalis Bodies from Animal Organisms, *J. Pharmacol. & Exper. Therap.* **12**: 405 (March) 1919.
Pratt, J. H., and Morrison, Hizman: The Activity of American Digitalis, *THE JOURNAL*, Nov. 22, 1919, p. 1606.
Pardee, H. E. B.: Notes on Digitalis Medication, *THE JOURNAL*, Dec. 13, 1919, p. 1822.
Levine, S. A.: Potency of Some French Digitalis Preparations, *Boston M. & S. J.* **182**: 64 (Jan. 15) 1920.

In addition to the foregoing, two reports by the Council on Pharmacy and Chemistry (*THE JOURNAL*, Sept. 5, 1914, p. 881, and Dec. 4, 1915, p. 2024) and also a number of short reports and abstracts appearing in the November, 1919, issue of the *Journal of the American Pharmaceutical Association* (pp. 900 to 928) should be consulted.

INTRAVENOUS ADMINISTRATION OF SODIUM SALTS IN COMBINATION

To the Editor:—Can you tell me whether it is safe to give sterile solution of sodium salicylate and sodium iodid intravenously? Is their combination compatible with the blood stream without any special preparation? If it requires special preparation and cannot be made up by the practitioner or ordinary pharmacist, can you inform me of any reputable preparation for use?

W. D. CHASE, M.D., Bethlehem, Pa.

ANSWER.—The danger from the intravenous administration of solutions of sodium salicylate or of sodium iodid are those inherent in the intravenous method of drug administration. Since the effect of salicylates and of iodids may readily be attained by oral administration of sodium salicylate or other salicyl preparations, and of sodium iodid or one of its substitutes, the intravenous administration is rarely, if ever, necessary or warranted. Solutions for intravenous use must be sterile, but pharmacists should have little difficulty in furnishing satisfactory products. The objections to the unnecessary use of the intravenous method of administering drugs were discussed in *THE JOURNAL*, Nov. 11, 1916, p. 1450. The intravenous administration of salicylates was discussed in *THE JOURNAL*, Oct. 28, 1916, p. 1319.

"THE NEW DU PONT ETHER"

To the Editor:—Please let me know what information you have about the enclosed clipping.

E. W. CARPENTER, M.D., Greenville, S. C.

To the Editor:—"Cotton Process Ether," manufactured by the Du Pont Co., has been given considerable notoriety in the lay press. A letter of inquiry addressed to the firm elicits the information that "Cotton Process Ether is a very highly refined Di-ethyl Ether charged with Ethylene Gas." . . . What is your opinion of the "Cotton Process Ether"? Has the Council on Pharmacy and Chemistry investigated this product?

JOHN L. ATLEE, M.D., Lancaster, Pa.

To the Editor:—I have been waiting for some reference to the new anesthetic referred to in the enclosed clipping, but if any has been made in the medical press I have failed to notice it. If there is anything of interest in connection with this item, and it is not too much trouble, I will thank you to put me in touch with the situation.

HOLMAN TAYLOR, M.D., Fort Worth, Tex.

ANSWER.—About January 20, the "News Service" of the "E. I. Du Pont De Nemours and Co., Inc.," circularized the press of the country with what it was pleased to term a "good 'filler'"; this particular piece of press agent work dealt with "The New Du Pont Ether." To quote one paragraph from the "News Item":

The new anesthetic, which is a highly refined di-ethyl ether, modified by the addition of gases, has the following characteristics: (1) the property of inducing and maintaining anesthesia with practical freedom from postoperative nausea, and (2) the property of inducing and maintaining analgesia (conscious insensibility to pain) as distinguished from anesthesia (insensibility to pain plus narcosis).

The Du Pont Ether and the claims made for it are seemingly based on the work of one man, "James H. Cotton, M.A., M.D., Toronto, Canada," who published an article on "Cotton Process Ether and Ether Analgesia," in the *American Journal of Surgery* for April, 1919. However, Cotton did not give the composition of the "new" ether nor, so far as we are aware, has his work been corroborated. In view of the inquiries received, the Secretary of the Council on Pharmacy and Chemistry asked the Du Pont Chemical Works for the composition of the new ether. From the firm's reply we quote one paragraph:

" . . . The procedures of manufacture, and the exact composition of our ether, we regard as confidential information which we are entitled to retain unless a condition were to arise in which we were unable alone to satisfy the demand for this type of ether."

It has been recognized—and incorporated in the "Principles of Medical Ethics"—that the use of a therapeutic agent of unknown composition is unscientific and contrary to the best interests of the medical profession and the public; but it is many times more serious for a physician to employ a secret or semisecret substance as an anesthetic. A physician using such a semisecret substance would have little defense if the patient should die.

VERONAL (BARBITAL) ADDICTION

To the Editor:—Can you give me information about veronal addiction? I have a patient who is addicted to this drug, but I cannot find much in the literature about veronal addiction and its treatment. He has taken treatment at several hospitals, but they always send him out using his veronal. This case might be interesting to the medical profession, as veronal is being used a great deal by them at present.

A. B. C.

ANSWER.—Constant use of even small doses of barbitol (veronal) affects the central nervous system, especially the cerebellum and the vestibular portion of the cochlea. Those taking the drug habitually become much debilitated and seem less able to stand moderate doses. Death has occurred from a 3 gm. dose in addicts, while recoveries are known after a single dose of 10 gm. in others. Fog (*Ugesk. f. Læger* **79**: 370 [March 8] 1917) treated a case of addiction by gradually substituting antipyrin salicylate in the powders which were being taken until the patient was getting no barbitol at all. In England barbitol and its closely related derivatives have been classed as poisons, and as such are subject to the same regulations that apply to the sale of narcotics.

PELVIC VARICOCELE

To the Editor:—Please give a notation of recent literature on varicose veins of the broad ligament.

W. F. SIHLER, M.D., Devils Lake, N. D.

ANSWER.—The following references are taken from the Quarterly Cumulative Index:

- Wall, J. A.: Pelvic Varicocele, *Surg. Gynec. & Obst.* **23**: 62 (July) 1916.
Darnall, W. E.: Varicocele in the Female, *Med. & Surg.* **1**: 624 (Aug.) 1917.
Jewett, W. A.: Pelvic Varicocele, *Am. J. Obst.* **75**: 500 (March) 1917.
Furniss, H. D.: Pelvic Varicocele, *Am. J. Obst.* **75**: 152 (Jan.) 1917.

Book Notices

CONTRIBUTIONS TO MEDICAL AND BIOLOGICAL RESEARCH. Dedicated to Sir William Osler, Bart., M.D., F.R.S., in honor of his seventieth birthday, July 12, 1919, by his pupils and co-workers. Two volumes. Pp. 1268. Paul B. Hoeber, New York. Edition limited to 1,600 copies.

In these two large octavo volumes have been collected essays by some of the numerous pupils and co-workers of the late Sir William Osler. They are issued as a tribute to him on his seventieth birthday. The 142 essays are contributed by 151 writers, including 106 American, 33 English, 10 Canadian and 2 Scotch physicians; they are scientific, historical and literary. As might have been expected of such a large number of articles, there are variations in quality. Some are notable, others unusually good, and some of ordinary character. A few—happily only a few—are not quite worthy of a place in this series. In general, it may be said that the articles on historical, educational and social subjects distinctly surpass in literary quality and general interest those of a scientific or clinical nature. This is perhaps accounted for by the very nature of things, since the research worker or clinician could not produce a special study for this purpose, but must needs report work already done and use something already published, or, perhaps, rewrite for this purpose.

The first volume opens with a frontispiece—a steel engraving of Sir William Osler—an excellent likeness. Following is a beautiful poem by Sir Clifford Allbutt. In an editorial note the committee states the purpose and method of preparation of these volumes. The first twenty-eight essays are by British and Canadian physicians. Mr. Acland, in the first article, describes the Oxford University Museum. The article is well illustrated with especially fine half-tone photographs of the museum, and is a most interesting account of the relation to this museum of some of the predecessors of Sir William Osler in the chair of medicine at Oxford. It is brought out that John Ruskin was in part responsible for the designing of this structure. The second essay is a timely discussion of graduate study in London by Professor Adami, who is well adapted to the task, through his Canadian experience, his experience in the world war, and his intimate knowledge of conditions in America. Following two historical essays are some personal reminiscences of Sir William Osler by Dr. Crozier describing the early life of the great teacher.

A notable essay is that of Sir Auckland Geddes, entitled, "Social Reconstruction in the Medical Profession." Sir Auckland is intimately associated with reconstruction programs in Great Britain and is largely responsible for the establishment of the Ministry of Health. His views, therefore, are of great importance. It is interesting to note that in his opinion "the medical profession in Great Britain, with brilliant exceptions, is in the main composed of men who are immature as citizens, and in quite a separate compartment of their being possess expert technical knowledge, too often on sale to the highest bidder."

As is usual with his writing, Dr. Arthur Keith contributes a notable historical essay on the Hunterian School. Most fascinating is a description by Dr. Macalister, secretary and editor of the Royal Society of Medicine, of an institution which exists in medical Utopia, the Osler Library. This institution, which the author has visited in his dreams, is the

medical library *par excellence*. The essay must be read to be appreciated. Librarians will overlook a great opportunity if they fail to adopt some of Dr. Macalister's suggestions.

As is usual also, Sir Humphrey Rolleston contributes a notable essay on Thomas Trotter, physician of the Grand Fleet in 1780. The well known historians, Charles and Dorothea Singer of Oxford, describe a miniature depicting an operation. The miniature is beautifully reproduced in colors.

There follow essays on some seventeenth century writings on the endowment of research, on Galen, Plato and Immortality, and on "Fragment of a Persian Primer." Sir Clifford Allbutt discusses "Innate Heat."

The next essay has the fascinating title, "On the Sizes of Things, or the Importance of Being Rather Small," which develops into a discussion of the coleoptera and the reaction of bacteria on the human organism. A most interesting essay is that of F. Parkes Weber, "Thinking and Dreaming, and the Explanation of Dreams." Those acquainted with his notable book on the "Aspects of Death" will find this essay all that might be expected of the author.

Professor Anders writes on "Myxedema and Cretinism"; Dr. C. C. Bass on "Malaria"; Dr. Norman Bridge has a note on "Pulmonary Streptothricosis" as observed in California; Dr. N. S. Brill of New York writes on "Typhus Fever"; Dr. Thomas Cullen of Baltimore describes a special sign noted in the umbilicus; Dr. Edsall describes poisoning with manganese as it occurs in the industries. All of these essays, as those familiar with medical literature know, concern subjects which have interested their writers for many years and in which they have made notable advances.

The second volume opens with a discussion by Dr. Frank Billings on the "Rehabilitation of the Disabled." Brigadier General Munson has a brief essay on "Military Morale." Dr. C. L. Dana, who acted as editor, contributes an essay, "A Psychotic Episode in Roman History." The late Mortimer Frank has an interesting historical article, and Dr. Fielding Garrison a charming essay entitled, "Physicians' Letters." Very timely is the note by Guy Hinsdale describing epidemics of influenza in 1647, 1789 and 1807 as they were recorded by Noah Webster, Benjamin Rush and Daniel Drake. Particularly interesting is a note by Dr. Henry Hurd on Sir William Osler's relation to the Johns Hopkins Hospital, a note no one would be more fitted to write; and in the same manner, Dr. George M. Kober discusses the influence of Osler on American medicine. Space forbids even a mention of all the articles and authors. One interesting article follows another, promising the reader many valuable hours with these valuable essays; reminding him of the greatest work which any great physician can do, the instruction of students, leading to the production of great thinkers who will follow in his footsteps.

Mechanically, the books are excellent, printer and publisher having done their work well. There are many half-tones of artistic and historical merit. The selection of the type, the spacing, paper and binding could hardly have been improved on. The delay in publication, due to the long printer's strike in New York, was unfortunate and unavoidable. It was especially unfortunate because the books in their final form reached Oxford only two days before Sir William's death. These volumes represent a large amount of labor on the part of the committee, which may well take pardonable pride in the results of their efforts.

GUN-SHOT FRACTURES OF THE EXTREMITIES. By Joseph A. Blake, Lieutenant-Colonel, Medical Corps, U. S. A. Paper. Price, 4 francs. Pp. 136, with illustrations. Paris: Masson et Cie, 1918.

While this little book is essentially a work on war surgery it contains much that may prove of value to the surgeon in civil life, particularly with regard to the application of splints, bandages and extension apparatus to compound fractures. Virtually all the material presented has been described and discussed repeatedly in every surgical journal of consequence during the past three years, so that it should be fairly familiar. Nevertheless, those who desire an authoritative summary of the subject will find it here with sufficient details for general guidance.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lorry Bldg., St. Paul.
MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.
NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

GRADUATE MEDICAL EDUCATION

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The present position of undergraduate medical education in this country may be said to be satisfactory as the result of systematic efforts at standardization, although the principle that related departments should work together in order that the various problems connected with individual diseases may be viewed at once by the student needs to be more widely applied. On the other hand, graduate training has not been developed to a commendable extent. Before indicating some lines of reform in graduate training, it might be well for me to recite a few fundamental facts which show the vastness of the problem and also the needs of the large number of practitioners and specialists who present themselves for instruction.

THE GENERAL PRACTITIONER AND THE NEEDS OF THE COMMUNITY

The busy physician cannot keep pace with the remarkable and continuous additions to our knowledge of the modern methods of diagnosis and treatment, as well as the prevention of disease and the laboratory technic. Many of those who seek help enjoyed meager opportunities for the study of the basal sciences and clinical training while at a medical college, not to speak of the well known paucity of laboratory facilities. Now the aim and purpose of graduate teaching should be primarily to maintain an adequate medical service, and to accomplish this the needs of the general practitioner must be fully recognized. But though modern movements in the practice of medicine are everywhere evidenced by a tendency toward specialization, the general practitioner has not been displaced. Says Lyon¹ in this connection: "I predict that general practice will endure, will adjust itself to specialism and to group medicine and to public medicine."

Among those vitally interested in postgraduate medical education are some who would restrict training to the higher grade of practitioners and to those who desire instruction in special subjects as well as in the medical specialties. By exacting certain entrance requirements, they would exclude a large contingent of medical practitioners who apply for needed help: they would, in short, practically abandon the so-called polyclinic courses. It seems to me that ways and means should be found to assist all classes of physicians, excepting the so-called hopeless cases. Requirements for acceptance should be waived in the case of those who are in good standing and who merely wish to improve their diagnostic and therapeutic skill by taking an intensive practical course. It has been well said that the general practitioner is the foundation of any medical service, its "first pivot, its anchor, its instrument."

The creation of the Medical Reserve Corps of the army during the recent world war disclosed a not inconsiderable class of physicians who were professionally inefficient; but many of these finally reached the medical training camps after being subjected to a process of filtration. It seems to me that owing to the care and caution exercised by the Surgeon-General to make certain that all medical officers receiving appointment were men of good professional standing and fair attainments they should be admitted to the polyclinic and other courses of our graduate schools without examination or preliminary test of any sort. Munson² points out that for many of those not found qualified, special schools and "salvage classes" were organized, and they were thus rendered competent for efficient military duty. The war having taught us the great value of practical and intensive courses in preparation for commissions in the army and navy, it is obvious that brief polyclinic courses (e. g., of four months as the minimum) should hold a definite place, for the present, at least in our graduate schools, so as to qualify the professionally inefficient for civilian service.

One factor which bears specifically on this aspect of the subject is the precept that above the interests of the medical school for graduates stand the interests of the general public. These interests may not be ignored in planning the scope and curriculums of our postgraduate institutions. There was a time, easily recollected by the majority of the present generation of physicians, when in our undergraduate schools, the courses in pathologic anatomy, including the performance of necropsies, in microscopy, physical diagnosis, laboratory methods, in bedside clinical training and other branches were on a scale far from commensurate with their importance. The men and women who were graduated under the old order of things, and the same may be said of all who have been engaged in general practice for a few years even, cannot, as stated above, keep abreast with the more recent and continuous advances of enormous significance to the communities in which they carry on their professional work. Shall these general practitioners be denied an opportunity to acquire modern methods which will enable them to diagnose and attack disease with greater assurance of success? Is it not reasonable to assume that it is the duty of graduate schools to make provision for the immediate needs of the public and of practicing physicians who recognize and seek to remove their deficiencies, the while indulging the hope that one day this demand will be less insistent or may cease to exist altogether?

There is another and hopeful phase of the situation to be observed in the present-day recognition of the importance of correlating the teaching of the basal sciences with the more strictly practical branches of medicine. Many of the

1. Lyon, L. P.: Graduate Education in the Clinical Branches, and the Minnesota Experiment. J. A. M. A. 69: 1307 (Oct. 20) 1917.

2. Munson, E. L.: The Needs of Medical Education as Revealed by the War, J. A. M. A. 72: 1050 (April 12) 1919.

difficulties and much of the confusion experienced by the undergraduate student will disappear, once he clearly appreciates the relationship that the various scientific subjects bear to one another and to clinical medicine.

The same precept applies with equal force to postgraduate teaching; and in order to accomplish a satisfactory correlation of the different branches it is necessary to have an organization based on a comprehensive knowledge of the practical interrelations of the branches represented in the curriculum. Such a scheme of coordination of the instruction is possible only with physicians who have given the subject of the arrangement of the graduate school curriculum careful and thorough study. Moreover, cooperation between the heads of the different departments and the deans of the various schools is essential to the end that appropriate teamwork may be effected. It is in line with the need of meeting this requirement of the graduate student that a most important reform is possible; but obviously it will demand time and serious thought to bring it about.

Doubtless, the further development of an adequate scheme of graduate medical education in this country will be in large part the result of the efforts of the American Medical Association. As in the case of undergraduate education, so in that of graduate training, the recommendations of special committees of this body, with the object of standardizing instruction, will be generally accepted. It may be reasonably assumed that candidates will be subjected to a process of elimination; but it is hoped and believed that this sifting will not exclude the medical graduates who compose the backbone of the profession and whose deficiencies are, in many cases at least, attributable to low standards of the medical schools from which they were graduated.

There should be brief, intensive courses, then, for the average general practitioner; they are an effective help in his work, and at the same time meet in a measure at least the needs of the community. Indeed, this educational movement is so largely associated with the vital interests of the public that further comment regarding the duties and responsibilities of graduate schools in the matter would seem to be unnecessary. Surely, graduate medical schools should not wait until the people in general are so organized and enlightened that they can adequately express their professional needs. For these brief group courses no official certificate should be granted, although a statement issued by the dean setting forth that the candidate had taken certain polyclinic courses, with a mention of the duration of the period of study would be allowable.

THE SPECIALTIES

The world war revealed the scarcity of physicians who were qualified to render service along technical or "highly specialized lines." While there was an unprecedented demand for physicians of the highest attainments during that period, the experiences gained served to emphasize the necessity for improvement in both undergraduate and graduate medical education, so as to procure and maintain an adequate expert medical service.

It follows as a natural corollary from the foregoing statements that one of the chief functions of the graduate school is to provide an opportunity for the preparation of physicians for service requiring exceptional qualifications and the highest skill, as specialists, teachers and research workers. To those desiring to pursue the advanced courses, however, a strict psychologic rating should be applied; and all who fail to show the proper mental aptitude should be rejected. These entrance examinations are to be conducted by a competent specialist in neurology or psychology in conjunction with the dean.

I feel strongly that the time has arrived when we must free ourselves, by degrees if need be, from the custom of including among polyclinic courses, strictly speaking, the recognized medical specialties. They should fall either into the higher courses or into those leading to degrees, or the purely personal ones with a view to attaining to greater technical and practical efficiency along special lines and to become impregnated with the environmental atmosphere of a given teacher. To requests for personal tuition either in general medicine or surgery or the specialties, graduate schools must ever give heed; but the instruction should be conducted quite independently of any or all group courses, and no degrees should be granted.

The adoption of advanced courses to prepare men for the specialties in medicine would be a distinct and long step in advance, and a commendable asset in the movement to eradicate incompetents. This object, the standardization of the specialties, will not be attained so long as one or more brief polyclinic courses give physicians the right to assume the rôle of a specialist. For example, modern operations are on the whole comparatively safe; but far greater credit would accrue to the medical profession if the so-called leading operations in all departments of medicine requiring surgical procedures were performed only by the thoroughly trained, skilled and experienced surgeon.

The organization and standardization of advanced courses necessitate an immediate division of internal medicine and general surgery into several subbranches or specialties. Further details with regard to these two subjects would be beside the scope and purpose of this article, although it may be added that each subdivision should be provided with a full-time head, and that graduate schools require a large personnel of well-trained and experienced teachers. The progress of the science and art of medicine has been, doubtless, retarded by lack of preparedness on the part of physicians who have been pursuing special limited fields of civilian practice. More rigid training after the proper scientific preparation and certification for specialists is a most pressing public need and should engage the attention of our newly organized graduate medical schools. Both entrance requirements and curriculums would naturally differ in different medical specialties, but they must without exception be conducted under the higher scientific and practical standards.

METHODS OF TEACHING

It is in the graduate schools of this country that the cooperative or group method of studying disease, which is to be commended, must be properly rooted and developed. It is time that a satisfactory start be made in the higher courses leading to degrees, which should be a guarantee of exceptional attainments in preparation for the conduct of professional chairs or the practice of one of the recognized specialties, or for public health work; indeed, this should be undertaken as soon as proper facilities can be offered.

It is generally conceded that original research is to be encouraged by graduate rather than undergraduate schools; it can have no definite place in the curriculum of the latter because of two significant facts: first, lack of time to pursue original investigation successfully, and second, lack of qualifications to carry on such difficult and exacting work with promise of important and reliable results.

The custom of conducting group courses has its well-marked limitations. While it is feasible to give theoretical training (lectures, demonstrations and the like) to groups or classes of students, the practical work, which should make up the bulk of the course, should be in great part at least by individual contact of the student with patients and apparatus under supervisory instruction. In operative tech-

nic a student assistantship affords an excellent opportunity to gain practical information; the same remark applies to the student of internal medicine. The method of individual touch with apparatus and patients is indispensably necessary in the more advanced courses for which special degrees are offered. It will be seen that an abundance of clinical material and laboratory equipment is a prime requisite for carrying on such training. Its successful consummation, therefore, demands a large corps of competent teachers, and the affiliation with universities of all available hospitals, clinics, laboratories and museums. Such an affiliation of hospitals and clinics with universities, however, should be effected slowly and systematically. Indeed, the process should never be more rapid than is consistent with thorough organization and efficient, systematic teaching. The length of degree courses should not be less than from two to three semester years.

The chief primary aim and purpose of graduate schools being to provide highly skilled specialists, teachers and research workers, so far as they accomplish these ends will they become a potent factor in the era of production and construction on which America has recently entered. To promote a scheme such as outlined, however, an ample endowment fund is absolutely essential. Not only are new hospitals and laboratories required, but also endowed chairs. We are passing through a period in which "drives" have become popular and surprisingly successful. It has been authoritatively stated that the need of funds was never greater at our universities than at present, owing to plans looking to new developments in connection with the graduate medical schools and in other lines of endeavor. Since time is the essence of such an undertaking, it is hoped that "drives" will be made in the immediate future by the alumni and friends of the great American universities which have failed to do so in the past. It should be recollected in this connection that institutions which have received grants from the General Education Board have been those which have themselves contributed a certain amount. I am decidedly of the opinion that once the public, more especially the benevolently inclined portion, thoroughly understands what is the goal of these schools and that the welfare of the community is first, financial aid can be obtained through private philanthropy and from the state as well.

Much pertaining to both comprehensive planning and execution of the public demands in regard to medical service must obviously be left to the future. Meanwhile, all who are identified with the control and direction of graduate education should be intensely occupied with endeavors to meet the new and ever changing conditions of the times. This will necessitate the institution of new policies and methods which must be given proper direction, after the most thorough consideration of their wisdom. As the work progresses there must also be maintained close intercourse between the policy forming management, the deans and the faculties, if a real merit system of graduate medical education is to be expected.

FUNCTIONS OF THE GRADUATE SCHOOL

To recapitulate, the fully functioning graduate school should provide:

1. Polyclinic courses preferably of from four to eight months' duration for those pursuing general practice, who are desirous of overcoming their unavoidable deficiencies.
2. Advanced courses in the different departments of internal medicine, surgery and in the medical specialties for which degrees are offered, properly standardized and from two to three years' duration with an adequate standard of acceptance and an examination at the close of each scholastic year.
3. Personal courses under special arrangements with individual teachers, quite independently of any class or group instruction.

4. An abundance of material and laboratory space and equipment resulting in part from a gradual and careful affiliation of hospitals and clinics with universities, and a large corps of teachers with sharp division of duties and fixed responsibilities, including full-time professors as heads of departments in the advanced courses, with proper emoluments of their services.

5. A research bureau with separate organization to which the other departments defined above would naturally contribute candidates, subject to certain acceptance standards.

6. Large endowments to meet the conditions of the times; this is fundamental to all success. The people—the benefactors—must be fully informed of the purpose and aims of this modern educational product, as an aid to the securing of private and corporate endowment.

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Idaho October Examination

Mr. Paul Davis, director, Bureau of License, Idaho Department of Law Enforcement, reports the written examination held at Boise, Oct. 7-9, 1919. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Twenty candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	(1915)	82.3
Chicago College of Medicine and Surgery	(1917)	83.2
Hahnemann Medical College and Hospital of Chicago	(1913)	86.3
Northwestern University	(1904) 83.8,	(1907) 78
Rush Medical College	(1917)	81.2
University of Illinois	(1919)	85.3
State University of Iowa College of Medicine	(1903)	85.5
University of Kansas	(1917)	82.8
University of Maryland	(1915) 83.3,	(1918) 83.2
Boston University	(1905)	89.7
Marion-Sims College of Medicine	(1896)	88.6
St. Louis University	(1906)	87
John A. Creighton Medical College	(1911)	80
University of Pennsylvania	(1917) 81.8,	(1919) 80.5
Hahnemann Medical College and Hosp. of Philadelphia	(1907)	89.4
University of Tennessee	(1919)	87.4
McGill University	(1919)	83.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver College of Medicine	(1894)	Utah
University of Colorado	(1917)	Colorado
Chicago College of Medicine and Surgery	(1910)	Utah
Rush Medical College	(1910)	Utah
St. Louis University	(1905)	Utah
Jefferson Medical College	(1897)	Washington

Montana October Examination

Dr. S. A. Cooney, secretary of the Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 7-9, 1919. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 14 passed and 9 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago Coll. of Med. and Surgery	(1915) 76.1,	(1917) 81.8
Northwestern University	(1909)	80.9
Rush Medical College	(1915) 82.8,	(1919) 79.7, 83.3, *85.4
State University of Iowa College of Medicine	(1897)	84
Univ. of Minnesota Coll. of Homeo. Med. and Surg.	(1897)	80.5
University of Minnesota Coll. of Med. and Surg.	(1907)	78.9
Long Island College Hospital	(1914)	82
University of Oregon	(1917)	76.9
Willamette University	(1913)	75.2
Jefferson Medical College	(1910)	76

College	FAILED	Year Grad.	Per Cent.
Loyola University	(1916) 56.4,	(1917) 62.6
Barnes Medical College	(1909)	47
Kansas City Hahnemann Medical College	(1905)	59.5
St. Louis College of Physicians and Surgeons	(1909)	70.3
St. Louis University	(1913)	63.9
John A. Creighton Medical College	(1917)	66.9
University of Oregon	(1919)	68.7
Memphis Hospital Medical College	(1911)	62.7

* Received certificate for four years' work, August, 1919.

Social Medicine and Medical Economics

THE DISPENSARY SITUATION IN NEW YORK CITY

Summary and Recommendations

BY THE PUBLIC HEALTH COMMITTEE OF THE NEW YORK ACADEMY
OF MEDICINE*

The Public Health Committee of the Academy of Medicine was organized, May 1, 1911. Its main purposes have been:

1. To maintain a bureau for the collection of facts in regard to public health, sanitation and hygiene.
2. To endeavor to establish an active cooperation with all public health activities in the city.
3. To keep the medical profession advised of current public health conditions.
4. To render to the public authorities and to the community at large an authoritative medical opinion on public health matters.
5. To undertake and suggest special researches looking to the solution of vital public health problems.
6. To make comparative studies of methods and results of public health activities in other cities, both in this country and abroad.
7. To utilize facts obtained by the study of public health and hospital conditions for practical application in the preparation of the annual municipal budget.
8. To assist actively the various departments of the city government which relate to public health and hospitals in the preparation of their tentative budgets.
9. To study the hospital and dispensary situation in the city with a view of making plans for their future development and in order to further the efforts for raising the standards of efficiency.

From the time of its organization the committee has carried out its program faithfully, as demonstrated in the annual summaries of its work. The sphere of action and influence of the committee has been widened from year to year, and it now occupies an important place in the public health affairs of New York. Two of the studies of the committee have already been published in *THE JOURNAL*.¹

I. CLINIC FACILITIES IN NEW YORK

According to the report of the state board of charities there are 153 dispensaries in New York City. In this number are included twenty-one tuberculosis, eight dental, ten eye and three rabies clinics of the department of health, and six school dental clinics maintained by the Children's Aid Society. Of the 105 dispensaries outside of the health department and school dental clinics, there are sixty-five outpatient departments of hospitals, thirty-four detached dispensaries and six college dispensaries. In addition, the health department maintains twelve venereal disease clinics (all but two advisory only), three occupational clinics and sixty baby health stations. Several private agencies maintain an additional number of milk stations.

The average number of persons treated annually in the dispensaries of the city has been one and a quarter million for the last five years, and the average number of treatments given is about four million, making an average of over three treatments per patient.

Over 2,000 physicians in New York City are giving their services to dispensaries, and in the vast majority of instances their services are not compensated. Approximately 69 per cent. of the physicians are associated with outpatient departments of hospitals, and the remainder, or about 31 per cent., work in the independent dispensaries. The dispensaries are open weekly for about 8,000 clinic hours. Most of the dispensaries are open during morning and early afternoon hours. The number of dispensaries open in the late

afternoon hours is very small, and the total number of evening hours during which the clinics function is only 213½, or a little over 2.5 per cent. of the total number of clinic hours per week.

There is evidently a sufficiency of dispensary facilities in New York City, and there will be no need for additional dispensaries for some years to come if the existing facilities can be utilized to a larger extent, and if, with a system of paying salaries to physicians, the dispensary hours can be arranged to meet in a larger degree the demand of those who are employed, and of the schoolchildren.

Of late the dispensaries have taken on functions along the lines of preventive medicine and public health, but this development is still in its infancy. The great opportunities of the dispensaries in the fields of both curative and preventive medicine have not as yet been fully grasped by the institutions, nor have their social responsibilities been clearly realized.

II. THE DISPENSARY LAW

According to the state law of New York, all persons applying for advice or treatment at a dispensary must be questioned as to their ability to pay a physician, and only those who are, in the opinion of the registrar, unable to pay physicians or dentists, shall be accorded treatment. Exceptions to the rule are permitted in emergency cases and cases of communicable disease (this refers chiefly to tuberculosis and venereal diseases), and in the case of persons applying at dispensaries connected with medical schools which may be "selected for use in clinical instruction." It is a misdemeanor to obtain medical or surgical treatment on false representation. The questioning concerning the financial status of dispensary applicants required by law is more or less perfunctorily performed; and although the law has been on the statute books for twenty years, not a single case has been brought to court.

Studies made at various times in several cities, including New York, show that the amount of imposition on the practically free services of dispensaries is not flagrant and does not constitute an important factor in the dispensary problem. The study conducted by a special committee of the New York County Medical Society in 1912² led to the conclusion that 10 per cent. of the patients seemed "able to pay for medical treatment under ordinary circumstances, but the margin over and above fixed expenditures seemed in most cases so slight that in illness demanding continued treatment or the services of a specialist, to pay a physician would mean for them serious deprivation or the incurring of debt from which afterward it would be difficult to escape."

A study of 1,000 cases at the Presbyterian Hospital Dispensary in Philadelphia showed that in 2 per cent. of the cases the acceptance of free care offered by the hospital amounted to abuse.³

The Illinois State Health Insurance Commission reported in May, 1919, that according to its study 4.5 per cent. of the dispensary patients "were recipients of medical charity which their economic status did not justify."⁴

Similar studies at the Boston Dispensary and at the Washington University Dispensary at St. Louis led to the conclusion that 2 per cent. of the patients were taking undue advantage of the free services of the dispensary physicians.⁵

Our own study, based on first hand information obtained from the patients who were visited in their homes, corroborates the findings of the other investigations. We found that 2.2

* The members of the committee are E. H. Lewinski Corwin, Ph.D., executive secretary; Dr. Charles Loomis Dana, chairman; Dr. James Alexander Miller, secretary, and Drs. John S. Billings, Nathan E. Brill, Robert J. Carlisle, James B. Clemens, Haven Emerson, Lewis Fox Frissell, Arpad G. Gerster, S. S. Goldwater, John A. Hartwell, Ward A. Holden, L. Emmett Holt, Otto V. Huffman, Walter B. James, Walter L. Niles, Bernard Sachs, Thomas W. Salmon, Frederic E. Sondern, M. Allen Starr, W. Gilman Thompson, Philip Van Ingen, Karl M. Vogel, George B. Wallace, Cassius H. Watson and Herbert B. Wilcox.

1. Quarantine in the Maritime Cities of the United States, J. A. M. A. 60: 194 (Jan. 18) 1913; Report on Postmortem Examinations in the United States, *ibid.* 60: 1784 (June 7) 1913.

2. New York State J. Med. 13: 50 (Jan.) 1913.

3. Jobs and Hostetter: A Social Survey of Dispensary Patients in Philadelphia, *Mod. Hosp.*, November, 1915, pp. 321-326.

4. Report of Health Insurance Commission of the State of Illinois, May 1, 1919, pp. 93, 355.

5. Davis and Warner: Dispensaries, New York, 1918.

per cent. of the patients were palpably taking undue advantage of the dispensaries, that 79.4 per cent. were justified in the use of the dispensaries because of low economic status, and the rest because they sought the services of specialists or the use of equipment and apparatus which could not be obtained anywhere except in a dispensary at a price which they could afford to pay.

The bulk of dispensary work today is done in departments devoted to the treatment of special conditions. Not more than 20 per cent. of treatment is given in the department of internal medicine: the remainder is divided among pediatrics, surgery and specialties. The vast majority of patients seek the advice of specialists in the dispensary because they cannot meet the fees prevailing in private practice.

In view of that condition, it may be stated that the dispensaries have ceased to be institutions for the destitute only, and have come to occupy a very prominent place in the treatment of disease among the wage-earners of the community.

III. DISPENSARY POLICY AND EXECUTIVE DIRECTION

There exists no standard method of dispensary organization, either from the administrative or medical point of view. The dispensary has too often been treated as a Cinderella in the hospital household—neither sufficient funds nor sufficient thought have been given to its organization and work.

The problems encountered in dispensary administration are probably more complex and difficult than are the problems arising in the management of a hospital, yet the majority of institutions lack a definite policy with regard to dispensary work, and the administrative supervision is in too many institutions purely perfunctory. Likewise, with the exception of independent dispensaries, there seldom is an executive officer of training and ability attached to the dispensary whose duty it is to give undivided attention to the study of its problems and the development of adequate administrative procedure.

There is a need in most of the institutions of a clearly defined policy and responsibility to be formulated by the board of trustees and to be supervised by a joint committee representing the board of trustees, as well as the medical board. Provision should also be made, at least in the large institutions, for a full-time executive, who will carry out the policies of the board of trustees and devote his undivided thought and attention to the administrative problems of the dispensary. Many of the existing administrative deficiencies would be obviated by the existence of well defined policies and by the fixing of responsibility for their enforcement on specially designated full-time executives.

IV. FEES

The prevailing charge for admission, drugs, dressings, apparatus and so on varies from institution to institution. No effort has been made to standardize charges. They are invariably very low, although in some institutions the registration fee is as high as one dollar. Municipal hospitals have thus far refrained from charging any fees in their outpatient departments, although payments are accepted in such hospitals for the maintenance of ward patients. During the last year the charges in many institutions have been slightly increased. The increase in charges leads at times to a falling off of the number of patients, who seek treatment in institutions where the charges are lower. There is an evident need of an equalization policy in the matter of charges for treatment, as well as for medicine, dressings, etc., and an attempt along these lines should be made jointly by all the institutions, including the municipal.

At least three considerations must be borne in mind when the problem of fixing dispensary charges is undertaken. First,

all the institutions are in need of additional income for the purpose of improving the services; second, the majority of the wage-earners are able to pay part of the cost for skilled medical service, and third, there exists a class of patients, chronic invalids and the unemployed, who will be deprived of treatment altogether if the admission fee is demanded in every case. The fees should likewise be low or remitted to patients in tuberculosis and other similar clinics to which the patients are required to come for sanitary supervision. It is therefore necessary to adopt a system of carefully graded fees with a maximum not to exceed 50 cents, and to make that system uniform in the dispensaries throughout the city. The wage-earners in a more or less steady employment could pay a fee of 50 cents per visit without hardship. Moreover, considering the fact that the majority of patients come to the dispensary to seek the advice of specialists, the suggested increased fees would not be considered prohibitory to most of them. They are at present compelled to resort to the practically free services of the dispensary because they cannot meet the customary charges of specialists. The adoption of a 50 cent maximum fee would materially increase the present dispensary income, and would aid toward making possible the necessary improvements in dispensary service. It would help the institutions to pay salaries to physicians and to employ larger clerical, nursing and social service staffs to carry on more adequately the manifold functions of the dispensary and to meet the responsibilities toward the patients and the community. Even small salaries of from \$300 to \$600 yearly are often sufficient to keep good young physicians interested in their positions, and to lessen the medical "turn over" in the clinics.

The institutions which are poorly equipped, and which would be unable to render a superior grade of service, would lose many of their patients who, on paying a higher fee, would be more discriminating, and in this way the inferior institutions would be gradually eliminated.

V. REDUCTION IN WAITING TIME

The two things that first need amelioration in clinic procedure are the reduction in the waiting time before admission and the method of assignment of patients to clinics. In many instances, patients are made to wait unduly long periods of time, which is a hardship for most of them if they are employed, or, as in the case of mothers, if they have domestic duties. It is believed that this could be obviated to a large extent by the system of appointments, as is customary in private practice. That such a system can be made practical has been demonstrated by the American Red Cross Clinic for Children at LaHavre, and at the Mayo Clinic at Rochester, Minn.⁶

Because the dispensary plant is in many instances used only for several hours during the day, there is a great overcrowding of patients at most of the institutions. More extended use of the dispensary facilities would obviate the existing overcrowding in many instances and would allow for better individual attention than is at present accorded the average patient. When the extension of the use of the plant is impracticable, the principle of limitation of numbers should be applied, that is, no more patients should be admitted to the dispensary than the facilities of the institution in personnel and equipment would warrant.

The present practice of the lay registrars assigning patients to the several departments of the dispensary results in numerous transfers from one clinic to another, with the concomitant loss of time, and also in the condition that many clinics treat cases which do not belong to them.

6. The Red Cross plan is described by Dr. Edwards A. Park: *Mod. Hosp.* 13: 101 (Aug.) 1919.

VI. THE DIAGNOSTIC CLINIC

To remedy this, it is suggested that each dispensary should have a diagnostic division, and patients with systemic diseases or suffering from conditions not easily ascertainable should receive the benefit of an examination by a group of physicians representing the several departments of the dispensary, and be assigned to the treatment departments after a preliminary examination has been made. Conditions in which the diagnosis is obvious, such as simple wounds or fractures, or when the disease or complaint is trivial and transient, such as a common "cold," could be disposed of without assignment to the diagnostic clinic.

Patients in need of a general examination should be assigned to the diagnostic division and subsequently sent for treatment to other departments. The physicians in the several departments would serve in the diagnostic division on a rotation basis. In this way the patients would receive the benefit that accrues from medical team work, and the physicians would have a much better opportunity for a complete study of patients than they do under the present form of organization. Consultants of broad experience and of recognized ability should be associated with and should actively participate in the work of both the diagnostic and the therapeutic departments.

VII. EDUCATIONAL OPPORTUNITIES

The waiting period of the patients has not been utilized in any of our dispensaries for educational purposes. Even if a system of appointments is introduced, it will not entirely obviate waiting. This period could be well utilized if moving pictures, dealing with certain health aspects, could be shown, large posters placed in the dispensary rooms, so that they could be read from the distance, or other methods of health education employed. Dietetic demonstrations would be of great value in this connection. The dispensary might also be used outside clinic hours for lectures, classes in dietetics, corrective gymnastics, teaching of hygiene, and similar activities; in other words, the dispensary should strive to become the educational center of the neighborhood.

VIII. ROOM ARRANGEMENT

It is important that in many of the institutions better arrangement of the facilities should be made so that the clinic rooms would be well lighted and ventilated and that the laboratories would be housed in readily accessible locations, and that clinics closely related in function should be in juxtaposition. The arrangement of the waiting rooms in large clinics could also be improved, and when feasible the exit from the building should be separated from the entrance. The social service department should likewise be made easily accessible and located in immediate proximity to the diagnostic department, which would facilitate the joint work of the two departments.

IX. EQUIPMENT

In order to make the services in dispensaries as attractive as possible for physicians, and in order that the patients may derive the greatest benefit from medical skill, it is imperative that the dispensaries be equipped with all the modern facilities for diagnosis and treatment of disease. Many institutions have meager laboratory and roentgen-ray facilities. The hospital laboratories on which many of the outpatient departments have to depend are too overcrowded with work for hospital patients to assume all the burden that proper medical work in the dispensaries would impose on them. In addition to the lack of adequate laboratory equipment, the dispensaries are seldom equipped with therapeutic workshops and with the facilities for hydrotherapy, mechanotherapy, thermotherapy and electrotherapy.

X. REMUNERATION OF DISPENSARY PHYSICIANS

Even if all the necessary physical facilities were provided in the dispensary, it would not attract physicians for continued and sustained application if there were no other benefits derived from dispensary practice. Medical ethics restrains physicians from deflecting patients from the dispensary to their private offices, and particularly with the present high cost of living it is very difficult for many to devote a great deal of time to dispensary practice, which, with a few exceptions, is not compensated. Remuneration, even though nominal, affords a stimulus to more conscientious performance of work, and makes possible a better discipline in the institutions. But what is even more important for the efficiency of the service is a medical organization correlating the dispensary service with that of the hospital, such as is already in vogue in the best institutions and should be adopted by others. The essential features of a correlated dispensary and hospital service are herewith suggested.

XI. CORRELATION OF DISPENSARY AND HOSPITAL SERVICE

The medical organization of outpatient departments which are connected with hospitals should be divided into two main branches corresponding to those of the hospital, namely, the medical and the surgical. The medical division of the hospital and that of the dispensary should be under one director. Likewise, the two surgical departments should have common direction. The specialties in each branch should be differentiated in accordance with the best interests of the medical and administrative organization of each institution. The outpatient service should be graded. The appointment to the lowest grade in the outpatient department should be made on a probationary basis of three or six months, and after a successful trial the probationer should, on the recommendation of the chief of clinic and with the approval of the board of trustees, be appointed a member of the dispensary staff in the lowest grade. On completion of a period of satisfactory service he should be promoted to a higher grade, and whenever the conditions warrant, should be made a member of the lowest grade of the visiting staff of the hospital. A rotating service for the junior members of the visiting staff of the hospital, allowing a combined service in the dispensary and in the hospital, is beneficial to hospital and dispensary alike.

Whenever such an arrangement exists, it affords physicians a stimulus to enter dispensary service; it adds to the experience of physicians, many of whom, on account of the limited facilities of hospitals, do not get the benefit of hospital association except during the one or two years of internship, and it gives to the hospitals a broader opportunity of choice of the visiting staff. A universal adoption of such a plan would be welcomed by the profession, and it would obviate to some degree, perhaps, the necessity for paying salaries to dispensary physicians. The opportunity for promotion to hospital rank counts for more than a salary reward for a routine day-to-day drudgery without hope for promotion. Such a plan would also dovetail with a medical school organization.

In detached or independent dispensaries, where such a plan of organization could not be effected, arrangements with medical schools for organizing graduate instruction could perhaps be made in order that the whole field of clinic work of this city should be permeated with the spirit of research and teaching, and in order that all existing facilities should be put to the most useful purpose.

The study of medical records has revealed the fact that the special institutions devoted to the treatment of particular conditions are almost invariably superior in their work to the corresponding branches of the general dispensaries. It seems important, therefore, that in making plans for the development of New York as a great medical teaching and research

center the facilities and clinical material of the special institutions should be correlated and utilized to the fullest extent.

XII. MEDICAL RECORDS

Adequate medical records prepared in a certain standard way and legibly written are one of the prime essentials of conscientious performance of work and of a scientific utilization of the clinic material. Under existing conditions, in which the physicians in the majority of instances are required to write histories in the rush of clinic work, and where there is no supervision over the keeping of histories, and no scientific or administrative stimulus for keeping them, the medical histories in many instances are little more than worthless. Often the essential findings of the physical examination and the ancillary laboratory tests, or the character and method of treatment, are not recorded.

The analysis of the thousands of medical records obtained from a large number of institutions, although inadequate as an exact portrayal of medical work, indicates, however, that in many instances dispensary work is of a slipshod character.

General physical examinations were found to be recorded in less than one fifth of all the cases examined. For certain conditions, such a procedure is probably unnecessary. In many others, however, the failure to make an adequate general physical examination is a serious omission and indicates to what extent the dispensaries could be improved if their responsibilities as agencies for the prevention of incipient disease and the discovery of remedial defects were fully realized. Then, again, the fact that the number of diagnoses recorded on the medical histories exceeds the number of physical or local examinations and the number of laboratory tests would indicate that the diagnoses are often forced without sufficient warrant. Even in such cases diagnosed as nephritis, for instance, records indicate that urinalysis was made in only 66.7 per cent. of instances. Among the cases of syphilis studied, in only 50 per cent. was an indication found that the patient had been given proper treatment.

For the efficient functioning of the clinics, it is desirable that clinic staff conferences should be held regularly and cases reviewed. The members of the staff should be urged to study intensively certain series of records and make analyses of them for presentation, discussion and publication.

With an administrative organization, as outlined in this series of recommendations, the keeping of adequate histories is quite feasible. In order that the histories may be made readily available for all purposes for which they may serve and in order that they may be kept in a uniform way, it is essential for a dispensary to maintain a central cross index filing system, such as has been successfully maintained at the Presbyterian Hospital of New York or at the Massachusetts General Hospital or at the Mayo Clinic, for example. The daily routine procedure in dispensaries should provide that at the close of each clinic session the clinic secretary should turn in the day's records to the filing clerk, who, on examination, files them in accordance with an established system, if the records contain all the information called for by the standard adopted. If the records are incomplete they should be returned to the physician for the supplementary information before they are placed on file. Before the clinic session begins, the records pertaining to patients who are expected to return on that particular day would be obtained by the clinic secretary from the filing clerk. Additional items indicating the patient's progress would be added, and the records again returned to the central file.

Although theoretically the central file is highly to be recommended for its manifold advantages, it has certain practical drawbacks. First of all, it is expensive, as it requires a considerable staff of trained and experienced file clerks with a

thorough understanding of medical terms. Its proper functioning is also dependent on the existence of clinic secretaries who would cooperate with the filing department in seeing that all the details are entered and that the department is notified daily in time to prepare histories for each clinic session.

Furthermore, the frequency of error in misfiling a record increases with the number of records handled, and accordingly the chances of a temporary loss of record are greater in the central files than they are in the individual files. Likewise, the question of available space for a central file must be considered before its adoption. A central file usually occupies a considerable amount of contiguous room space, while the decentralized file is easily distributed among the several clinic rooms.

Finally, the adaptability of a central file to the requirements of certain clinics, such as tuberculosis and venereal disease, which are called on to make periodic summaries of their work, must also be considered.

XIII. CLINIC SECRETARIES

Another important factor in increasing the efficiency of the clinic is the dispatch with which patients are prepared for examination. There are few institutions in this city at which clinic secretaries, as they are called, are employed. Wherever the experiment has been tried, whether with paid or volunteer workers, it has proved to be of great value. It is very important that clinic secretaries be generally employed as adjuncts in the discharge of clinical procedure. Many volunteers could be secured for the service from among those in the schools for social service, for whom such an experience would be of invaluable assistance in their future careers. A certain number of paid secretaries will, under any conditions be necessary in the clinic in order to train volunteers and facilitate the work of the physicians, and to spare the patients a great deal of waste of time and effort and also their occasional disappointment and discouragement.

XIV. FOLLOW-UP SERVICE

One of the tests of a dispensary's efficiency is the hold it exercises over its patients, for unless patients return for treatment until discharged, a great deal of the effort and money expended has been lost. As matters stand, the return visits in some of the departments of the clinics are very few. In certain departments, like tuberculosis, venereal disease and children's, efforts are being made to bring the patient back through the follow-up system, which in the majority of institutions consists in notifying patients who fail to come on an appointed day that they should return to the clinic. Only in certain institutions are the patients visited by the agents of the dispensary and urged to come back. There are many reasons for the failure of the patients to return. They sometimes get discouraged; frequently, again, the symptoms which in the first instance drove them to the dispensary disappear, and it is not evident to them that they should continue treatment. In this study it has been shown that the majority of the patients gave "pain" as the chief symptom which prompted them to seek medical advice. It is essential for an efficient clinic to have an adequate number of workers who would be able to impress the patients with the importance of continuing treatment, even when the distressing or annoying symptoms disappear.

The number of persons with syphilis or gonorrhea who remain under treatment until discharged by the clinic is almost negligible, and no systematic efforts have been attempted to examine the families of the infected patients. In this respect the experience of tuberculosis clinics, where efforts in that direction have become a part of the routine of procedure, may be pointed out as a possibility for larger prophylactic opportunities of the venereal disease clinics. It is imperative

that the venereal disease clinics have at their command larger physical facilities, as well as more clerical, nursing and social service assistance, in order that they may take a proper part in the campaign for the eradication of venereal disease.

XV. THE NURSING ORGANIZATION

The nursing personnel of dispensaries is generally inadequate. The nurses are chiefly found in the children's, gynecologic, surgical and tuberculosis departments. Other departments are handicapped by lack of nursing assistance. Moreover, the nurses are frequently called on to do other than purely nursing duties, and their assignment to the dispensary is often contingent on the needs of the hospital. The practice established in certain institutions in which a part of the course in the training school for nurses is devoted to dispensary work, should be generally adopted and arrangements made in such a way that each of the pupil nurses should have several months' experience in the dispensary, which would be of great value to her. The pupil nurses should remain under the direction of a head nurse designated from the training school for the direction and instruction of the pupils. If such an arrangement could be effected in all the outpatient departments connected with hospitals maintaining a training school, the nursing service in dispensaries could be made much more adequate and economical than it is now, as the number of graduate nurses should be reduced to a minimum of one in some of the dispensaries.

XVI. THE SOCIAL SERVICE DEPARTMENT

The social service department could best do its work if it were in close cooperation with the admitting and diagnostic departments of the institution. The patient's first contact should be either with the social service department, where on rapid questioning, certain facts required by law would be ascertained about his social history, before he proceeds to the diagnostic or other departments of the institution; or this function could be performed by a proper registrar who, when directing the patient to the diagnostic clinic, attaches to his history sheet a slip to be returned by the physician with a check mark indicating whether or not the services of the social service department are required in the case. Such a routine procedure would automatically call the physician's attention to the availability of social service. Likewise a method should be worked out whereby reports on cases that are referred by physicians would automatically be sent to them as soon as available.

Because of the underutilization of the dispensaries by certain racial groups in our population, as a result of their ill adaptation to the new environment, it is important that the social service department learn to meet the racial point of view of the patients, as well as to have some one who would obtain, when necessary, the desired information in the language of at least the major foreign group using the dispensary.

The social service workers are often called on to perform functions which are not within the range of activities which should properly belong to them. Because in New York the hospital social workers are almost invariably nurses, they are in some instances devoting a great deal of time to nursing work. This is particularly true of the pediatric and tuberculosis clinics. Likewise, while visiting patients in their homes, the social service workers undertake at times what is tantamount to public health nursing. Social service workers need not be nurses; and whenever patients require public health nursing, arrangements for it should be made by the social service department with the Visiting Nurses' Association or the department of health, just in the same manner as other agencies are called on when the nature and exigencies of a case call for a special service.

There is a need of a standard or uniform social service nomenclature to designate certain conditions or procedures. The terms used at the present time are often vague and do not convey the same meaning to all who consult or use the records. The records of the social service department should be uniform and contain a certain amount of indispensable information. Digests of them should be filed with the medical records. The original full records might then be kept in the social service department.

The social service department has become recognized as an important part of the dispensary and hospital organization, and should be administratively incorporated as an integral part of the institution. It should be responsible before the board of trustees just as the other departments are, and all funds that are collected for its maintenance, if there be any special need for soliciting funds for any special department of an institution, should be placed in the treasury of the institution and paid out to the workers in the same way as salaries in other departments. There is an advantage, however, in having advisory committees of interested persons to discuss cases and to bring all the outside points of view and facilities available to assist in the work. On such committees, however, there should be representatives of the boards of trustees, the administrative heads, such as the superintendent, the heads of the training school for nurses, and also a representation from the several departments of the medical organization.

The work of medical social service has as yet not reached a plane where it can be said to be standardized in its aims and methods. It is still in a formative state. There is need for a concentration of effort on the part of all those interested to secure a crystallization of function and procedure.

A central clearing house for social work might be attempted in order to standardize procedure, to make comparative studies of the work in the several institutions of the city, and to minimize the waste of money and effort by dividing the city into sections, so that workers from one institution would not need to visit patients in distant parts of the city, but could "clear" through such a central office. Such an arrangement should be rendered more feasible if standard methods and standard record forms were used.

The suggested central clearing office, with its accumulated wealth of material and experience, would also be in a position to formulate plans for instruction to be given to those who desire to enter the field of social service.

XVII. DISTRICTING THE CITY FOR CLINIC PURPOSES

In order that the dispensaries may become what it is possible for them to be, namely, important medical, public health and social centers in the community, in addition to a reform of the present point of view and of the present organization, there is a need of a better public appreciation of the scope and function of the dispensary and of a regional division of the city with regard to dispensary service.

The first could be accomplished through proper publicity on the part of the dispensaries, and by reports more informing than those published by most of the institutions. In reports the work could be presented and analyzed in an interesting and instructive way, and the costs per patient or per attendance figured in accordance with an accurate and uniformly applied system.

The districting of the city for dispensary purposes may be difficult, because of the uneven distribution of the institutions and because of the needs of teaching clinics which do not desire to be restricted. In addition, there are a number of special institutions which cannot easily be included in any plan for the division of territory; likewise, denominational institutions might find it difficult to join in a district arrangement.

The advantages which would, however, accrue from a regional distribution of responsibility make it desirable to try such an arrangement. At first, perhaps, certain departments could organize their work on a district basis, following the successful example of cooperation on the part of the tuberculosis clinics. The pediatric, venereal disease, obstetric, social service and preventive medicine departments might find it most advantageous to adopt the district division of the field. Other departments might follow later, if these experiments should prove satisfactory.

The successful experience of the Association of Tuberculosis Clinics in raising the standard of equipment and procedure is worth while considering, particularly in connection with the venereal disease clinics, in which the variations in standards and records are so great at present as to render comparisons of their work of limited value. With a pooling of interests, and a uniform system of reporting and of scoring, great improvement could be expected.

Of all the departments of general dispensaries, the tuberculosis clinics, although far from ideal, are undoubtedly the most efficient. It is true that they differ from other branches of the dispensary in that their primary function is education, supervision and the securing of a change in environment, while in most of the other departments, the primary object is treatment; but similar cooperative arrangements could be established in other branches.

The Associated Out-Patient Clinics of the City of New York is the logical body to take the initiative in such a plan and to provide leadership to bring about needed reform in the dispensary practice and organization of this city.

Medicolegal

Validity of Law Taking Away Right to Issue Certain Prescriptions

(*State v. Emonds* (Wash.), 182 Pac. R. 584)

The Supreme Court of Washington, in affirming a judgment of conviction of the defendant of the crime of issuing a prescription for intoxicating liquor after he had been twice convicted of unlawfully issuing such prescriptions, holds constitutional Section 8 of initiative measure No. 3, Laws of 1915, which, among other things, provides that it shall be unlawful for a physician, after he has been convicted a second time of a violation of the provisions of the act, thereafter to write any prescription for the furnishing, delivery or sale of intoxicating liquor. The defendant contended that the legislative power of the state, whether by initiative measure or an act passed by the legislature, could not deprive a regularly licensed physician of the right or privilege of prescribing intoxicating liquor as a medicine, if he believed the patient's condition required it, though it was admitted that for such offenses as that with which the defendant was here charged it would have been proper to deprive him of the right to practice medicine entirely. But the court says that no constitutional provision was called to its attention which it was contended that the law here assailed violated, and no authority was presented holding that the court may declare a legislative act invalid when it does not offend against some constitutional provision. The limitations on the legislative power must be found, if at all, in constitutional enactments, and not in the judgment or discretion of the courts. The law complained of was a valid exercise of legislative power. Nor was there any merit in the contention that, since the statute made it unlawful for a physician to issue a prescription for intoxicating liquor after having been twice convicted of unlawfully issuing such prescriptions, it was error to permit proof of more than that number. The state was not required to cease the introduction of proof when it had offered sufficient evidence to carry the case to the jury and sustain a conviction.

Excluding Children from School for Trachoma

(*Martin v. Craig et al.* (N. D.), 173 N. W. R. 787)

The Supreme Court of North Dakota, in affirming an order of the district court of La Moure County, quashing an alternative writ of mandamus that was issued on the petition of the plaintiff for a peremptory writ to compel the defendants to admit to school certain children, says that the defendants justified their refusal on the ground that one of the children had been found by a reputable physician and by a qualified representative of the federal health service to be afflicted with trachoma, and the other to present a case in which trachoma was suspected. It appeared that during the past few years the disease of trachoma had been present in La Moure County. The school nurse directed the attention of the county health authorities to a number of cases in which schoolchildren appeared to be affected with granulations of the eyelids; and, when some of them were examined by the superintendent of the county board of health, he diagnosed the cases as trachoma. When examined by other physicians, however, and even by representatives of the state public health laboratory, the finding was negative as to trachoma. In some of the cases that had been pronounced trachoma by the superintendent of the county board of health, and not trachoma by the representatives of the public health laboratory, the patients were sent to the government hospital at Pikeville, Ky., for treatment, and the diagnosis was trachoma. There being a number of persons afflicted with this or similar eye trouble, representations were made by the governor of the state to the federal Public Health Service, which resulted in a survey being made by a representative of the latter service, who reported that he found in La Moure County 120 positive and 350 suspicious cases of trachoma. As a result of this survey, a government hospital was established at La Moure, in which patients afflicted might be given the advantage of scientific treatment without charge. Moreover, to prevent the spread of the disease and to secure proper treatment for those affected, the county board of health promulgated an order forbidding admission to school of children who, on examination, were found to be or were suspected of being afflicted, unless they were at the time under treatment for the disease.

In this case the plaintiff produced two physicians who presented what are generally considered to be first-class professional credentials qualifying them to give expert testimony. They had also had ample opportunity to examine the patients and to diagnose the cases. In fact, the children had been patients of one of the physicians. These physicians testified that the children were not afflicted with trachoma, but with folliculosis. One of them also testified that it was injurious to the eye to treat it for trachoma when trachoma was not present; but a careful reading of his testimony disclosed that the injury resulted from a species of treatment that was likely to be resorted to only when the disease was clearly present and when the necessity for radical treatment was indicated. When qualified physicians disagree on the diagnosis of a diseased condition of particular persons, the health authorities and a school board, whose duty it is to execute the orders of the board of health, are justified in acting on the opinion of their own competent experts.

The order of exclusion in this case could not be said to be unreasonable. It excluded only those whose cases were positive and suspected, who were not at the time under treatment. The seriousness of the disease and its communicable character afforded ample foundation for such an order; and, even conceding that it might be doubted in the present case whether the children in question were affected, the doubt was one that must be resolved in favor of the authorities charged with the serious responsibility of preventing the spread of the disease. This was a case in which mandamus would not issue as a matter of right, but wherein it would issue only in the exercise of a judicial discretion; and this discretion should not be exercised in a way that might result in needlessly exposing healthy children to a disease as serious as trachoma.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

February, 1920, 19, No. 2

- *Etiology of Arthritis Deformans in Children. A. H. Byfield, Iowa City.—p. 87.
*Calcium Metabolism of Infants and Young Children, and Relation of Calcium to Fat Excretion in Stools. L. E. Holt, A. M. Courtney and H. L. Fales, New York.—p. 97.
*Incidence of Protein Sensitization in Normal Child. H. M. Baker, Boston.—p. 114.
Foreign Bodies in Air and Food Passages: Report of Cases. E. E. Graham, Philadelphia.—p. 119.
*Auriculoventricular Heart Block in Children: Report of Case. J. A. E. Eyster and W. S. Middleton, Madison, Wis.—p. 131.
Abscess of Lungs in Infants and Children. H. Wessler and H. Schwartz, New York.—p. 137.
*Elimination of Acetone Bodies During Infectious Fevers. B. S. Veeder, St. Louis, and M. R. Johnston, M. C., U. S. Army.—p. 141.
Two Cases of Congenital Stricture of Esophagus. J. L. Morse, Boston.—p. 144.
Recent Work in Anatomy, Physiology and Pathology of Infancy and Childhood. J. B. Holmes, Baltimore.—p. 148.

Arthritis Deformans in Children.—From a study of cases Byfield concludes that arthritis deformans in children results chiefly from a chronic infection situated in the tonsils and adenoids and in the accessory sinuses of the nose. In children less than 3 years of age, the portal of infection seems to be limited to the tonsils and adenoids. After this time removal of tonsils and adenoids is ineffective in arresting the progress of the disease. A sinus infection should be suspected as an etiologic factor if, after the tonsils and adenoids are removed, there remains elevation of temperature (even if slight), leukocytosis, poor appetite, together with a slowness of the joints to become less painful and swollen. Relapse and exacerbations are definite indications of the need of nasal treatment. Byfield believes that Poncet's disease is probably no more than arthritis deformans in an individual infected with tuberculosis. Although supportive and orthopedic measures are helpful, surgical treatment of the nasal sinuses is to be regarded as the most important therapeutic measure indicated in arthritis deformans in children. The prognosis in uncomplicated cases is good as far as arrest of the disease is concerned. The deformity and functional disability may persist for a considerable time.

Calcium Metabolism of Infants.—The average absorption of calcium oxid by healthy infants taking modifications of cow's milk was 0.09 gm. per kilogram of body weight. Since the average absorption of calcium oxid by breast fed infants was about 0.06 gm. per kilogram, it may be assumed that 0.06 gm. per kilogram is the minimum normal absorption by infants taking modifications of cow's milk. The excretion and the absorption of calcium were, in general, dependent on the amount of calcium intake, from 35 to 55 per cent. of the intake being absorbed. The calcium absorption was much lower when diarrhea was present. With an increased excretion of calcium in diarrheal stools, there was a marked decrease in soap excretion. The calcium absorption by rachitic infants was much lower than that by healthy infants. In the few cases in which observations were made on infants recovering from rickets, the calcium absorption was higher than the normal average. These infants had received cod liver oil for a considerable period. The administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present.

Protein Sensitization.—Baker's studies show that the incidence of food sensitization of apparently normal children is almost a negligible factor, except in the case of salmon, which reaction in any case cannot be considered as an absolute indication of sensitization. The articles of diet most commonly causing disturbance in children presenting anaphylactic symptoms are: oatmeal, potato, eggs, peas, rice, casein, beef juice and chicken. This does not mean that a child with anaphylactic symptoms is not capable of taking any one or all of these articles of diet. Only a careful examination can

reveal the causative factor. In many instances it is only one food, while it may be several.

Heart Block in Child.—A case is described by Eyster and Middleton of partial auriculoventricular dissociation developing in a child, aged 2 years, apparently associated with an acute nasal and throat infection. This child has been under observation for more than two years. At present the cardiac condition is that of a well compensated mitral lesion, associated with a 2:1 auriculoventricular block, with a ventricular rate between 50 and 60. The child has developed normally, and is at present in apparent good health and is normally active. A search of the literature revealed twenty reported cases of heart block in children. Nearly all of these were definitely or probably of congenital origin or occurred during the course of severe and usually fatal diphtheria. The reported case is regarded as being of particular interest in reference to its probable origin and the relatively mild clinical disturbance produced by the condition.

Acetone Bodies in Infectious Diseases.—Observations were made by Veeder and Johnston on forty-one children with scarlet fever, diphtheria, measles and pneumonia. The findings show that while an increased elimination of acetone bodies may occur in the infectious diseases, this does not always take place; that in the same patient it may occur during one infection and not during a second; that it is not dependent on the severity of the infection or the degree of temperature; and lastly, that the decreased intake of food, so consistently a part of an infectious process, does not explain the causation.

Archives of Neurology and Psychiatry, Chicago

February, 1920, 3, No. 2

- *Diagnosis of Peripheral Nerve Injuries. S. D. Ingham and J. H. Arnett, Philadelphia.—p. 107.
*Nature of Aurae. L. B. Alford, St. Louis.—p. 124.
*Histopathology and Histogenesis of Syringomyelia. G. B. Hassin, Chicago.—p. 130.
*Analysis of Blood of Insane Patients. P. G. Weston, Warren, Pa.—p. 147.
Splints Used for Peripheral Nerve Cases at U. S. Army General Hospital, No. 11. R. C. Buerki, Boise, Idaho.—p. 151.
*Case of Meningo-Encephalitis (Lethargic Encephalitis). W. W. Hala and C. M. Smith, Brooklyn.—p. 160.

Diagnosis of Peripheral Nerve Injuries.—The authors discuss at length the factors concerned in the diagnosis of peripheral nerve lesions, the production of compensatory movements, and the lesions of individual nerves considered in reference to compensatory movements and other phenomena. They emphasize the importance of careful observation to avoid errors in diagnosis, especially in the atypical cases, which are the ones that offer the greatest difficulties in neurosurgical diagnosis. The fundamental requisites for accurate diagnosis include a thorough anatomic knowledge, a mastery of the mechanics of joint action and discriminating observation. With the application of these broad principles to neurosurgical diagnosis, the difficulties are minimized and the proper treatment can be instituted.

Nature of Aurae.—Alford attempts to point out anew the analogy between aurae and the hallucinations occurring in connection with sleep, hypnosis, crystal gazing, etc. According to this view, he says, aurae should be regarded not as the result of "discharges" of an epileptic nature in some part of the cortex, but as deficiency reactions, like dreams, occurring when there is a "disturbance of consciousness" of a certain type. Their relation to the loss or disturbance of consciousness in epilepsy and migraine is assumed to be the same as that of dreams to drowsy or sleep states; and their content should be regarded as being determined by the same factors that determine the content of dreams and similar hallucinations. Their relation to structural changes may be the same as that of those hallucinations which develop in connection with disease of the organs of special sense or of the nerves connecting them with the brain.

Pathogenesis of Syringomyelia.—From the study of his own case and of previous contributions to this question, the conclusion is drawn by Hassin that in syringomyelia there are a number of specific pathologic changes which differ

totally from those to be found in any other spinal cord lesion—changes which stamp syringomyelia as a distinct anatomopathologic entity. A very full report is made of the results of the microscopic examination of the spinal cord in the author's case.

Blood of Insane Persons.—The blood of thirty insane patients, selected cases of dementia praecox, epilepsy and manic-depressive insanity, was examined by Weston to determine the chlorin and urea nitrogen content. No deviation from the normal content of total nitrogen, nonprotein nitrogen, uric acid, urea, creatinin, creatin, glucose, chlorin or calcium was found.

Meningo-Encephalitis.—The case reported by Hala and Smith was interesting because it displayed not only the characteristic histopathologic lesions observed in the brain by others, but also on account of the intense purulent meningitis and ependymitis found at necropsy. The fact that an organism was isolated both antemortem and postmortem, which evidently was the etiologic factor concerned, is noteworthy. From the clinical standpoint the case was one of meningo-encephalitis, with lethargy and involvement of the motor fibers of the third, sixth, seventh, tenth and twelfth cranial nerves. The etiologic cause was a gram-negative motile bacillus, unidentified, but probably belonging to some intermediate class of the colon-typhoid-enteritidis group. Pathologically, the lesion demonstrated septic meningo-encephalitis and ependymitis, with punctate hemorrhages and perivascular cell infiltration of the centrum ovale, corpus striatum and optic thalamus.

Archives of Ophthalmology, New York

January, 1920, 49, No 1

- Teaching of Ophthalmology. F. H. Verhoeff, Boston.—p. 1.
Postgraduate Teaching of Ophthalmology. M. Wiener, St. Louis.—p. 9.
Postgraduate Course in Ophthalmology. A. Duane, New York.—p. 17.
Epithelial Inlay and Outlay in Lid Repair. S. H. McKee, C. A. M. C.—p. 30.
War Injuries of Eyelids. J. M. Wheeler, Ft. McHenry, Md.—p. 35.
Vernal Conjunctivitis. W. H. Luedde, St. Louis.—p. 43.
Routine Office Measurement of Stereopsis. D. W. Wells, Boston.—p. 64.
Motor Muscles of Eye. E. H. Hazen, Des Moines.—p. 70.
Nature of Trachoma; Normal Histology of Conjunctiva. K. Hiwatari, Kyoto, Japan.—p. 82.
Case of Atypical Albuminuric Retinitis. C. A. Clapp, Baltimore.—p. 98.

Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1920, 6, No. 7

- Diagnosis of Upper Abdominal Symptoms. H. C. Dozier, Ocala.—p. 132.
Doctor and Druggist. W. M. Hankins, Daytona.—p. 138.

Journal of Abnormal Psychology, Boston

October, 1919, 14, No 4

- Psychogenesis of Multiple Personality. M. Prince, Boston.—p. 225.
A Divided Self. C. E. Cory, St. Louis.—p. 281.
Problems in Sex Education. H. W. Brown.—p. 292.

Journal of Bacteriology, Baltimore

November, 1919, 4, No. 6

- *So-Called Reduced Oxygen Tension for Growing Meningococcus. E. F. Kohman, Camp Jackson, S. C.—p. 571.
Nomenclature of Actinomycetaceae. R. S. Breed and H. J. Conn, Geneva, N. Y.—p. 585.
*Culture Medium for Maintenance of Stock Cultures of Bacteria. M. C. Worth, Detroit.—p. 603.
Value of Presumptive Tests for Coli Based on Routine Use of Lactose Bile and Lactose Broth. N. Ritter, Lawrence, Kan.—p. 609.
Morphologic Changes During Growth of Bacteria. P. F. Clark and W. H. Ruehl, Madison, Wis.—p. 615.

So-Called Reduced Oxygen Tension for Growing Meningococcus.—Experiments were made by Kohman to determine the rôle that carbon dioxide plays in the cultivation of the meningococcus. He found that by making defibrinated human blood agar medium with a p_{H_2} of from 7.8 to 8.0, and incubating the meningococcus in a partial atmosphere of carbon dioxide, the same medium may be used for this organism which is used for the pneumococcus and the streptococcus.

Culture Medium for Maintenance of Stock Culture of Bacteria.—A medium of the following composition Worth found favorable for the preservation of *B. typhosus*, *B. paratyphosus*, *B. coli*, *B. dysenteriae*, *B. pertussis*, *Micrococcus catarrhalis*, a streptococcus, and the meningococcus and gonococcus for several months without transfer: Nutrient gelatin: chopped beef, 500 gm.; water, 1,000 c.c. Heated in a water bath (50-55 C.) for one hour. Strain through a bag cloth, the volume being restored: peptone, 10 gm.; sodium chlorid, 5 gm.; gelatin, 100 gm. Dissolve, filter, adjust to 1 per cent. acid. Sterilize for twenty minutes at 100 C. Inoculation is made and the cultures are placed at 37 C. for twenty-four hours after which they are stored at 20 C. with the exception of the meningococcus and gonococcus which are kept at 37 C. Without further attention *B. typhosus* retains its viability, characteristic appearance, and agglutinating power for eight months; *B. coli* for eleven months; meningococcus for eight months; *B. paratyphosus*, *B. pertussis* and *B. dysenteriae* for eight months. The streptococcus was still in good condition at the end of four months.

Journal of Infectious Diseases, Chicago

February, 1920, 26, No. 2

- *Varieties of Streptococci with Special Reference to Constancy. B. J. Clawson, Chicago.—p. 93.
*Human Fecal Streptococci. C. J. Oppenheim, Chicago.—p. 117.
*Some Factors Influencing the Potency of Concentrated Antitoxic Serum. C. R. Hixson, Woodworth, Wis.—p. 130.
Influence of Normal Beef Serum on Anthrax Bacillus. J. A. Kolmer, D. C. Wanner and M. F. Koehler, Philadelphia.—p. 148.
*Some Factors Influencing the Final Hydrogen Concentration in Bacterial Cultures with Special Reference to Streptococci. H. Jones, Chicago.—p. 160.
Effect of Pasteurizing Temperatures on Paratyphoid Group. E. M. Twiss, Chicago.—p. 165.
*Fate of Streptococcus Hemolyticus in the Gastro-Intestinal Canal. D. J. Davis, Chicago.—p. 171.
*Influence of Brilliant Green on Diphtheria Bacillus. J. A. Kolmer, S. S. Woody and E. M. Yagle, Philadelphia.—p. 179.

Varieties of Streptococci and Constancy.—The work reported by Clawson deals with the characteristics of strains of streptococci isolated from various sources. Particular attention is given to the constancy of the special characteristics of streptococci, such as peculiarities in morphology, the action on the blood-agar plate, the fermentation of the various carbohydrates, and the immune reactions, such as agglutination and complement fixation.

Human Fecal Streptococci.—Mannite fermenting nonhemolytic streptococci, according to Oppenheim, are the characteristic predominant types found in the feces of normal individuals. The "indifferent" variety of streptococcus in the feces of normal persons is inconstant in its indifference to the formation of green; green formation would seem to be favorably influenced by the alkalinity of the mediums. Hemolytic streptococci are but exceptional findings in the stools of normal, healthy people, and are inconstant in occurrence. No apparent morphologic characteristics, aside from those dependent on rapid, luxurious growth, characterize the human fecal streptococci.

Potency of Concentrated Antitoxic Serum.—The experiments reported by Hixson were designed to investigate the influence of heat on the antitoxic content of the globulin fraction.

Final Hydrogen-Ion Concentration in Bacterial Cultures.—Jones' results show that, to obtain any accurate information regarding the final hydrogen-ion concentration of an organism, a number of factors should be taken into consideration. This characteristic, the limiting hydrogen-ion concentration of a given organism, to have any significance or subsequent application should be defined in terms of the composition of the medium, the initial reaction and any other conditions which favor or hinder abundant growth of that organism.

Streptococcus Hemolyticus in Digestive Canal.—Examination of the gastro-intestinal canal at various levels in rabbits fed hemolytic streptococci showed that this organism does not develop appreciably in the intestine, nor does it readily gain a permanent foothold there. Rabbits with generalized streptococcus infection in joints, blood, etc., showed no

hemolytic streptococci in the intestinal contents. Gastric juice of normal acidity from man and from rabbits kills these hemolytic micro-organisms in from two to five minutes. Gastric juice in achylia may not kill them in several hours. In normal human feces hemolytic streptococci were not found by Davis in fifty-three cases. Hemolytic streptococci when mixed with normal feces will live in the icebox for at least several days. In the incubator they tend to die out rapidly.

Effect of Brilliant Green on Diphtheria Bacillus.—Brilliant green was found highly bactericidal and antiseptic for a virulent diphtheria bacillus in vitro by Kolmer and his associates; the presence of blood and serum in the medium reduced the bactericidal activity. The dye was found also highly bactericidal and antiseptic for staphylococci. Brilliant green possesses much less bactericidal and antiseptic activity for *B. typhosus* and *B. coli*, particularly for the former. The use of brilliant green in the treatment of carriers of diphtheria and pseudodiphtheria bacilli usually resulted in the temporary disappearance of these bacilli from the nose, throat and ears of the treated persons; permanent ridding of these tissues of the bacilli, however, was not observed. Owing to the high bactericidal activity of brilliant green for *B. diphtheriae* and such pathogenic cocci as staphylococci, streptococci and pneumococci, the authors suggest the probability that the clinical use of a 1:250 solution of the drug in water may prove of value in the local treatment of infections caused by these organisms.

Medical Record, New York

January, 1920, 97, No. 3

- Diagnostic Pitfalls in Pulmonary Tuberculosis. M. Fishberg, New York.—p. 89.
Genesis and Diagnosis of Mental Diseases. E. Brodsky, Westport, Conn.—p. 94.
*Reflex Phenomena in Influenza Cases. S. Ginsburg, New York.—p. 98.
Roentgenography in Artificial Pneumoperitoneum. A. S. Hyman, Dorchester.—p. 100.
Community Health Units and Health Insurance. A. C. Burnham, New York.—p. 103.
Legislative History of Compulsory Insurance in State of New York. J. P. Davin, New York.—p. 105.
Lapsus of Memory. H. Laveson, New York.—p. 106.

Reflex Phenomena in Influenza Cases.—The two chief characters which Ginsburg observed in his cases were: 1. The almost constant presence of pleuropulmonary involvement in every case of pandemic influenza, no matter how mild the clinical course of the disease. 2. The almost invariable accompaniment of reflex phenomena in the neck, chest, abdomen, or back, whenever pleuropulmonary involvement was found on physical examination, at some time during the course of the disease. Ginsburg says, that it was striking to find patient after patient, on the first day of the disease, complaining of reflex pain with no lung signs, and, then later to develop pleuropulmonary signs in accordance with the reflex phenomena. Frequently, on further investigation of the case, he was able to find the proof that a diseased viscus was responsible for the visceromotor and viscerosensory phenomena.

Missouri State Medical Ass'n Journal, St. Louis

February, 1920, 17, No. 2

- Preventive Medicine and War. M. P. Ravenel, Columbia.—p. 49.
Acute Empyema; Diagnosis and Treatment. W. T. Coughlin, St. Louis.—p. 56.
Treatment of Empyema by Carrel-Dakin Method. H. E. Happel, St. Louis.—p. 59.
*Primary Carcinoma of Nasopharynx; Report of Case. O. A. Smith, Farmington.—p. 62.
Hysteria. T. F. Lockwood, Butler.—p. 63.
Ear, Nose and Throat Service in a Base Hospital. S. S. Burns, St. Louis.—p. 69.

Primary Carcinoma of Nasopharynx.—A woman, aged 31 years, had had trouble with her nose for about one year when Smith saw her. Anterior rhinoscopy was practically negative. Posterior rhinoscopy revealed a mass in the vault of the pharynx resembling to some extent adenoids, but seemed too firm for adenoids, was irregular and presented a fungous arrangement. This mass occupied almost the entire vault so that the obstruction to breathing through the

nose was quite complete. Glandular enlargements to the size of hazelnuts were noticeable along the sternocleidomastoid muscle on both sides of the neck. Blood examination revealed a leukocytosis of 12,000; hemoglobin 70 per cent. Blood Wassermann was negative, urine normal. The mass was removed and it proved to be a carcinoma. A large swelling developed under the angle of the right jaw. The glands extending down the right side of the neck to the clavicle were immensely enlarged, attaining the size of a small coconut and other masses of enlarged glands developed, some of them on the lower extremities. The masses on the neck and limb broke down and a septic condition developed with chills and fever. Nausea and vomiting began soon and continued until her death, seven months after operation.

Neurological Bulletin, New York

September, 1919, 2, No. 9

- *Aneurysm in Posterior Cranial Fossa. H. S. Howe, New York.—p. 323.
*Chronic Nondegenerative Hereditary Chorea. I. S. Wechsler, New York.—p. 329.
Traumatic Neurosis. M. Osnato, New York.—p. 334.
Traumatic Hysteria. M. Osnato, New York.—p. 341.
*Cerebral Glioma and Acute Hemorrhagic Encephalomyelitis. H. S. Howe, New York.—p. 349.

Aneurysm of Right Vertebral Artery.—Analysis of his findings leads Howe to conclude that the diagnosis of intracranial aneurysm in his case was reasonably certain on consideration of the clinical history and the neurologic findings. The history was that of irritation and later paralysis of the right seventh, eighth, tenth, eleventh and twelfth nerves. These lesions could be produced by a new growth, a basilar meningitis or an aneurysm of the vertebral arteries, but it is not probable that a new growth in this locality of four years' duration could produce this group of findings without also causing compression of the medulla or cerebellum and signs of increased intracranial pressure. Basilar meningitis was excluded by the negative serologic findings. A murmur was heard, and while murmur alone is not pathognomonic of aneurysm, in conjunction with other findings it does indicate aneurysm, and in this case it lead Howe to make a diagnosis of aneurysm of the right vertebral artery originating at the junction of this vessel with its largest branch, the posterior inferior cerebellar.

Chronic Nondegenerative Hereditary Chorea.—Wechsler reports the case of a young woman, aged 36, who had been suffering from a chronic nonprogressive chorea for sixteen years. Her father undoubtedly had chorea for twenty years, but, apparently, it was not degenerative in character. One brother had "shakings" of the arms; one daughter was "nervous"; two boys had chorea, one of them a severe form which had lasted almost three years with some mild remission, the other a continuous mild form, also of three years' duration. The clinical picture of the patient herself was typically huntingtonian in behavior. There was no doubt about the hereditary nature of the condition, three generations showing chorea of a continuous and prolonged nature. But, the patient did not show two of the most prominent symptoms which go with a Huntington's chorea. The patient's condition is not progressive, in fact, it is stationary, if not somewhat better; she has no defective mentality, not to speak of even an approach to dementia. Her attention alone is defective. She has attacks of fainting or so-called spells of weakness, which speak in its favor, but there is nothing else, either of psychic or somatic nature, to confirm that diagnosis; nor would a hysterical condition be compatible with chorea. Chorea gravidarum is a remote possibility in this case as the condition began ostensibly with a miscarriage, but that type of chorea usually stops with the emptying of the uterus and only rarely becomes chronic. Also it is never hereditary. Senile chorea is out of the question. Paramyoclonus multiplex is ruled out because of the absence of the lightning-like rapidity and universality of contraction found in this disease, and the bizarre character of gait, facial and tongue movements, and the hereditary or familial attributes are lacking.

Cerebral Glioma and Encephalomyelitis.—The antemortem diagnosis of epidemic encephalitis made by Howe was not

confirmed at the necropsy. A glioma of the right cerebral hemisphere and a hemorrhagic encephalomyelitis were found. The existence of the glioma, although it was of large size, had never been suspected as it had caused neither general symptoms nor focal signs.

New York Medical Journal

Jan. 17, 1920, 14, No. 3

- Acquired Retrodisplacements of Uterus. J. O. Polak, Brooklyn.—p. 89.
Technic of Tonsillectomy in Use at Camp Hancock Army Hospital, 1918. G. M. Coates, Philadelphia, and M. Raskin, Baltimore.—p. 92.
*Ligation of Internal Iliac Artery in Gynecologic Operations. R. Massart, Paris.—p. 94.
Hemostasis Obtained with Small Rubber Bands Instead of Ligatures. A. L. Soresi, New York.—p. 96.
Case of Dwarfism in Twins. H. Goldstein and M. Schneek, New York.—p. 97.
History of Patients Suffering from Rectal Disorders in Relation to Diagnosis. A. A. Landsman, New York.—p. 100.
Analysis of Eighty Cases of Bronchial Asthma. A. Sterling, Philadelphia.—p. 104.
Poland World War, from Medical Aspect. F. A. Fronczak, Buffalo.—p. 107.
Sarcoid Tuberculosis of Skin. C. G. Cumston, Geneva, Switzerland.—p. 112.

Ligation of Internal Iliac Artery in Gynecologic Operations.—According to Massart, ligation of the internal iliac artery, in extensive abdominal hysterectomy for cancer of the neck of the uterus, is at times indispensable; at least, it is to be advised in the majority of cases. This ligation affects all of the territory irrigated by the branches of the internal iliac artery, including the uterine artery. It prevents oozing in the vaginal section, facilitates the maneuvers of liberating the ureters, and relieves the surgeon from caring for a long and minute hemorrhage. Massart practices Faure's ligation of this vessel.

New York State Journal of Medicine

January, 1920, 20, No. 1

- Neurologic Cases with Eye Manifestations. W. B. Weidler and J. M. Joughin.—New York.—p. 1.
Treatment of Cancer of Uterus. H. C. Taylor, New York.—p. 8.
Cautery Methods in Treatment of Uterine Cancer. V. L. Zimmermann, Brooklyn.—p. 11.
Social Insurance. H. L. Winter, Cornwall.—p. 15.
Development of State Departments of Health in Relation to Health Insurance and Industrial Hygiene. A. B. Wadsworth, Albany.—p. 21.

Northwest Medicine, Seattle, Wash.

January, 1920, 19, No. 1

- Septic Bone Infections with Special Attention to Osteogenesis in Sepsis. E. A. Rich, Tacoma.—p. 1.
*Surgical Treatment of Trifacial Neuralgia. A. W. Adson, Rochester, Minn.—p. 6.
Eighteen Months' Experience with Radium. A. Jordan, Seattle.—p. 11.
Surgery Versus Radium or Roentgen Ray in Treatment of Uterine Fibroids. A. A. Matthews, Spokane.—p. 15.
Bacteriology of Influenza. M. E. Steinberg, Portland.—p. 18.
Discrepancies and Standardization of Wassermann Test. G. Hollister, Spokane.—p. 21.
Use of Dionin in Wood Alcohol Blindness. R. A. Fenton, Portland.—p. 22.

Surgical Treatment of Trifacial Neuralgia.—After dividing the posterior root in sixty-seven cases of trifacial neuralgia during the last two and one-half years, Adson is convinced that patients can be relieved of this disease by this procedure without any serious complications, and he strongly advocates that patients be encouraged to have the radical operation performed in preference to the alcohol injection or avulsion of the peripheral branches, unless there is some doubt concerning the diagnosis, or if the patient is a poor operative risk, or requires preliminary preparation.

Ohio State Medical Journal, Columbus

Jan. 1, 1920, 16, No. 1

- Pre-Operative Treatment of Hyperthyroidism. W. D. Haipes, Cincinnati.—p. 7.
Value of Pain as Symptom. L. Baxter, Newark, Ohio.—p. 11.
Clinical Serology in Relation to Disease of Eye, Ear, Nose and Throat. O. Berghausen, Cincinnati.—p. 14.
Otolaryngological Work at Hospital for Head Surgery, Cape May, N. J. J. M. Ingersoll, Cleveland.—p. 17.
Results of Routine Wassermann Tests in Children. C. I. Spahr, Columbus.—p. 21.

- Enlarged Thymus; Symptoms and Treatment. E. R. Brooks, Cleveland.—p. 23.
Value of Public Health Nurse to Community. H. R. Stewart, New York.—p. 26.

Public Health Journal, Toronto

January, 1920, 11, No. 1

- Preparation of Smallpox Vaccine. J. G. Fitzgerald, Toronto.—p. 585.
Some Successes and Some Failures of Medical Profession. W. B. Moore, Kentville, N. S.—p. 590.
Plan for More Effective Federal and State Health Administration. F. L. Hoffmann, Newark, N. J.—p. 597.
Prostitute as Health and Social Problem. R. S. Yarros, Chicago.—p. 606.
Poverty as Factor in Disease. C. E. A. Winslow, New York.—p. 612.

Southwestern Medicine, El Paso

January, 1920, 4, No. 1

- Paraffin Wax Method of Treatment of Burns. C. G. McMahon, Miami.—p. 1.
Roentgen Ray and Radium Actions and Reactions. A. Soiland and C. W. Stewart, Los Angeles.—p. 7.
Oral Infection and Systemic Disease. E. J. Cummins, El Paso.—p. 12.

Surgery, Gynecology and Obstetrics, Chicago

February, 1920, 30, No. 2

- *Plastic Surgery of Facial Burns. H. D. Gilles, Sidcup, England.—p. 121.
Gunshot Fractures of Femur. A. Bowlby, London.—p. 135.
*Postoperative Tetanus. R. R. Huggins, Pittsburgh.—p. 142.
Ununited Fractures of Hip. M. S. Henderson, Rochester.—p. 145.
*Operation for Advanced Carcinoma of Tongue or Floor of Mouth. V. P. Blair, St. Louis.—p. 149.
Acute Empyema of Throat Treated by Minor Intercostal Thoracotomy. P. W. Aschner, New York.—p. 154.
*Operative Treatment of Advanced Pulmonary Tuberculosis. W. Meyer, New York.—p. 161.
*Rapid Expulsion of Placenta. G. Sklavounos, Athens, Greece.—p. 168.
Sterility. B. Solomons, Dublin, Ireland.—p. 173.
*Safety Factors in Surgery, with Especial Reference to Blood. L. Frank, Louisville.—p. 182.
*Bilocular (Hour Glass) Stomach. V. Pauchet, Paris.—p. 190.
Bone Changes in War Amputation Stumps. T. G. Orr, Kansas City.—p. 195.
*Cysticercus Racemosus (Taenia Solium) Infection of Spinal Cord. A. R. Kimpton, Boston.—p. 198.
Plastic Repair of Hard Palate for Loss of Substance from Gunshot Wound. F. H. Albee, New York.—p. 201.
*Epididymectomy, an Improved Technic. M. Stern, New York.—p. 205.
Prostatic-Ambulant Postoperative Management. A. E. Rockey, Portland, Ore.—p. 206.
New Cystoscopic Table. H. L. Kretschmer, Chicago.—p. 207.
*Rammstedt Operation in Adult. H. F. Graham, Brooklyn.—p. 208.
*Use of Intramedullary and Extracortical Beef Bone Splints in Repair of Fractures of Long Bones. A. C. Brenizer, Charlotte, N. C.—p. 209.
Large and Small Doses of Radium. C. W. Hanford, Chicago.—p. 210.
Presentation of a New Pan Device on a Cystoscopic Table. C. S. Levy, Baltimore.—p. 212.

Plastic Surgery of Facial Burns.—The result of various plastic methods employed by Gillies for the relief of the distressing deformities and disabilities arising as the result of contractions following severe facial burns are described in detail in connection with case reports.

Postoperative Tetanus.—In the case cited by Huggins, one of complete removal of the uterus and appendages the patient developed symptoms which were typical of tetanus but bacteriologic proof could not be obtained. Smears and cultures were made from the abdominal wound which had healed without any evidence of infection. Cultures were also made from the vagina. No growth could be obtained which in any way resembled the tetanus bacillus. This was true also of the catgut used at operation. A study of the spinal fluid was also negative. The case suggests the possibility of false tetanus under certain circumstances.

Operation for Cancer of Tongue.—The operation described by Blair is said to be properly applicable to the more advanced cases, especially those that also involve the jaw, the floor of the mouth or the base of the tongue, or those with palpable involvement of the submaxillary nodes, and to early cases in which, after removal by a less radical procedure, examination reveals a high grade malignancy. It consists in the block removal from below of the tongue, the structures in the floor of the mouth, all muscles above the body of the hyoid bone and stylohyoid muscles, the submaxillary and submental lymph nodes and as much of the

ucial pillars and pharynx as desired, together with thorough cauterization of the mandible wherever the ulcer approaches or involves it. The mandible is not divided.

Extrapleural Thoracoplasty in Pulmonary Tuberculosis.—Feyer discusses his experience with extrapleural thoracoplasty in suitable patients with advanced tuberculous affection of the lung, in whom therapeutic pneumothorax is not feasible.

Rapid Expulsion of Placenta.—The injection of salt solution into the placenta through the omphalic veins in the cord was tried in thirty hospital cases at the suggestion of Sklavounos. The placenta was expelled spontaneously within from three to five minutes, and without any other manipulation. In a few instances the injection was not entirely successful and the Credé method had also to be used. The failures were due to imperfections in technic. The method is said to be superior to the Credé method and to manual removal. The necessary instruments are: (1) an ordinary syringe; (2) a metallic cannula attached to the distal end of the rubber tube (this cannula must have a perimeter of 5 cm. and a groove behind the lumen to prevent slipping of the cord when attached to the cannula); (3) a pair of scissors and a clamp. Fifteen or 20 gm. of salt are added to 500 c.c. of sterilized hot water (temperature 50 to 60 C.). The cannula is inserted in the immobilized lumen of the vein and the vein is tied about the groove in the cannula. The salt solution is injected into the vein which swells and takes on a white instead of the previous blue color. The swelling of the arteries proves that the injection has been successful. As soon as 200 c.c. of the salt solution is injected, detachment of the placenta begins. When water comes from the arteries, they are pressed with a clamp and the result of the injection is waited for. To prevent formation of clots in the vessels and facilitate the circulation of the injected fluid, Sklavounos adds 2 per cent. sodium nitrate to the salt solution.

Safety Factors in Surgery.—Frank's observations lead him to conclude that a patient is not in the best possible condition to undergo any surgical procedure when he has a hydrogen-ion concentration of his blood below p_{H} 7.35; a carbon-dioxid tension in the alveolar air below 35; a soda tolerance test above 15; an Ambard coefficient above 0.10; a urine which shows but little variance in quantity from day to day and with the specific gravity varying less than seven points, regardless of the intake; also nocturnal polyuria; a phenolphthalein output below 40, unless it can be accounted for by disease of other organs, the liver particularly.

Bilocular Stomach.—Pauchet has operated in twenty-five cases of bilocular stomach, a resection being done in twenty-three cases. These operations were divided as follows: one gastroplasty; two gastrogastrotomies; either alone or associated with a gastro-enterostomy; four mediogastric resections, and eighteen pylorogastrectomies. He has reoperated on two patients on whom a pyloroplasty, gastrogastrotomy and gastro-enterostomy had been performed. These operations resulted in two deaths; one case was complicated by a perigastric abscess and in the other there was an extensive perforating ulcer. These operations were performed under regional or spinal anesthesia with or without several whiffs of nitrous oxid for several seconds. Pauchet says that the extensive resections have given by far the best end-results.

Tenia Solium in Spinal Cord.—Kimpton is of the opinion that his case is the first in this country and the only case where a pork tapeworm has been removed successfully from the spinal cord during life. Mercur found a similar tumor of the spinal cord, but at necropsy. A diagnosis of spinal cord tumor at the fourth or fifth dorsal segment had been made in Kimpton's case and operation was advised. A laminectomy was done on the fourth, fifth and sixth dorsal vertebrae and the cord exposed. There was a distinct difference in the tension of the cord. The tension appeared to be greater, and the cord was paler in this region. The cord membranes were incised and this revealed a translucent tumor. The tumor was easily shelled from the cord. It appeared as a gelatinous mass. The pathologic diagnosis was cysticercus racemosus.

Epididymectomy.—Stern separates the epididymis from the blood supply of the testis by careful dissection and then ligates the epididymis.

Rammstedt Operation on Adult.—Graham reports a case of pylorospasm in a man, aged 46. Operation produced a cure.

Beef Bone Splints.—Brenizer discusses the use of beef bone splints and cylinders which have been boiled and kept in alcohol until every organic living cell is dead.

Texas State Journal of Medicine, Fort Worth

January, 1920, 15, No. 9

- Influenza; Its Complications and Sequels. A. Woldert, Tyler.—p. 315.
Influenza Echoes and Experiences. J. M. Frazier, Belton.—p. 321.
Future of Tuberculosis. H. F. Gammons, Dallas.—p. 323.
Some Predisposing Factors in Development of Pulmonary Tuberculosis. R. B. Homan, El Paso.—p. 327.
Classification and Treatment of Pulmonary Hemorrhage Due to Tuberculosis. S. E. Thompson, Kerrville.—p. 328.
Psychotherapy in Tuberculosis. W. O. Wilkes, Waco.—p. 331.
Serum Treatment of Acute Lobar Pneumonia. J. E. Robinson, Temple.—p. 335.

U. S. Naval Medical Bulletin, Washington, D. C.

Hospital Corps Quarterly

January, 1920, No. 12

- Air Station at Dunkirk. R. W. Meals, U. S. Navy.—p. 9.
Harmful Parasites of Man. R. H. Laning, M. C., U. S. Navy.—p. 22.
Hospital Corps Training School at Great Lakes. R. G. Davis, M. C., U. S. Navy.—p. 30.
In the Thick of the Fight. F. Tousie, U. S. Navy.—p. 35.
Testing Aneroid Sphygmomanometers. C. Schaffer, M. C., U. S. Navy.—p. 40.
Naval Pharmacist Afloat. F. J. Shea, U. S. Navy.—p. 44.
Pharmacist's Mates School. P. F. Dickens, M. C., U. S. Navy.—p. 46.
Technic of Roentgen Ray Plate Development. A. P. Evans, M. C., U. S. Navy.—p. 68.

Virginia Medical Monthly, Richmond

January, 1920, 46, No. 10

- *Surgical Treatment of Intestinal Stasis. J. S. Horsley, Richmond.—p. 247.
Râles from Expiration and Cough as a Means to Early Diagnosis in Tuberculosis. B. L. Taliaferro, Catawba Sanatorium.—p. 251.
*Hemoptysis. E. E. Watson, Salem.—p. 252.
*Home Treatment of Pulmonary Tuberculosis. W. E. Brown, Catawba Sanatorium.—p. 254.
Artificial Pneumothorax. F. G. Simmons, Salem.—p. 257.
Tuberculosis and General Practitioner. H. G. Carter, Burkeville.—p. 259.
*Simple Method of Controlling Secondary Hemorrhage after Operation for Piles. R. B. James, Danville.—p. 263.
Diagnostic Points for Re-Education of Neglected Pareses, and Similar Impairments of Motion. J. M. Taylor, Philadelphia.—p. 264.

Surgical Treatment of Intestinal Stasis.—Horsley reports the end-results in seventy-four cases of intestinal stasis in which he operated between February, 1912, and September, 1917. In twenty-two patients the operation performed was appendectomy and division of Lane's band. Thirteen of these reported that they were greatly improved, eight that they were improved. There was none unimproved and no deaths. One patient did not report. In twenty-seven cases, the Coffey, or hammock operation, which consists in suturing the gastrocolic omentum to the abdominal wall, was done. Of this number, twelve reported great improvement, ten were improved, and two were unimproved. Two died, and from one patient no report could be obtained. In seventeen patients cecostigmoidostomy was done. In this group six patients were greatly improved, four were improved, five were unimproved, one patient died and from one patient no report was obtained. In five cases the Coffey operation and cecostigmoidostomy was done. Of these patients three were greatly improved and two were unimproved. In three cases ileostigmoidostomy was done. None of these patients was greatly improved, but two are classed as improved. All recovered from the operation. One patient died from pneumonia two years and two months after leaving the hospital. Summing up this group of seventy-four cases, thirty-four patients (46 per cent.) are greatly improved; twenty-four (32.5 per cent.) are improved, nine (12 per cent.) are unimproved, four (5.5 per cent.) are dead, and three (4 per cent.) were not heard from. The reports from these patients varied

from five months to five and one-quarters years from the time of operation.

Hemoptysis.—This paper was abstracted in *THE JOURNAL*, Nov. 29, 1919, p. 1722.

Home Treatment of Pulmonary Tuberculosis.—This paper was abstracted in *THE JOURNAL*, Nov. 29, 1919, p. 1722.

Controlling Secondary Hemorrhage After Operation for Piles.—In a case cited by James secondary hemorrhage was controlled without disturbing the patient, by slipping a rubber glove finger over a glass tube, 3 inches long, and wrapping the open end of the glove finger securely around the near end of the tube, and attaching to the projecting tube a rubber bulb such as is used in a common atomizer. By inserting this rubber covered tube between the sphincters and pumping in air, sufficient compression was produced to control the hemorrhage, with no pain or distress to the patient and without disturbing him in the least. A clamp was placed on the rubber tubing, and the apparatus was left in place for three days, when on removing the clamp the air escaped and in an hour or two the apparatus had come away without the knowledge of the patient.

West Virginia Medical Journal, Huntington

January, 1920, 14, No. 7

Fractures. W. W. Golden, Elkins.—p. 241.

Failure of Restricted Operations in Cancer of Breast. A. McGlannan, Baltimore.—p. 247.

Schick Reaction. W. E. Smith, Minden.—p. 250.

Head Injuries; Some Case Reports. J. M. Emmett and R. J. Wilkinson, Huntington.—p. 254.

Angioneurotic Edema. W. E. Vest, Huntington.—p. 258.

Diabetes Mellitus with Multiple Abscesses, Report of Case. O. L. Perry, Elkins.—p. 261.

Wisconsin Medical Journal, Milwaukee

January, 1920, 18, No. 8

Preventive Medicine: Stool Examinations for Diagnosis of Intestinal Parasites. W. D. Stovall, Madison.—p. 328.

Diphtheria, Vincent's Angina and Other Infections of Nose and Throat. W. D. Stovall, Madison.—p. 329.

Need for Morbidity Registration in Wisconsin. R. Olesen, Madison.—p. 333.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

October, 1919, 42, Part 3

*War Neurasthenia—Acute and Chronic. D. W. Carmalt Jones.—p. 171.

*Hyperglycemia in Mental Disorders. F. H. Kooy.—p. 214.

War Neurasthenia.—After having cases of this type under observation for one year, Jones is convinced of the reality, the severity and the amenability to treatment of this disease. He believes that the symptoms of this condition are due, in part at least, to prolonged overstimulation of the ductless glands, chiefly the suprarenal. Jones pleads for recognition of this disease and its appropriate treatment by competent men, if possible in a special hospital given over entirely to these cases.

Hyperglycemia in Mental Disorders.—Two of ten cases of dementia praecox examined by Kooy with reference to the blood sugar content showed a higher count than 1.30 per mille after breakfast. In nine cases of dementia paralytica, the average of the highest amounts was 1.33 per mille. Six of the nine patients had, without excitement or apoplexy, an amount above 1.30 per mille after breakfast. An examination of nineteen cases of melancholia showed that in this disease the blood sugar is much increased. If 1.10 before breakfast is the normal limit, then nine patients had surpassed that figure. Examination of four cases of true neurasthenia and psychasthenia, without any bodily abnormalities, showed plainly that emotions cause hyperglycemia in man. The blood sugar is very much increased when the patients who have confusional insanity are in a highly emotional state, whereas it decreases on recovery. The results with mania are extremely variable. Optimism and highly increased blood sugar run parallel. Increase in blood sugar, as a rule, is highest in real emotional states, such as may occur in mania at its climax; it is smaller,

although still present, in the milder form of mania, and absent in those hypomaniacal forms in which the patient is only optimistic, cheerful and inclined to be jocular. Emotions, especially those of a depressive character, cause an increase in blood sugar. They, therefore, have a deteriorating influence on diabetes mellitus. They may cause a temporary hyperglycemia and even glycosuria in normal persons not suffering from saccharin diabetes. Even a considerable increase in blood sugar need not be a symptom of disordered metabolism. Hyperglycemia may occur with any emotional state in mental disorders. Kooy found it to occur in emotional states of patients suffering from general paresis, epilepsy, dementia praecox, traumatic neurosis and neurasthenia. Glycosuria and hyperglycemia are most frequent in melancholia. Kooy's investigation has shown that hyperglycemia before breakfast (spontaneous hyperglycemia) is not a constant symptom in melancholia, but it was constantly present after the patients had taken ± 200 c.c. of milk and ± 100 gm. of bread and butter (alimentary hyperglycemia). With marked anxiety there was the highest amount of sugar in the blood.

Bristol Medico-Chirurgical Journal

December, 1919, 36, No. 137

Contemporary Medicine from Standpoint of Pathology. I. W. Hall.—p. 9.

Disease in Mesopotamia. F. P. Mackie.—p. 118.

Treatment of Ununited Fractures: Use of Bone Grafts. E. W. H. Groves.—p. 132.

Stammering as It Occurred in War. R. G. Gordon.—p. 143.

Lancet, London

Jan. 17, 1920, 1, No. 5029

Application of War Methods to Civil Practice. A. Bowlby.—p. 131.

*Surgery of Heart. C. Ballance.—p. 134

Treatment of Malunion in Fractures of Femur. W. E. Wilson.—p. 139.

*Meaning of Tachycardia. R. M. Wilson.—p. 146.

Case of Dislocation of Cervical Spine. J. P. Buckley.—p. 149.

*Ureter Calculus of Unusual Size. F. Kidd.—p. 150.

Diverticulitis, Report of Cases. G. G. Turner.—p. 151.

*Acute Hydropneumothorax. J. W. T. Thomas.—p. 152

Case of Sudden Complete Procidentia Recti in Young Adult Male. W. R. M. Turtle.—p. 153.

Surgery of Heart.—In certain cases of purulent infection of the pericardium, Ballance holds that the culdesac of Haller should be drained. He believes that the operation is justified on anatomic and pathologic considerations. He feels that the surgery of the heart will occupy in the coming time a conspicuous place in surgical practice. The reward of success will attend efforts in so far as the heart is treated as one of the ordinary tissues of the body and the method of operation conforms to the fundamental principles of surgery.

Significance of Tachycardia.—According to Wilson, tachycardia in a man who is up and about is compensatory in character, the addition of acceleration to augmentation. It points to the presence of a mild infection, and can be removed only by removing the infection. There is evidence that the action of the toxin is directly on the cardiac vagus.

Ureter Calculus of Unusual Size.—The stone in Kidd's case measured $2\frac{1}{4}$ inches in its long diameter and 1 inch in its short diameter, and weighed 1 ounce. It consisted of phosphates, with a trace of oxalates, and contained no cystine, no carbonate and no uric acid. The stone lay below the pelvic brim. Very few symptoms had been caused by it.

Acute Hydropneumothorax.—In Thomas' case the acute hydropneumothorax resulted from an old gunshot wound of the chest. The patient recovered in spite of a communication between the pneumothorax and the stomach.

Jan. 24, 1920, 1, No. 5030

Pulmonary and Other Forms of Tuberculosis. H. B. Shaw.—p. 179

*Carbon Monoxid Poisoning in Warfare. W. J. Rutherford.—p. 184.

*Rickets in Germany: Study of Effects of War on Children. Engel.—p. 188.

Case of Severe Cerebral Toxemia, Following Intravenous Injection of Novarsenobillon. R. J. G. Parnell.—p. 190.

*The Schick Reaction for Determination of Susceptibility to Diphtheria. H. M. Leete.—p. 192.

Treatment of Malaria in Macedonia. A. G. Phear.—p. 194

Bilharziasis: Its Incidence and Eradication. F. Milton.—p. 196.

Carbon Monoxid Poisoning in Mines.—Carbon monoxid is produced during explosion of charges in mines. Where the mine is deeply placed, or where a small charge has been used so that the surface of the ground has not been broken, the gas is either forced into the underground system of mine galleries or gradually percolates into the galleries through cracks and porosities in the ground and in these circumstances the miners become subject to this form of gas poisoning, the severity of which may range from mere headache and debility to coma and death. In some cases the reflux of carbon monoxid after an explosion has come up to the mine shaft and caused gas poisoning in the trench in the near vicinity to the mine entrance. Carbon monoxid has the effects of a cumulative poison, even in relatively small quantities. The various explosive substances (with certain exceptions, such as the acetylene compounds) contain within themselves a considerable amount of oxygen, which is, however, generally insufficient for the complete oxidation of all the constituent oxidizable elements. In consequence, not only may there be the formation of carbon monoxid, but hydrogen, marsh gas and certain other oxidizable substances may be liberated as the result of the detonation of various explosives. The methane is said to result from interaction of the hydrogen with the oxids of carbon as the hot gases cool down and not to be formed at the time of the explosion. Nitroglycerin is an example of the explosives which are completely oxidized on detonation, and this substance exists to the extent of 75 per cent. in dynamite and 30 per cent. in cordite, besides being present in smaller proportions in many of the blasting gelatins. Carbon monoxid is produced as the result of the use of a large series of explosives, such as gunpowder (whether in the form of rifle powder, "cocoa powder," or blasting powder), gun cotton (either by itself, or as cordite, of which it forms 65 per cent.; smokeless powder, which is 98 per cent. gun cotton with 1 per cent. of acetone and 1 per cent. of moisture, etc.; or the blasting gelatins), and ammonal, the latter of which is used extensively and in enormous quantities. The fulminate in the detonators also liberates carbon monoxid in small amount. It is the carbon monoxid thus produced, and produced in these high proportions and enormous quantities, which is absorbed in the chalk and forced into the fissures, either existing naturally or resulting from the explosion of the charges that have been laid, that is being constantly encountered by those engaged in the work of the various tunneling companies, and which frequently results in the occurrence of cases of gas poisoning of this specialized nature. Owing to the gas being contained in cracks among the chalk it is found in what are described by the miners as "pockets" and owing to this fact in many instances the gas is liberated too suddenly for the men to notice any alteration in the behavior of the test animals (mice or canaries) that they have with them before they are themselves beginning to be affected.

Rickets in Germany: Effects of War on Children.—Engel says that only in the very latest period of the war did weakly children under weight begin to appear in greater number. The average of weight of new-born children, as observed in the lying-in hospital, was then reduced. The general health of infants was good, the mortality rate low. The number of births had fallen sharply, a circumstance which always reacts favorably on infant mortality. In addition to this, chiefly in consequence of the shortage of cow's milk, and encouraged by a special grant from the state, breast feeding became more prevalent. The mortality rate of infants was permanently reduced. The position of children between two and five years of age, however, became more and more unfavorable. In spite of the fact that their number also fell, and, therefore, other things being equal, their prospect of life became better, the mortality rate did not fall, but from 1915 on practically reached the infantile mortality rate and even exceeded that of 1918. In normal times the mortality of the children from 2 to 5 years old was not half as great as that of infants. When the statistics are examined, it is seen that the increased number of deaths are not referred to the infectious complaints, but to inflammation of the lungs, but in reality the increase of deaths of rachitic children was the result of respiratory insufficiency,

or "inflammation of the lung," and which makes it probable that the high mortality of little children is really to be ascribed to rickets.

Schick Reaction for Determination of Susceptibility to Diphtheria.—In Leete's experience the Schick test appears to be of definite value in detecting diphtheria susceptibles, and as such has many possible applications. It is easy to perform and free from any danger. A reliable toxin and careful technic are essential. Once the difference between a positive and a pseudoreaction are appreciated, reading is easy, but if there is any doubt, controls of heated toxin should be used. The best times for reading are twenty-four hours, three days, and ten days after the test.

Medical Journal of Australia, Sydney

Dec. 13, 1919, 2, No. 24

Bacteriology of Influenzal Pneumonia. A. H. Tabbutt.—p. 499.
*Case for Diagnosis (Thomsen's Disease?). A. W. Campbell.—p. 506.

Thomsen's Disease?—Campbell reports the case of a man, aged 27 years, who for ten or eleven years had shown apparently remarkable muscular development, but whose real muscular power was slight and subject to easy fatigue, whose every movement was hampered and impeded by "intention rigidity" and tendency to tonic contraction, and whose muscles were unduly firm in relaxation and show an alteration of electrical excitability, suggesting the myotonic reaction. In these respects the clinical picture fitted Thomsen's disease. It was incomplete, however, inasmuch as the marks of familial and congenital origin were wanting.

Dec. 20, 1919, 2, No. 25

Antimalarial Work with Australian Mounted Division in Palestine. Its Relation to the Same Problem in Australia. W. Evans.—p. 526.
Three Cases of Bilharziasis Treated with Tartar Emetic. N. H. Fairley.—p. 529.

Dec. 27, 1919, 2, No. 26

Interaction between War, Profession of Medicine, and Practitioner. R. S. Skirving.—p. 548.
*Brain Weight in Congenital Mental Deficiency. W. A. Limb.—p. 551.

Jan. 3, 1920, 1, No. 1

Results and Treatment of Suspensory Apparatus of Female Pelvic Organs. T. G. Wilson.—p. 2.
Abolition of Drainage Tube in Operative Treatment of Hydatid Cysts. W. J. Stewart.—p. 6.

Brain Weight in Congenital Mental Deficiency.—The figures presented by Lind show that whatever significance the brain weight may have in the sane, it possesses no indicative value when applied to those born insane, who had brain weights ranging in this series from 115 to 1,680 gm. The weights recorded are those of the brains of 142 congenital mental deficient.

Journal of State Medicine, London

January, 1920, 28, No. 1

Influence of Town Planning on Tuberculosis. P. Abercrombie.—p. 1.
Tuberculosis Colonies and Their Management. P. C. Varrier-Jones.—p. 12.

Naval Medical Association Bulletin, Tokyo

October, 1919, No. 26

*Mucor Isolated from Feces of Beriberi Patients. S. Kiyosaki.—p. 1.
*Quantity of Diastase in Normal Urine. E. Saigusa.—p. 1.

Mucor Isolated from Feces of Beriberi Patients.—Kiyosaki examined the feces of thirty beriberi patients. In ten instances he found the identical mucor. Injected into frogs, pigeons, guinea-pigs and rats, it caused toxic effects, producing, especially in frogs, symptoms resembling motor paralysis.

Quantity of Diastase in Normal Urine.—The urine of 114 persons was examined by Saigusa by the one-half hour method of Noguchi and Wohlgemuth. The quantity of diastase thus determined varied from 8 to 64, in the majority of cases ranging from 16 to 32. It had, to a certain extent, a relation to the specific gravity of the urine. The starch paste used by Saigusa in his experiments was prepared from official potato starch by heating it for a certain time to destroy amylopectin contained in it, and then passing it

through a filter. The author claims that this starch paste could well take the part played by the soluble starch of Kahlbaum in this experiment.

Sei-I-Kwai Medical Journal, Tokyo

August-September, 1919, 38, Nos. 8-9

- *Perfusions of Respiratory Center in Turtles: Effect of Calcium, Potassium Chlorid and Magnesium Chlorid. K. Tsugane.—p. 37.
- Cardio-inhibitory Action of Magnesium Chlorid on Turtles. K. Tsugane.—p. 39.
- Infantile Scarlet Fever. T. Nomura.—p. 40.

Effect of Calcium, Potassium Chlorid and Magnesium Chlorid on Respiratory Center.—Perfusing the respiratory center of a turtle with a mixture of sodium and calcium, or sodium and potassium salts, and also magnesium, only showed that the effective action of the respiratory center was greatly increased, but if a physiologic quantity of potassium salts was added to an isotonic sodium chlorid solution and this mixture was perfused, examination of the respiratory center did not reveal an increased effectiveness. In thirteen cases comparison was made with the 0.7 per cent. magnesium chlorid solution. There was immediately quickening of rhythm in the heart, but the same experiments showed that the application of magnesium chlorid solution to the respiratory center causes immediately abolition of the functions of the medullary center.

Annales de Médecine, Paris

December, 1919, 6, No. 5

- *Meningococcemia. P. Ribierre, P. Hébert and M. Bloch.—p. 341.
- *Meningeal Reactions with Uremia. H. Roger.—p. 369.
- *Periodic Paralysis. G. Guillaïn and J. A. Barré.—p. 386.
- *Experimental and Critical Research on Pneumothorax. E. Rist and A. Strohl.—p. 393.
- Recent Literature on the Pathology of the Ramifications of the Bundle of His. C. Esmein.—p. 415.

Meningococcemia Without Meningeal Symptoms.—Ribierre and his co-workers state that they have recently encountered several cases of prolonged intermittent fever for which the meningococcus was responsible. Five complete case reports are given and two others without bacteriologic control. The chills and fever are of the malarial type, eruptions are constant, as also pains in muscles and joints during the febrile periods, frequently accompanied by redness and swelling around the joints. In nearly every case the cocci finally invade the meninges, the tardy meningitis in some cases first giving the clue to the nature of the disease. In three of the cases reported the interval was one, two and three months from the first symptoms, but intraspinal serotherapy then proved promptly effectual and cured at the same time the general infection. Lumbar puncture long before had yielded a limpid and sterile fluid, but it contained 0.3 or 0.4 per cent. albumin with moderate leukocytosis and abnormally large proportions of polynuclears. The fluid was also of this type in another case in which the meninges seemed to escape entirely, although the febrile meningococcemia persisted for four months. The cocci were isolated from the rhinopharynx as well as from the blood, and the onset of the disease was that of frank septicemia. There was no epidemic at the time, the cases occurring between November and April. In one of the two fatal cases there was tardy localization of the meningococci in the endocardium. The eruptions may be purpuric, papulous or nodular. The experiences related emphasize the importance of identifying the exact strain of meningococci involved, and giving this specific serotherapy, using a polyvalent serum until this is possible. In these cases scarcely any benefit was apparent from the antiserum until the strictly specific antiserum was used. They advise five injections at twenty-four hours intervals, alternately subcutaneous and intramuscular; if improvement is not observed in the following days, they give it by the vein, and in case this fails, inject it into the spinal cavity, regardless of whether there are meningeal symptoms or not. The patient should be kept under observation for at least a month after the supposed cure as there may be a tardy relapse. The nasopharynx should be examined for meningococci and, if found, the antiserum in powder form should be insufflated. In one of the cases, treatment was with neo-

arsphenamin by the vein, with recovery after 1.65 gm. had thus been injected in the course of a month. The Wassermann test was negative. No benefit from this drug was apparent, however, in any of the other cases. In rebellious cases others have reported good results with autovaccines and revulsion by a turpentine abscess.

Uremic Meningeal Reactions.—Roger presents evidence to show that the meningeal reactions which develop in the course of uremia do not seem to be directly caused by the retention of nitrogen. They are usually the results of intercurrent cerebral complications, hemorrhage and softening for which the kidney sclerosis is only indirectly responsible. Cerebral hemorrhage was found by Frerichs in 11 of 292 uremia cadavers, and 3 in 112 by Rosenstein. Canti has recently published 3 cases of cerebral hemorrhage or softening with azotemia of 0.9 to 1.5 gm. per liter. Meningeal hemorrhage is not exceptional with chronic kidney disease. The latter raises the blood pressure until some vessel ruptures. This explanation of the meningeal reactions in uremia as mechanical rather than toxic, would be verified oftener if the cerebrospinal fluid was examined more carefully at necropsies. Slight xanthochromia may escape detection unless the tube is inspected lengthwise, but this proves the presence of blood, thus adding a fourth type to the three biologic types of uremic meningeal reactions, those with hyperalbuminosis, those presenting merely hypercytosis, or both combined. Acute infectious meningitis in a patient with uremia is often mistaken for uremic meningitis. The pneumococcus is usually involved, but syphilis and tuberculosis may likewise be responsible. In one such case with positive Wassermann reaction, the convulsions subsided after lumbar puncture, but the headache and torpor did not improve until under treatment for syphilis. When the uremia alone can be incriminated for the meningitis or meningeal condition, the spinal fluid may show merely cytologic and chemical reactions without clinical manifestations, or these reactions may be encountered in the course of neuro-uremia, febrile or not, with headache, vomiting, convulsions, stiffness of the back of the neck, Kernig sign and contracture of the spine. But Roger insists that most of these symptoms are the work of the azotemia rather than any special injury of the meninges. The urea poisons the cortex. He had one case in which extreme retention of sodium chlorid alone, without uremia, was responsible for convulsions, etc. To prove the various points in his article he cites numerous concrete examples from his own and others' experiences.

Periodic Paralysis.—Guillaïn and Barré report the case of a soldier of 36 who had paralysis of the arms come on nearly every night, about 2. There is no pain and no paresthesia, but the patient is unable to lift even the bed clothes. By 7 or 8 the paralysis passes off, and his muscles keep normal during the day. Only occasionally when writing, he has to stop as his arms and legs feel heavy, but walking around a bit restores normal conditions. He has noted symptoms of the kind for sixteen years, but the actual paralysis did not develop until in the trenches in 1915. The attacks of paralysis vary widely in intensity, and during the severer ones the electric excitability of the muscles and nerves disappears completely. The muscles innervated by the cranial nerves never showed a trace of paralysis during the several months the man was under observation. The tendon reflexes disappeared during the severer attacks, but the skin reflexes showed no modifications, and there never were any sensory disturbances. There was no history of malaria, and although the Wassermann reaction was positive in the blood on two occasions, they are inclined to doubt its pathogenic importance here. The spinal fluid shows no sign of neurosyphilis, and no benefit was realized with tentative specific treatment, nor from strychnin, epinephrin, camphor, repose, etc. There seems to be some intermittent intoxication, some poisons of unknown origin accumulating during the intervals, and then acting on certain peculiarly susceptible nerves.

Capacity of the Pleural Cavity.—Rist and Strohl comment on the extreme variability of the curves when the quantities

of gas introduced into the pleura for artificial pneumothorax are compared with the corresponding intrapleural pressure as abscissa and ordinate. The variability depends on the elasticity of the lung, permitting the spreading apart of the sheets of the pleura. A sudden drop in the pressure curve is a sign of sudden increase in the capacity of the pleura, entailed by the breaking of adhesions. The pleural cavity is not a space with rigid walls.

Presse Médicale, Paris

Dec. 27, 1919, 27, No. 80

- *Inaugural Lecture of Operations and Apparatus Course. P. Duval.—p. 801.
- *Aspiration during Operations. H. L. Rocher.—p. 806.
- Anatomy of Snapping Hip. A. Mariau.—p. 807.
- *By-Effect with Mercuric Cyanid. L. Renard.—p. 808.

French Surgery During the War.—In the course of this opening lecture of the "operations and apparatus course," Duval says of the Carrel method that it represented immense progress at the time of its introduction, restoring confidence when despair at the impotence of surgery was almost universal. But the Carrel method is based on two errors, the assumption that a wound after it has been cleared of devitalized tissues requires disinfection; in reality the sound tissues are perfectly competent to cope with the few microbes left, provided—and this was Carrel's second mistake—that there are no streptococci in the wound. He merely counted the bacteria, paying no heed to the species. It was Henri Gaudier, he says, who blazed the way for the successful treatment of war wounds, proclaiming that all devitalized tissue must be cleared out, but that when this was done, then the wound could be safely sutured. Tissier showed that this was true only in the absence of the streptococcus; by excluding or waiting for the disappearance of the streptococcus, then wounds can be confidently sutured. To France, Duval reiterates, belongs the honor of discovering the importance of the biology of the wound: the toxicity of crushed, devitalized tissues, the excision of all such, and the primary suture at once or a few days later when the wound has been cleared out and absolutely protected against contamination. The French also proclaimed that wounds anywhere in the body, even in the lungs, should all be treated on these same principles.

Illumination and Aspiration During Operations.—Rocher expatiates on the importance of a forehead electric light for all operating on cavities, and the importance of continuous vacuum aspiration during operations with which hemorrhage is liable. He uses for the purpose an electric pump designed for compressing air for therapeutic hot air jets. He holds the aspirating cannula in his left hand, sucking up with it all blood, pus, and other secretions, while the right hand wields the curet or other instrument, or an assistant manages the vacuum aspiration. Several cannulas are kept ready in case one gets blocked. He has found this aspiration cleansing of the wound especially useful in operations on bones, on the face and jaws, and on the throat and palate. A minor advantage of the aspiration is that it materially reduces the number of sponges needed at operations.

Mercuric Cyanid by the Vein.—Renard calls attention to the subjective odor of bitter almonds which is sometimes experienced as mercuric cyanid is given by the vein. He now warns patients to expect it.

Jan. 3, 1920, 28, No. 1

- *Esthetic Laparotomy Incision. F. Jayle.—p. 1.
- Advantages of Filiform Drainage for Chancroidal Bubo. A. Floquet.—p. 5.

Esthetic Gynecologic Incision.—Jayle expatiates on the advantages of a small transverse incision, to one side of the median line, for access to the adnexa on one side and for removal of the "cold" appendix, under general anesthesia. He gives twenty-four views of the various steps of the operation. It takes a little longer than with a larger incision, and the surgeon has to work with fingers and forceps, and cannot introduce his hand. But the lack of a disfiguring scar and the advantage for the patient of this reduction to the minimum of intraperitoneal manipulations counterbalance

this. He has been able to resect the tube from the other side as well, without enlarging the incision, and even to resect nine tenths of the other ovary.

Progrès Médical, Paris

Dec. 27, 1919, 34, No. 52

- The Three Forms of Shock: Nervous, Hemorrhagic and Toxic. R. Dupont.—p. 519.
- General Etiology of Dyspepsias. F. Ramond.—p. 521.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 25, 1919, 49, No. 52

- *Precipitation Serologic Test for Syphilis. B. Galli-Valerio.—p. 1977.
- *Volvulus as Complication of Appendicectomy. G. Dardel.—p. 1980.
- *Gap in Transverse Mesocolon. Stocker-Dreyer.—p. 1985.
- Venereal Disease in Swiss Army. W. R. Schnyder.—p. 1988: Conc'n.

Precipitation Test for Syphilis.—Galli-Valerio declares that his findings in 241 cases confirmed the great value of Sachs-Georgi precipitation test with cholesterolized organ extracts in the serodiagnosis of syphilis. As the technic is improved, he thinks it will supersede the Wassermann test almost completely as it is so simple and easy. The findings paralleled those of the Wassermann test in 77.59 per cent., and in some of the discordant cases, the effect of treatment had modified the response. The organ extract is made with 100 c.c. of an alcoholic extract of beef heart (1 gm. of heart to 5 c.c. of alcohol); 200 c.c. of alcohol, and 13.5 c.c. of a 1 per cent. alcoholic solution of cholesterol. When ready to use, one part of this extract is mixed with one part of 0.85 per cent. physiologic solution, agitated, and four parts of the latter are added. The serums to be tested should be fresh and clear and should be inactivated by heating for half an hour at 55 or 56 C. To 1 c.c. of the serum to be examined, diluted ten times with the 0.85 per cent. saline, is added 0.5 c.c. of the extract diluted as stated above. The whole is well mixed and incubated at 37 C. for two hours and then kept for twenty, twenty-four, forty-eight hours at room temperature, after which the findings are recorded. Meyer suggests that the interval can be shortened by centrifuging the tubes after three or four hours' incubation. The flocculation and precipitation can be estimated by placing the tubes slanting on the black background of a Leitz dissection microscope, and examining with a No. 8 glass. This renders an agglutinoscope unnecessary.

Volvulus as Complication of Appendicectomy.—Dardel removed the appendix in a girl of 8 with threatening symptoms, but the peritoneum was found intact. The appendicitis was of the so-called catarrhal type. There were no adhesions, but four weeks later the last loop of the ileum became twisted and gangrenous. All the cases on record of post-appendicectomy volvulus with gangrenous loop terminated fatally with one exception besides the case here reported. The diagnosis in this case was unmistakable but the general condition was so good that the child was kept under observation for several hours. The circumstance that in seventeen hours the bowel was found gangrenous and on the point of rupture, emphasizes anew the danger of delay. The case teaches, he says, the inadvisability of removing the appendix for purely prophylactic purposes, and it also teaches that when abdominal disturbance follows appendicectomy, it should not be ascribed as a matter of course to errors in diet. The earlier the diagnosis, the better the outlook for these tardy complications of appendicectomy.

Gap in Transverse Mesocolon.—The retrospective diagnosis was that an old gastric ulcer had in time entailed stenosis of the pylorus and adhesions to the pancreas and the mesocolon. The traction on the latter had caused it to atrophy, and in lifting a basket of washing a sudden violent pain gave notice of a tear in the mesocolon. A loop of intestine slipped at times through the gap, with transient occlusion, but this spontaneously corrected itself several times. The opening was large enough for the circulation in the loop to proceed unhindered for a time. Conditions gradually became aggravated, but after a gastro-enterostomy and suture of the gap in the mesentery the extremely emaciated patient recovered and has called her health perfect during the nine years since.

Chirurgia degli Organi di Movimento, Bologna

December, 1919, 3, No. 5-6

- *Collateral Circulation in the Limbs. G. Bolognesi.—p. 413.
 *Hernia of Muscle. G. Ferrarini.—p. 435.
 *Deformity of Shoulder Resembling Coxa Vara. E. Angeletti.—p. 513.
 Trophic Changes in Amputation Stumps: 650 Cases. F. Delitala.—p. 535.
 *Tuberculous Process in Hip Joint and Congenital Luxation. U. Cesarano.—p. 549.
 Ligation of Femoral Artery for Aneurysm. B. Nigrisoli.—p. 561.
 Treatment of War Wounds of Joints. F. Caccia.—p. 562.
 Case of High Scapula. F. Putzu.—p. 578.
 *Cast for Fractured Humerus, Immobilizing the Shoulder. D. Taddei.—p. 587.
 *Prosthetic Appliances, Especially for the Arm. A. Serra.—p. 593.

Development of Collateral Circulation.—Bolognesi reviews what has been written on this subject in recent years and the experimental research in Italy by Porta, Talma, Stefani, Orecchia and Fichera since 1845. He then gives the roentgen findings in the circulation in six dogs killed from four to ninety days after ligation of the external iliac artery. The abdominal aorta was injected with a contrast suspension of 60 parts minium in 60 parts liquid petrolatum and 30 parts oil of turpentine. In comparison with the intact side, all the vessels below the ligature were found larger and they had more ramifications. The direct lateral circulation was insignificant and of tardy development, while the indirect lateral circulation developed to a remarkable extent, bridging the gap in the artery. His illustrations show this bundle of bridging vessels, numbering twenty-seven in one of the dogs and a still larger number in another. The ligated artery in one finally regained partial permeability. The entire circulatory tree had increased generally in size below the ligature, ensuring resumption of arterial circulation in an almost perfect manner. Persons with a particularly well developed sciatic artery seem to be more liable to develop satisfactory collateral circulation after ligation of the external iliac, as conditions thus resemble more closely the conditions in the dogs in his experiments.

Hernia of Muscle.—Ferrarini analyzes the extensive international literature on hernia of muscle, and describes his own experimental research on myocele and a personal clinical case in which the tumor in the thigh had been noted for seven years. There had been some pain at first after a sudden muscular strain which had evidently caused the hernia. Later the tumor was tender, but the man paid no attention to it until he noticed that it seemed to be growing larger. An operation was done on the assumption of a lipoma, but the tumor proved to be the belly of the rectus muscle. Some of the fibers had been torn across and had retracted, and a cyst had formed in the gap. The clinical picture therefore of a myocele may differ widely according to the pathologic conditions encountered and the site.

Varus Deformity of the Shoulder.—Angeletti discusses the findings in five clinical cases and some anatomic specimens in which there was deformity of the shoulder corresponding to coxa vara in the hip joint. It was of traumatic, inflammatory or rachitic origin, or occurred in a cretin or from chondrodystrophy. The roentgen findings in his clinical cases are reproduced.

Congenital Dislocation of Hip Joint and Tuberculosis.—Cesarano relates that among the 2,000 cases of congenital luxation of the hip joint at the Rizzoli Institute there were two cases in which the operation for correction of the deformity, or casual trauma, was followed by rapid development of a tuberculous process in the joint, although there had been nothing to suggest tuberculosis in the child before. In one, the deformity was bilateral, but the right joint had required more forcible and repeated correction, and the tuberculous process developed in this joint. The child came from a tuberculous family, but roentgenography had shown apparently normal conditions before the intervention. The process had developed in the older child after a trauma, nine years subsequent to the correction of the deformity. Only a few such instances are on record, he says, and the fact that tuberculous processes only exceptionally follow the stress of correction of congenital luxation of the hip joint,

testifies anew that trauma alone is not able to induce a tuberculous process in a healthy subject. With inherited or acquired taints, even slight trauma, even any transient overuse of the part, or prolonged morbid congestion may be enough to induce the localization of a tuberculous lesion.

Plaster Cast for Immobilization of the Shoulder.—Taddei extols the advantages of the right-angled or square plaster frame which holds the arm on a level with the shoulder, the forearm on the same level or sloping downward. The findings after healing show fine anatomic, functional and radioscopic results. The patients do not object to the square frame after the first.

Artificial Hands and Arms.—Serra discusses what has been done in the line of prosthetic appliances in Italy and elsewhere in the last two or three years, giving forty-three illustrations and the indications for the different types of artificial limbs and working hands.

Policlinico, Rome

Dec. 7, 1919, 26, No. 49

- *Symptomatology of Meningitis. E. Fossataro.—p. 1445.
 *Sterility. A. Brun.—p. 1449.
 Quinin in the Prophylaxis of Malaria. F. Paoletti.—p. 1458.
 Income Limit for State Insurance against Sickness. L. Verney.—p. 1469.

Symptoms of Meningitis.—Fossataro reports the case of a man of 37 who suddenly began to cough and expectorate, with fever, headache and vomiting. Râles were found at the base of the right lung, and the back of the neck was stiff. The meningococci found in the spinal fluid had evidently invaded the lungs and cerebral meninges simultaneously; the course was distinguished by torpor throughout, the man dying the third month. The spinal meninges did not seem to have been affected. The loss of balance and tendency to fall had suggested a tumor in the cerebellum but vision was normal, except for strabismus. The torpor was evidently the result of the hydrocephalus in the ventricles which was also responsible for the lack of control of the sphincters. Necropsy revealed merely purulent leptomeningitis of the lower surface of the cerebellum with hydrocephalus, ventricular and also intermeningeal, at the base of the brain.

Causes of Sterility.—Brun analyzes 300 cases of sterility in women from his practice at Trieste. In 230 cases the women had never conceived; in seventy cases the women had already gone through an abortion or pregnancy. His experience confirms anew the importance of patience and perseverance in measures to correct the congenital or acquired defects impeding conception. The genitals were apparently normal in thirteen of the 230 cases of primary sterility; in 107 there were congenital defects, in 102 inflammatory processes were responsible, and fibroma in eight.

Dec. 14, 1919, 26, No. 50

- Atypical Forms of Typhoid Fever. E. Mondolfo.—p. 1475.
 *Bacteriologic Diagnosis of Shiga Dysentery. A. Petrucci.—p. 1483.
 Stab Wound of Gravid Uterus. P. de Tommasi.—p. 1486.
 The Housing Problem. A. Filippini.—p. 1487.

Stab Wound of Gravid Uterus.—The woman was at the eighth month when a stab wound pierced the wall of the uterus and amniotic fluid escaped. The laparotomy showed the fetus visible through the 3 or 4 cm. wound. De Tommasi merely sutured the wound, and in a few days the woman was delivered of a healthy child and left the hospital in good condition. Delivery was hastened with forceps, to avoid too much strain on the recent sutures.

October, 1919, 26, Surgical Section No. 10

- Traumatic Aneurysms of the Limbs. T. Laurenti.—p. 313.
 *Cinematization of the Jaw. R. Avanzi.—p. 330.
 Critical Review of Treatment of Compound Fractures from War Wounds. R. Bompiani.—p. 336. Conc'n.

Cinematization of the Jaw.—Avanzi relates that Pellegrini, in discussing motor plastic amputations recently, suggested that it might be possible to form loops in the muscles after amputation of the lower jaw which might serve for vitalization of the prosthesis, as after motor plastic amputations of the leg. Avanzi reviews the various elements that would be

necessary for such intervention, and especially the cooperation of the surgeon and the mechanic or, better yet, the double training in one person.

December, 1919, 26, Medical Section No. 12

*Serodiagnosis of Echinococcus Disease. A. Gasbarrini.—p. 441.

*Rhizomelic Spondylosis and Osteomalacia. N. Pende.—p. 446.

*Spontaneous Nystagmus. G. Bilancioni and A. Romagna-Manoia.—p. 461.

Serum Test for Echinococcus Disease.—Gasbarrini applied the test by the intradermal technic and obtained a positive response in all his twelve cases of hydatid cyst, except in one case in which the cyst had suppurated and thus had ceased to be "active." He commends the ease and harmlessness of the test. It is made with serum from bovine hydatid cysts, filtered; after addition of one drop of phenol to 20 c.c. of the fluid it is set on ice. It keeps active for about a month. Giani obtained satisfactory results also with the Abderhalden test applied to human and bovine serum from subjects with echinococcus disease, and it was positive in seven of Gasbarrini's twelve cases. After surgical intervention the intradermal reaction veers to negative.

Rhizomelic Spondylosis and Osteomalacia.—Pende gives an illustrated description of a case of this combination in a woman of 48 who had had several attacks of articular rheumatism in the last eighteen years. Nothing can be found to indicate any special endocrine disturbance. The associated osteomalacia throws light on the etiology of the rhizomelic spondylosis, as it suggests a common origin in a trophoneurosis of bones and joints. It is localized in this case in the inferior cervical and the lumbosacral metameris and the adjoining joints and corresponding joints in the limbs. The prevailing views on spondylosis are analyzed and compared.

Spontaneous Nystagmus.—The present status of our knowledge on this subject is presented by Bilancioni and Manoia who noted spontaneous nystagmus in 150 of 3,000 aviation candidates. There was nothing otherwise to suggest pathologic conditions in the labyrinth, but there were always signs of functional disturbance in the nervous system, exaggerated reflexes, dermatographism, tremor, etc. Many were accepted and passed satisfactorily through the course of training. The details are given of 4 cases of pure spontaneous nystagmus, and of 8 with heart, kidney or nervous disturbances, also in 2 cases after a fall while flying, and in 2 cases in which there was a history of an old healed otitis media. In 3 others the tests revealed abnormally long reaction to visual and auditory stimuli. They take up in turn the various hypotheses advanced to explain nystagmus. Their conclusion is in favor of some causal functional disturbance in the centers which control the movements of the eyes, this disturbance being probably of embryonal origin and located in the center itself or the cortex or connecting nerve fibers, and consisting in the lack of normal balance between the acting and antagonist elements. The nystagmus occurred only when the eyeballs were rotated to the farthest limit.

Crónica Médica, Lima, Peru

September, 1919, 36, No. 675.

*Treatment of Trigeminal Neuralgia. M. Sixto Chavez.—p. 299.

*The Psychology of Insanity. H. F. Delgado.—p. 316.

*Emergency Splenectomy for Rupture. E. P. Manchego.—p. 327.

Trigeminal Neuralgia.—Chavez reviews the broad field of measures that have been recommended for treatment of trigeminal neuralgia for which no cause can be discovered. In one case he cured supra-orbital neuralgia of three months' standing in a student by application of electricity, but the interval since has not been very long. He cites A. Courcelle's success in treating neuralgia by subcutaneous injection of air (1905), but this can scarcely be applied in treatment of the trigeminal form on account of the resulting disfigurement in the face. Pitres of Bordeaux was the first to inject alcohol in treatment of facial neuralgia (1902), and this has now an extensive literature in all countries. At the best, however, its effect does not last more than nine months. Chavez reports a case in which the trigeminal neuralgia was not modified in the least by the neurolytic injections of alcohol nor by partial resections of the nerve. This patient

was a man of 50 and the neuralgia dated from 1910, although there had been occasionally mild neuralgic pains above the orbit from the age of 23. Year after year the whole array of treatment was applied in turn, including resection of the supra-orbital nerve. Retrogasserian neurotomy is the only resource now in this case, and he gives the minute details of the technic for this and the comments of various authors on this section of the sensory root of the nerve by Frazier's technic. (Published in THE JOURNAL, May 11, 1918, p. 1345.) Chavez describes further a case in which this operation was attempted for neuralgia of ten years' standing, refractory to all other measures. In detaching the meningeal artery from the base of the skull, there was severe hemorrhage which was arrested by ligating the middle meningeal artery. So much blood had been lost and the general condition was so bad in the woman of 62 that the operation was suspended, the patient dying six hours later. In another case the woman of 50 had continued to suffer from the neuralgia after resection of the ophthalmic and the superior and inferior maxillary nerves, and finally the gasserian ganglion was resected (Dr. de la Puente, July, 1917), the first operation of the kind in Peru. The patient died from hemorrhage after the gasserectomy.

Psychology of Insanity.—Delgado remarks that experience has shown the important part played by moral factors in the development of mental derangement; in fact, he deems this the principal factor. The new psychiatry, he declares, is based on psychology, while the textbooks and medical schools lead the student only a few steps into the vast field of psychologic processes. Psychanalysis reveals that mental derangement may be caused by factors of a moral order, moral conflicts, and that the hallucinations, gestures and attitudes of the insane are all important clues for the psychologist, revelations of profound and vital significance for treatment. Of course every psychic process has its molecular concomitant, but Delgado reiterates anew "the priority of the function—the conception which is rejuvenating medicine in all its branches now." "Modern endocrinology is also demonstrating the connection between the psychologic activity and the somatic activity, and the influence of one on the other. Psychanalysis has further shown the importance of organic inferiorities as factors in the psychogenesis of neuroses and psychoses, and in the physiologic estimation of the processes resulting from 'undrained' emotions."

Emergency Splenectomy.—Manchego removed the spleen of a boy of 14 on account of rupture and hemorrhage from a fall. The spleen was much enlarged from malaria, measuring 11 by 7 by 17 cm. and the tear was 8 cm. deep. Splenectomy is a comparatively common operation in Peru. In the case reported the liver began to enlarge the fourth day after the operation. If the tear in the spleen had been lower down, instead of in the upper pole, the boy would probably have bled to death before he reached the hospital.

Semana Médica, Buenos Aires

Oct. 30, 1919, 26, No. 44

Proposed Reforms in Medical Course. P. J. García.—p. 509.

*Extremely Diluted Tuberculin in Treatment of Tuberculosis. F. Gómez Alvarez.—p. 516.

Roentgen of Univertelline Twins. M. Fernández.—p. 527.

*Roentgen Treatment of Bone and Joint Tuberculosis in Children. R. Espinola.—p. 533.

Tuberculin Prophylaxis and Treatment of Tuberculosis.—In this third instalment of his report, Gómez gives the details of ten cases of pulmonary tuberculosis systematically treated by the method of extreme dilution of the tuberculin. The bases for this treatment have already been summarized in these columns, as for instance, Feb. 23, 1918, p. 579. All Gómez' patients seem to be clinically cured at present.

Roentgen Treatment of Tuberculous Bone and Joint Disease.—Espinola declares that roentgen treatment is the best of all measures in surgical tuberculosis especially in cities. Surgical measures should be only secondarily considered. His experience with it has been very favorable, especially when the effect can be supplemented with heliotherapy and mountain or seaside climate.

Siglo Médico, MadridDec. 13, 1919, **66**, No. 3444

*Emotion. Ramón Turró.—p. 1073.

Personal Prophylaxis of Venereal Disease. E. Mañueco Villapadierna.—p. 1076.

Treatment of Gonorrhea in the Female. Sicilia.—p. 1079.

Vaccine or Tuberculin Treatment of Tuberculosis? R. Villegas.—p. 1080.

Emotions and Endocrinology.—Turró explains the psychic by the physiologic basis on which it rests, not the physiologic by the psychic, as is the general rule. Achúcarro's assertions in regard to an internal secretion of the neuroglia and Marañón's demonstration that the brain can influence the vegetative life in two ways, by both nerves and blood, have thrown much light on the question of emotions. Marañón has demonstrated that it is possible to induce all the phenomena of fright, such as pallor, dilatation of the pupils, acceleration of the heart beat, goose flesh, sweating, etc., without the intervention of the brain, merely by injection of epinephrin in the artificially hyperthyroidized or in subjects with latent hyperthyroidism.

Mitteilungen a. d. med. Fak. d. kais. Univ., TokyoDec. 28, 1918, **20**, No. 4. Rec'd Dec., 1919

Physiologic Actions of Fish Poison: Fugutoxin. F. Ishihara.—p. 375.

The Albumin in Horse Serum before and after Immunization with Diphtheria Toxin. K. Sakaguchi, L. Hayashi and B. Tanabe.—p. 427.

*Research on Diabetes: II, III and IV. K. Sakaguchi.—p. 439.

Research on Diabetes.—Sakaguchi presents here his second, third and fourth reports on his exhaustive study of various features of diabetes. In the second he discusses why the tolerance of diabetics is the lowest at breakfast and the elimination of sugar the highest after this meal. His conclusion is that this is due to the fact that the production of glycogen is less after breakfast than at other meals. The elimination of sugar after breakfast can be reduced by giving a little carbohydrate or meat an hour or two before the breakfast. He states further that carbohydrates to the limit of tolerance are borne better if taken four or five hours after the preceding meal. When the interval is six hours or more, the glycosuria may be increased.

In his third communication he presents clinical evidence to show the injurious action of emotional stress on the sugar content of the blood, while brain work, without emotional disturbance, does not modify the glycemia. In the three cases described, the sugar content of the blood was determined before and after the patients had been informed of the serious nature of their disease. Diabetics should avoid occupations, he suggests, that entail worry or excitement.

The fourth communication discusses the influence of intake of albumin on the sugar content of the blood. As the considerable rise in the sugar content reaches its highest point in from two to four hours after eating meat, it seems to be due to the products of digestion in the small intestine, rather than to the products of putrefaction of albumin in the large intestine.

Deutsche Zeitschrift für Chirurgie, LeipzigFebruary, 1919, **148**, No. 5-6

*Differential Diagnosis of Gas Gangrene. Stemmeler.—p. 289.

Prophylaxis of Gas Infection. Remmets.—p. 325.

*Ligation of Femoral Vein in Treatment of Infected Wounds Below. J. Ritter v. Winiwarter.—p. 333.

Gluteal Aneurysms. F. Krische.—p. 352; Id. Goldammer.—p. 374.

*Goiter Operations. O. Orth.—p. 360.

*Covering Defects by Temporarily Suturing to Other Limb. J. F. S. Esser.—p. 385.

Chronic Gastric and Duodenal Ulcer. A. Troell.—p. 404. Cont'd.

Differential Diagnosis of Gas Gangrene.—Stemmeler emphasizes that there can be no hope of successful serotherapy of gas gangrene until we learn to differentiate it. Various kinds of lesions are now grouped under this heading. Typical gas gangrene is a general intoxication from infection of muscle tissue by anaerobic bacteria; the muscle tissue is destroyed by ischemia, never by putrefaction, as gas gangrene is not a putrefaction process, and should never be classed with such. There are two forms of typical gas gangrene, the bronze phlegmon and the epifascial form. Malignant edema belongs in this category of inflammation

from gas and edema-forming bacteria, although it is not of the true gangrene type. The two other categories of wound infection are inflammation from the pus formers, and inflammation from the putrefaction producers with formation of gas.

Stasis Hyperemia by Ligation of Femoral Vein.—Von Winiwarter was unable to obtain reliable results with a constricting band to the thigh in treatment of suppuration in the knee joint, and hence he resorted to ligation of the femoral vein, and reports encouraging results and knows of similar experiences in other hospitals. As the outcome thus surpassed expectations in these severe cases, he is inclined to extend the field of this procedure, and advocate ligation of the femoral artery whenever the fever keeps up for several days after the surgical toilet of the injured knee, and pus is found in the joint. It may be possible by this means to arrest the inflammation, and the lesion may heal without loss of function. As ligation of the femoral vein is a simple and harmless procedure it is justified, he thinks, in every case of severe infectious processes on the legs, in or outside of the knee. He urges others to give the method a trial, citing the details of his eighteen cases. All were war wounds. He applies the stout silk ligature to the vein just below Poupart's ligament, sometimes ligating another large vein besides the femoral. The cyanotic appearance has usually subsided by the next day, but the stasis edema persists. The relief from pain was striking, and even the change of dressings was not painful. The general condition improves, not only from the relief from the pain but from the shutting off of the septic products from the general circulation.

Goiter Operations.—Orth reviews his experience with 300 goiter operations; the mortality was 0.17 per cent. A number of cases showed the close correlation between the various endocrine glands which surgeons have to bear in mind; for instance, one woman first developed goiter after splenectomy. In another woman the goiter developed at once after removal of a myoma, while Wettergreen has witnessed the subsidence of a myoma as exophthalmic goiter developed. Several have reported increase in the size of the thyroid after removal of both ovaries, and Orth had a case in which the woman aborted three days after resection of the thyroid. Such happenings show the necessity for investigation of the genital organs before operating for goiter. In three cases a moderate form of tuberculosis seemed to be whipped up by removal of a goiter which had been compressing the trachea, and the patients soon died. Clairmont has reported some similar experiences with tuberculous patients. The blood pressure was high in 70 per cent. of Orth's cases, and after the thyroidectomy it dropped below normal, but gradually righted itself in a few weeks. No change in the coagulation of the blood was apparent. Transient albuminuria was evident in ten cases after the operation, not before. One patient had a spontaneous fracture of the femur a year after resection of the thyroid, and she died in six weeks. Orth is inclined to ascribe this fragility of the bones to abnormal conditions such as are observed in the bones of thyroidectomized dogs. The displacement of the trachea should be determined with radioscopy before the intervention as a guide to the operation. His only recurrences were in the four cases in which radioscopy had been neglected, and the protrusion of the goiter in the depths was not fully appreciated. He had fatal hemorrhage or embolism in two malignant cases, and in one case the esophagus was injured during the operation as also the trachea in another, but both healed without mishap after suture. Anomalies in the vessels were not infrequent, and this possibility should never be forgotten. In conclusion he warns of the necessity for caution in using disinfectants in this region; some have witnessed the flaring up of latent hyperthyroidism after application of iodized dressings, etc. Another danger from them is the effect on the vocal cords, similar to Cisler's experience with dogs; the vocal cords kept in the cadaver position when their innervation had been cauterized with silver nitrate. After thyroidectomy the vocal cords are liable to keep in the median position for a long time before

they resume normal movements, and any chemicals in the vicinity might exaggerate this.

Plastic Repair of Defects by "Suturing In."—Esser has been very successful with pedunculated flaps from the sound leg in operating on suppurating lesions that refuse to heal. When this technic is not applicable, he applies what he calls *Einnähen*, suturing the freshened defect, after excision of scar tissue, to some point on the sound leg. After it has grown to the sound tissues he cuts out one or two flaps and sutures the other edges to the defect. He gives illustrations of several particularly severe cases that healed under this "suturing in" procedure. None of the patients died.

Deutsche medizinische Wochenschrift, Berlin

Oct. 23, 1919, 45, No. 43

The Restoration of the German Population. A. Gottstein.—p. 1177.
*Induced Pneumothorax in Lung Disease. K. Henius.—p. 1178.
Endemic of Friedländer Bacillus Pneumonia. Zander.—p. 1180.
*Glucose Injections in Heart Disease. W. Pfalz.—p. 1181.
*Progressive Paralysis. A. Jakob.—p. 1183.
Phototherapy in Lupus. Dora Gerson.—p. 1187.
Epidemic of Microsporia. W. Klehmet.—p. 1188.
Infectiousness of Latent Syphilis. W. Gärtner.—p. 1189.
Upward Displacement of the Diaphragm. C. Schwenke.—p. 1191.
*Myocarditis from Illuminating Gas Poisoning. E. Liebmam.—p. 1192.
End-Results of the Friedmann Treatment of Tuberculosis. R. Mühsam and E. Hayward.—p. 1193.
To Remedy Scarcity of Gas in Laboratories and Hospitals. H. Reiter.—p. 1194.
Proposed Reforms in Medical Course. J. Schwalbe.—p. 1196. Cont'n.

Induced Pneumothorax in Lung Disease.—That indeed pneumothorax marks a distinct advance in the treatment of tuberculosis is the conviction reached by Henius after using it in twenty-four cases. He gives his indications for induced pneumothorax as follows: (1) unilateral tuberculosis with cavity formations, even though the other side shows a mild tuberculous infection, provided it is not progressive; (2) unilateral infiltrating inflammatory processes; (3) unilateral, cheesy pleuropneumonia; (4) hemoptysis, if the side that is bleeding can be ascertained; (5) pleuritis, with much effusion, replacing the fluid with air, and (6) a short trial in cases of unilateral, multiple bronchiectatic areas and a central lung abscess. Henius ascribes the good effects of pneumothorax not to the rest that the lung gets from collapse, but to lymph stasis and to hyperemia, which in turn induce renewed growth of connective tissue and thus initiate a healing process. Lymph stasis doubtless prevents the spread of the disease process and the resorption of toxic substances. Collapse of the lung causes also an abatement of the secretion, and pneumothorax gives the diseased lung an opportunity for healing by shriveling. He quotes statistics from Spengler, Saugmann, Stuertz and Zinn, which go to show that over 25 per cent. of the patients so treated are symptomatically cured, and that from 40 to 50 per cent. more are benefited.

Glucose Injections in Heart Disease.—Pfalz found that infusion of glucose solution, as recommended by Büdingen in various heart diseases in which he postulates cardiodystrophy, affects the subjective symptoms favorably. In many cases he noted also objective evidence of improved heart action. No untoward effects have been observed thus far. Büdingen raised the question whether the nutritive material stored up in the heart and that brought to it by the blood are under all circumstances quite sufficient to enable the heart to perform the work that is expected of it. Büdingen began to consider whether or not in certain cardiac diseases, for example, in coronary sclerosis, the symptoms might be caused in large measure by faulty heart nutrition in consequence of narrowing of the blood vessels. He reached the conclusion that carbohydrates, and more especially glucose, play a larger part in heart nutrition than do protein and fat. The physiologic sugar content of the blood is from 0.07 to 0.11 per cent. (Ivar Bang), which suffices under ordinary conditions. The most important reserve product of carbohydrate metabolism is glycogen, the presence of which in the heart muscle is well known. Büdingen assumes that in certain conditions the heart fails to be adequately nourished, that the reserve of glycogen runs low and thus the heart does not get sufficient nourishment. The

resulting cardiodystrophy may be cardiogenic or ectocardiogenic. Coronary sclerosis is an example of the former type, in which both cause and effect lie within the heart. Pathologic conditions of the glands of internal secretion furnish an instance of the ectocardiogenic type, in which the cause lies without and the effect within the heart. Either type of cardiodystrophy Büdingen considers an indication for treatment with from 10 to 20 per cent. glucose infusions. Pfalz has used the Büdingen treatment in a number of cases, and states that he regards it as a valuable procedure. The technic is simple. He infuses a 12 to 20 per cent. glucose solution, prepared from chemically pure glucose tablets, and sterilized before it is used. Ordinarily, from six to ten infusions of from 200 to 300 c.c. each are given at intervals of a week. He gives the infusion at body temperature. He secured the best results in two cases of coronary sclerosis, combined with angina pectoris, with blood pressure only slightly above normal. At the end of the treatment the symptoms (oppression and pain in the chest and arm with suffocation after exertion) had almost entirely disappeared. In three cases of general arteriosclerosis with hypertonia and angina pectoris the infusions proved beneficial, in that the heart symptoms subsided considerably. The infusions raised the temperature in several cases, but normal temperature was promptly regained.

Progressive Paralysis.—The investigations of Jahnel, which showed that ordinarily there were large numbers of spirochetes present in the cerebral cortex of paralytics who had died during an attack, are confirmed by the researches of Jakob and Hermel. The findings of the latter investigators go to show that the exacerbations of the disease, considered from a parasitologic standpoint, constitute very important episodes in the course of progressive paralysis. As the most important results of his investigation, Jakob mentions finding that the mental and motor exacerbations are associated with regressive and progressive phenomena in the fundamental and essential part of the nerve fibers (the axis cylinder), and with severe inflammatory processes in the connective tissue, and infiltration of the pia, the vessels of the cortex and medulla; infiltration of cellular elements into the nerve tissue; collections of lymphocytes; encephalitic processes; occurrence of gummatous changes in the vessel walls, and of miliary gummata in the cerebral cortex. Also endarterial proliferation processes in the vessels of the cortex were noted. Jakob looks on his histologic investigations as furnishing further proof of the correctness of Jahnel's view that the exacerbations of the disease coincide with a vigorous and extensive multiplication of spirochetes. So much, Jakob thinks, must be taken as certain, that in progressive paralysis living spirochetes exert a direct effect on the brain.

It is still a question why paralysis develops in certain syphilitics and not in others, although the observation that it is the syphilitics with very slight defense reactions in whom paralysis appears seems to point toward a solution. Further light on the question is thrown by the observations of Erb and of Fournier that those in whom the infection takes a mild course and who present no specific skin lesions in the secondary stage are more prone to paralysis than are those of whom the converse is true. Jakob's histologic data give the clue to treatment of progressive paralysis. Everything possible must be done to effect a cure of the syphilis, to destroy the remaining foci of spirochetes, and to enhance the production of antibodies. He reports that efforts in this latter line are now under way. He is injecting patients by the vein with inactivated serum from untreated patients in the secondary stage of syphilis with pronounced cutaneous manifestations of the disease, hoping thus to increase the supply of specific antibodies. He is also planning to use cultures of the spirochetes for a similar purpose. As a further reenforcement of the treatment of progressive paralysis and other forms of severe neurosyphilis, he intends to try Knauer's method of injecting arsphenamin into the carotids. [This latter method was described in the *Münchener medizinische Wochenschrift* 66:609 (June 6) 1910. Even with this, the drug does not seem to pass into the cerebrospinal fluid, but the cell content dropped from 1,600 to 0 in one of the

nineteen patients thus treated. Knauer asserts that his experiments on the cadaver and on animals as well as his clinical experiences have demonstrated that this technic does not entail any considerable danger. He suggests that it might be combined with intraspinal injection of the drug, and that possibly mercury or other drugs might pass more readily than arsenic into the cerebrospinal fluid. He usually injects the drug into the carotid through the skin, without exposing the artery, as the patients are liable to tear off the dressings. The head has to be pendent, to throw the artery into relief. He says that in two of his cases no effect was apparent, but in the others the benefit surpassed that from any other treatment known to him.]

Myocarditis from Illuminating-Gas Poisoning.—Liebmann remarks that the publication of Zondek's studies on the heart findings after illuminating-gas poisoning impel him to publish the present case report. The unusual finding in Liebmann's case, which was that of a woman of 38 who was found unconscious in her bathroom, having been overcome by gas escaping from a gas heater, was a severe interstitial and parenchymatous myocarditis. Liebmann thinks that the symptoms in Zondek's case, the drop in blood pressure, the disturbances of the heart beat, and dilatation of the heart were doubtless the results of similar processes.

Münchener medizinische Wochenschrift, Munich

Oct. 24, 1919, 66, No. 43

Spontaneous Healing of War Wounds of Nerves. Perthes.—p. 1219.

*Induced Pulmonary Edema. E. Laqueur.—p. 1221.

*Osteochondritis dissecans. P. F. Nigst.—p. 1223.

*Silver Salvarsan Sodium in the Treatment of Syphilis. Rille and Frühwald.—p. 1226.

Neurorelapses after Salvarsan Treatment. O. Sinn.—p. 1228.

Device for the Intravenous Injection of Opaque Solutions. Stühmer.—p. 1230.

Expert Treatment of Tropical Diseases. L. Külz.—p. 1231.

Simple Method for Determination of Wave Lengths of Homogeneous Roentgen Rays. F. Voltz.—p. 1232.

Rib-Cutting Shears. Kehl.—p. 1233.

Significance of the Casein in Parenteral Milk Therapy. F. Müller.—p. 1233.

Experimental Pulmonary Edema.—What attitude does the healthy organism take toward the presence of fluid in the lung? In order to answer this question Laqueur undertook a series of experiments on cats and rabbits. A solution with which osmotic pressure would be especially active was chosen, in order that fluid might be drawn rapidly into the alveoli. He injected 1 c.c. of a 50 per cent. solution of glucose or of a 20 per cent. sodium chlorid solution into the trachea of a rabbit, whereupon edema of the lung shortly began to develop and continued to increase for about an hour, until the weight of the lung was three times the normal. Associated with the osmotic edema in the lung there was exudation into the surrounding serous cavities, especially into the pericardium. In all the fourteen instances of animal experimentation, at a certain period within the first two hours after injection, the hemoglobin content was higher than before the injection, so that it became evident that in osmotic edema, as well as in toxic edema, the blood undergoes inspissation. Through hemoglobin determinations it could be shown that the amount of fluid that passed out of the blood corresponded to the amount of fluid forming the edema. Induced edema of the lung appears, therefore, to be a ready means of not only bringing about changes in blood concentration but also of estimating the amount of such changes. Muscular rest was found to affect very favorably the course and final outcome of the edema. The circulatory disturbances are apparently suffocation symptoms. Respiration was accelerated but less profound, so that the total air inhaled was not changed. Laqueur thinks that the physical findings with such experiments may aid in teaching percussion and auscultation. Resorption in the lung after the injection was extremely rapid. Most of the fluid and of the glucose injected was absorbed promptly, the balance much more slowly. Osmotic equilibrium between the edema fluid and the blood serum was soon established.

Osteochondritis Dissecans.—Nigst remarks that the etiology of the disease of the joints in which pieces of articular

cartilage are split off from the ends of joints remaining otherwise intact is not yet fully cleared up, but the results of his radiographic investigations, together with the anamnesis, symptomatology and operative findings in his cases, are in close accord with the findings published by Ludloff in 1908. In view of the uniform, characteristic clinical picture he is inclined to regard osteochondritis dissecans as a distinct morbid entity. The various differences reported by other investigators correspond to the different stages of the same pathologic process. He agrees with Ludloff that the striking similarity in the localization of the lesions must be traceable to a definite disease process. The preliminary stages of the disease are as yet unknown, but if in all cases roentgenograms of corresponding joints were made, comparative studies could be undertaken that would help to throw light on the pathogenesis of the disease.

Silver Salvarsan Sodium in the Treatment of Syphilis.—Rille and Frühwald find that the effect of silver salvarsan on syphilitic symptoms, both clinical and serologic, is more rapid than that of the usual combined neosalvarsan treatment. Much smaller doses, they say, are required than are needed of other salvarsan preparations, which is all the more significant in view of the fact that silver salvarsan contains only two thirds as much arsenic as old salvarsan. In using silver salvarsan one therefore keeps well under the toxic doses. The authors found that as a rule silver salvarsan was well borne by patients; no serious accidents from its use were observed.

Zentralblatt für Chirurgie, Leipzig

Dec. 13, 1919, 46, No. 50

Clamp with Double Parallel Grasp, for Operations on Stomach and Intestine. R. Sommer.—p. 994.

Technic for Correction of Ischiorectal Fistula. H. Walther.—p. 995.

Dec 27, 1919, 46, No. 52

*Blocking the Splanchnic Nerve. G. A. Preiss and A. Ritter.—p. 1025.

Epinephrin not Indicated for Prevention of Postoperative Paralysis of the Intestines. Mülberger.—p. 1030.

Blocking the Splanchnic Nerves.—Preiss and Ritter report the application in 89 cases of Kappis' technic for blocking the splanchnic nerve from the rear, reaching it from just below the twelfth rib, at a depth of approximately 7 cm. above the second lumbar transverse process, introducing the needle at the lateral convex margin of the vertebra, and depositing from 10 to 40 cc. of a 1 per cent. procain-epinephrin solution. The patient may be prepared with a sedative the evening before and again half an hour before the operation. Wendling reaches the nerve from the front, 0.5 cm. to the left of the median line and 1 cm. below the xiphoid process, blocking the nerve before it joins the solar plexus. Four reports have been published of experiences with these methods, a total of 254 cases. Preiss and Ritter here state that in their 89 cases there were only 4 so refractory that the operation had to be done under inhalation anesthesia. Cancer involving the nerves was responsible for the failure in 2 of these cases and phlegmonous appendicitis in another case in which the parietal peritoneum was intensely sensitive. The fourth failure was with an ovariectomy; blocking the splanchnic nerves does not anesthetize the ovaries. In 5 other cases a little supplementary inhalation anesthesia was required. In one case the vena cava was punctured and in another the lung. Fifteen different types of operations were performed, including 13 resecting operations on the stomach, 5 gastro-enterostomies, 2 nephrectomies, 1 decapsulation of the kidney, 2 cholecystectomies and a large number of resections of the intestines, jejunostomy, etc. The fluid spreads easily in the retroperitoneal tissues, so that a single injection on each side was all that was needed for the appendicectomies. The results were better when Kappis' solution was modified to the following: 1 c.c. procain; 50 c.c. distilled water; epinephrin (suprarenin) 0.001; sodium chlorid 0.35, and potassium sulphate 1.2 c.c. The anesthesia was so complete that they finally dispensed with the preliminary sedatives as superfluous and even detracting from the anesthetic effect. The youngest patient was 11, the oldest 70. No serious by-effects were noted, no signs of intoxication or collapse, at most occasional nausea and pallor during the

operation, exceptionally a little vomiting. The special field for splanchnic anesthesia, they affirm, is not only for major operations on all the organs of the greater abdominal cavity but also interventions for severe acute peritonitis, as after perforation of a viscus.

Zentralblatt für Gynäkologie, Leipzig

Dec. 6, 1919, 43, No. 49

*Helminths in Female Genital Organs. F. Tschamer.—p. 989.
*Nasal Diphtheria in the Newly Born. J. Becker.—p. 996.

Helminths in Female Genital Organs.—Tschamer reports a case in which two living specimens of the oxyuris were found in the right tube after total hysterectomy. As the tube was slit, one of the helminths crawled to the mouth of the tube, the other to the fimbriated end and both dropped off. The longest was 12 mm. in length. No ova of the oxyuris could be detected anywhere in the excised mass, but it had been rinsed, and possibly some may have been present at first. The woman had been recently treated with santonin on account of discomfort from itching at the anus and genitals and in the nose. The pinworms probably had found their way from the anus through the vulva and uterus into the tube, but there did not seem to be any pathologic condition for which they could be held responsible. The patient in this case was a previously healthy secundipara of 31 who had had a hydatidiform mole removed in 1909; another in 1919 compelled evacuation of the uterus anew. The genitals were otherwise normal at the time, but five months later she returned complaining of pains in the inguinal region and excessive menstrual hemorrhages, and a nodular tumor was found low in the uterus, apparently a chorio-epithelioma. Tschamer reviews the literature on helminths in the internal genitals; it is evidently a very rare occurrence. He was not able to find any previous record of the penetration of the helminths or ova beyond the vagina and cervix except that Marro reported in 1901 a case in which oxyuris ova were found in a cyst on an ovary.

Nasal Diphtheria in New-Born Infants.—Becker states that at the Jena maternity there were five cases of nasal diphtheria in new-born infants in 1918 and four in 1919. He warns that bacteriologic examination is indispensable for every case of coryza in a young infant and above all when the discharge from the nose shows traces of blood. In one case the nasal diphtheria entailed general sepsis with mixed infection and necrosis of the arm. The snoring breathing is the first symptom to attract attention, and then the thin, slightly purulent discharge running from one or both nostrils. It is often reddish or brownish, and erodes the upper lip. The membranes are generally far back in the nose, but can be easily removed. Becker ascribes the infection to carrier visitors as the most probable source. On this account it is now the rule not to give the child to its mothers to nurse during "visiting hours," and no outsider is allowed in the infants' ward. In a recent compilation of thirty-eight cases the mortality was 31.6 per cent., mostly from complications. In another case the diphtheria settled in the cord.

Dec. 13, 1919, 43, No. 50

*The Other Tube with Tubal Pregnancy. C. U. v. Klein.—p. 1001.
Id. R. Meyer.—p. 1007.
Transperitoneal Cervical Cesarean Section with Premature Separation of the Placenta and Contracted Pelvis. D. Eberle.—p. 1010.

The Other Tube with Tubal Pregnancy.—Klein discusses the best method for preventing further conception in operating for tubal pregnancy, saying that simple ligation of the other tube does not accomplish this nor even excision of a piece of the tube. He has had cases of pregnancy later after both these procedures, and he describes a case of a second tubal pregnancy in the other tube which had been ligated at the first operation. The changes in the tube in consequence of the ligation had evidently afforded a predisposition for embedding of an ovum in the tube. Hence he advises in operating for tubal pregnancy to leave the other tube unmolested, unless time can be taken to render it permanently impermeable, by excision and burying the stump in the uterus wall. Anything less than this may

actually invite tubal pregnancy later. If it is deemed best to shut off the other tube, he advises Madiener's method as the most promising of the rapid procedures, that is, to shut off with ligatures a crushed loop of the tube. Klein's experience with eighty cases of extra-uterine pregnancy includes thirty-two in which sterilization was attempted.

Dec. 27, 1919, 43, No. 52

*Eclampsia and the War. W. Gessner.—p. 1033.
Rieck's Resection of the Uterus. D. Pulvermacher.—p. 1036.

Eclampsia and Wartime Conditions.—Gessner states that the official statistics for Baden show a proportion of from 1.5 to 2 cases of puerperal eclampsia per thousand births between 1910 and 1916, inclusive. In 1917 the births numbered only 29,779, in comparison to the 60,621 in 1914, but the cases of eclampsia showed a still greater proportional decline, there being only 0.8 cases per thousand births. Baden is the only one of the German states that has compiled statistics on eclampsia, but various obstetricians have commented on the proportional drop in the number of cases of eclampsia. At the Hannover maternity eclampsia dropped from 25 cases in 1913 to 23, 13, 10 and 7 during the years of the war. He ascribes this decline in eclampsia to the women's working and exercising more under war conditions rather than to the wartime restrictions in diet, though the latter helped to combat the dangerous accumulation of fat. If the lack of fat and protein were responsible for the falling off of the cases of eclampsia, then cows would never have eclampsia. But cows do have eclampsia, he says, because they are phlegmatic and lazy, and this allows fat to accumulate. As soon as the troops scattered to their homes and the women ceased to be active breadwinners, the old conditions returned, so that the factors keeping down eclampsia no longer prevail. There is every reason to expect, he reiterates, that the eclampsia curve will rise and will never again touch such a low point as in 1918.

The obesity resulting from thyroid or pituitary deficiency was not modified by war conditions, and women with this did not grow thin during the war. Pregnant women of this "fat anemia" type are peculiarly predisposed to eclampsia unless they are given thyroid or pituitary treatment in time. He adds that the war experiences have demonstrated on a huge scale that women exercising and working to the last, and living on a scanty diet, have shorter and easier labor because there are no hindering subperitoneal layers of fat, as under other conditions, and the children are smaller. He explains that the reason why there were any cases of eclampsia during these recent years was that women of means were not obliged to work, and the extensive contraband trade lessened the dietary restrictions for many women.

Zentralblatt für innere Medizin, Leipzig

Dec. 27, 1919, 40, No. 52

*Effect of War Undernutrition on the Bones. A. Koepchen.—p. 961.

War Pathologic Conditions in Bones.—Koepchen comments on the reports which came in first from Vienna, in the spring of 1919, on the peculiar endemic pathologic condition in the bones, resembling rachitis or osteomalacia. Reports soon followed from other points in Germany and Austria, Tübingen, Frankfurt, Breslau, Bonn and Dresden. In his own experience, in the Rhine-Westphalia district, he encountered twenty cases in a few weeks, all in men except three, and inquiry elicited a large number of similar histories throughout the region. All were in young people, and all were of the poorer classes. The combination of severe pains in the bones, edema and a hemorrhagic tendency, and the characteristic light roentgen shadows of the bones and the endemic character, with negative findings in other respects, distinguish this war osteopathy. Influenza cannot be incriminated, as nothing of the kind seems to have been observed in the countries of the Allies, or after preceding epidemics of influenza. It is probably the result of a qualitative starvation of bone tissue, from chronic lack of certain necessary food elements. As he was unable to obtain cod liver oil, he gave merely phosphorus and calcium and found this effectual, the pains in the bones becoming attenuated in a few

days as a rule, only a few not feeling the benefit for a week or two. He cites nineteen reports on the subject in German-Austrian journals.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 25, 1919, 2, No. 17

*Deformity of Chest from Asthma. A. A. H. van den Bergh.—p. 1245.
A Practical Stomach Pump. H. Wigger Boelens.—p. 1251.

*Asphyxia of the Newly Born. P. J. Mink.—p. 1253.

*Colic from Acute Angioneurotic Edema. J. H. Landwehr.—p. 1259.

The Tetrahedron Chest.—Van den Bergh says that he has not found any reference in the textbooks to the malformation of the chest which he describes with illustrations. It suggests a solid with four sides, each an equilateral triangle, the chest projecting in a peak between the nipples. His five patients with this deformity had suffered since childhood from attacks resembling severe asthma, and the strain from these attacks explains the protrusion of the chest and its final persistence in this pyramidal shape. There was no history of rachitis in any instance. One of the patients was a man of 31 and another a boy of 11.

Asphyxia of the Newly Born.—Mink does not accept Kouwer's theory in regard to intra-uterine movements of the fetal respiratory muscles. He insists that the fetal air passages are collapsed, and there can be no lumen. The glottis and the nostrils are also closed. The small arteries are contracted also, as is inevitable when there is no respiration. This is an additional factor in the anemia of the central nervous system. Other factors are the pressure on the head and chest in the birth passages. Respiration is inaugurated, he explains, by the sinking of the diaphragm. The traction from this pulls on the trachea and opens it, and this in turn pulls on the glottis and opens it and the nostrils. The respiration releases the arterioles from compression; they dilate, and blood streams to the respiration center, and the latter then takes charge of the respiration process. He reiterates that when the ordinary stimuli from the mechanical and other changes after delivery are inadequate, tickling the nasal mucosa might prove a potent means to act on the respiration center. As it is vitally important to supply the respiration center with blood, he advises not to cut the cord until after this stimulus has been applied to the nose. Very little time is lost by this, while the mother's blood may turn the scale. If not, the cord can then be cut and the Schultze swinging started. The swinging is merely, he thinks, a strong stimulus to the skin, and irritating the nasal mucosa is an equally potent stimulus. The great importance of this stimulation of the nasal mucosa is best appreciated by comparing the normal nose breathing with breathing through the mouth or tracheal cannula. The lack of the normal stimulus from the nose may be one of the causes of the asphyxia. The excitability of the respiration center at birth may be enough to start respiration, but may not be enough to maintain it when the normal stimulation from the nose is lacking.

Acute Angioneurotic Edema.—In the case reported by Landwehr in a previously healthy woman there was fleeting edema at various points, but each time the edema subsided in about half an hour, not leaving a trace. Eyelids, lips, chin, arms, hands and feet were affected in turn, and finally sudden stormy symptoms indicated that the fleeting angioneurotic edema had attacked the bile ducts, simulating actual gallstone colic. This has occurred on two occasions to date. The swelling of the mucosa of the bile ducts obstructs the flow of bile, and the retention causes the colic pains the same as from retention of other origin. The case is still under treatment. Arsenic, strychnin and quinin have been recommended, with regulation of the bowels and a milk-vegetable diet. The first signs of the edema were noted about four months before date of writing.

Nov. 1, 1919, 2, No. 18

*Scarlatinal Nephritis. M. A. Duyvis.—p. 1339.

The Anti-Birth Control Congress. F. Hers.—p. 1344.

*Correction of Deformed Noses. E. W. de Flines.—p. 1353.

*Vasotomy. Scheffelaar Klots.—p. 1356.

*Triplet Birth with One Living Child. A. ten Doesschate.—p. 1357.

*Abscess in Lung after Tonsillectomy. H. Burger.—p. 1359.

Prognosis of Scarlatinal Nephritis.—Duyvis protests that scarlatinal nephritis does not altogether deserve the bad reputation it has acquired. Recent reexamination of 30 nephritis patients from the epidemic of scarlet fever at Amsterdam in 1906, showed normal kidney functioning in 21 cases. The blood pressure was normal in 5 others who presented intermittent albuminuria, including one suspected of tuberculosis. In 4 others the blood pressure was above normal, and there were traces of albumin in the urine. All of the 30 were in good general health. Not one of the 30 had actual nephritis, and none had died from nephritis in the interim.

Correction of Crooked Nose.—De Flines gives illustrations before and after his correction of "rhinodystasis," congenital or acquired, and describes his technic for this "rhinorthosis" by cutting a wedge-shaped piece out of the upper jaw, on the broader side of the nose, working through the nose and subcutaneously, so there is no scar. The apex of the triangular wedge resected points upward, reaching nearly to the orbit. The bone on the other side is reached in the same way but merely a linear incision is made on this side, slanting from the orbit outward, and the same length as the corresponding side of the wedge on the other side. The nose is then pushed over into its normal place. In doing this, the bony connection with the frontal bone has to be wrenched apart or fractured. He does this with the thumbs both on the small side, and has always succeeded without using instruments. The nose is then modeled, and fastened in its new position with a stout silk thread passed through a hole in the jaw on the broad side and in and out through two holes in the septum, thus pulling the whole nose over into its proper place. He operates under local anesthesia throughout, as also when he merely removes redundant bone to transform an ugly hook nose into an esthetic profile.

Vasotomy.—Klots merely describes this operation "as done by the Americans."

Triplet Birth.—A viable 8 months girl was delivered and then two dead male twins from a second ovum at about the fifth month. This case confirms the assumption that triplets are generally from two ova.

Lung Abscess Following Tonsillectomy.—Burger reviews the literature that has accumulated on this sequel of tonsillectomy since Manges first called attention to it in 1916. He thinks that the possibility of blood-borne infection cannot be excluded, but emphasizes that lack of preparation for the operation may also be a factor. Recovery after long convalescence is usual, but operative intervention has sometimes been necessary, opening and draining the abscess, or resection of the lung. Cott lauds artificial pneumothorax as the most effectual measure in treatment. Burger remarks in conclusion that the data cited confirm the necessity for remaining in bed under medical supervision for a few days after tonsillectomy; also the necessity for the employment of local anesthesia for older children and adults, and in young children the special precautions which every general anesthetic should impose.

Hygiea, Stockholm

Dec. 16, 1919, 81, No. 23

*Mammary Cancer. A. Neander.—p. 937.

Mammary Cancer.—Neander analyzes the experiences at Stockholm with 427 operations for mammary cancer between 1900 and 1914. The 330 radical operations were followed by recurrence in or near the site of the cancer in 165 cases, and only 19 per cent. were living free from recurrence after three years; 28 patients were thus apparently definitely cured. After five years these figures were 16.8 per cent. and 23. The outcome is not known in 84 cases. The immediate operative mortality was 2.1 per cent. He reiterates that 75 per cent. at least of all pathologic conditions in the female breast after the age of 30 are malignant. He discusses the arguments for and against evacuation of the supraclavicular fossa, saying that the 15 patients on whom this was done all died from cancer. Over 66 per cent. of all recurrences developed in or near the old site.

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PROTEIN DIETS AND UNDERNUTRITION IN TREATMENT OF DIABETES

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The modern treatment of diabetes is generally recognized as an attempt to relieve overstrain of a weakened assimilative function by limitation of the diet. In the more severe cases, such relief is most quickly and thoroughly obtained by fasting, either immediately or after a preparatory fat-free diet as proposed by Joslin. This part of the program is usually the simplest for successful accomplishment, and the chief difficulties and chief causes of varying results in the hands of different practitioners are found in the arrangement of the subsequent diet. Excess in total calories has been the commonest mistake and responsible for much unfavorable progress and mortality, as pointed out in the comparison of cases differently treated by different persons in the Rockefeller Institute series.¹ But the proportions of various foods are also highly important for maintaining control of the diabetes with the least possible impairment of health and strength. Some practitioners desiring to avoid the former evils of high protein-fat diets have gone too far toward the opposite extreme with diets excessive in vegetables and deficient in protein and calories. Mosenthal² has outlined diets predominant in protein and emphasized protein as the most important food for maintaining body nitrogen. Equilibrium is known to be possible at widely different levels of nitrogen, total calories and body weight. If active symptoms are to be prevented, the therapeutic problem in each individual patient is to determine the diet which gives the most beneficial nutritive result without overtaxing the assimilative power, the latter being taken as the standard rather than any arbitrary nutritive level.

At the Rockefeller Institute hospital, the diet after fasting generally began with a carbohydrate tolerance test, in the form of a regular addition of 10 gm. of carbohydrate in vegetables daily until glycosuria resulted. The purpose was to establish a standard of tolerance for comparison of different cases and of the same case at different times, and to continue undernutrition while diminishing or abolishing acidosis.

Such a program is really feasible only in an experimental institution, and objections to it may be thus formulated: First, the time consumed is often so great as to be an obstacle to general practical application. Second, during this period there is relative protein starvation combined with a special strain on the carbohydrate assimilation, both of which are better avoided if possible. Third, it is now known both from the clinical experience and from animal experiments³ that relief of the injurious overstrain of the assimilation requires control not only of glycosuria but also of hyperglycemia. A test based only on glycosuria therefore sets a false standard, and is subject to considerable errors through the wide variations of renal permeability.

Five facts may serve for guidance in planning diets after fasting: (a) The total calories at first should be very low and increased gradually. (b) Protein is the most important food. (c) The tolerance for protein is highest when other foods are excluded or closely restricted. (d) The caloric requirement falls with the body weight and may reach a very low minimum.⁴ (e) The tolerance rises as the weight falls; and with exceedingly few exceptions the two curves intersect at some level on which life can be supported.

In a few cases with severe acidosis, a short carbohydrate period may be advisable. But for most cases in private practice it has seemed advantageous to use almost pure protein diets until the blood sugar falls to normal, and then gradually to build up a maintenance diet to such a level as is possible without return of hyperglycemia or marked acidosis. The severity of the diabetes and the quantity of protein that can be tolerated may best be judged by a protein tolerance test as described by Jacobsen,⁵ which is especially useful in some cases for deciding whether the patient is breaking diet. Or, without any formal test, a satisfactory routine is to begin with a small protein allowance and determine the blood sugar occasionally as a guide for the increase. Under any conditions, the ultimate criterion of the severity of diabetes is the level of diet and body weight which can be endured without return of symptoms. The application of the method in question may be illustrated by the following summaries of case records, selected chiefly with reference to some of the practical difficulties.

MILD DIABETES WITH OBESITY AFTER MIDDLE LIFE

CASE 1 (36).—*History.*—A married woman, aged 55, admitted to the hospital, July 30, 1919, with negative family history except for obesity in the father and one brother, had worked hard and was thin up to age of 26, when she moved to America. Here she married and gradually became pros-

1. Total Dietary Restriction in the Treatment of Diabetes, Monograph 11, Rockefeller Institute for Medical Research, 1919.
2. Mosenthal, H. O.; Clausen, S. W., and Hiller, Alma: The Effect of Diet on Blood Sugar in Diabetes Mellitus, Arch. Int. Med. 21:93 (Jan.) 1918. Mosenthal, H. O., and Clausen, S. W.: The Maintenance Diet in Diabetes Mellitus as Determined by the Nitrogen Equilibrium, ibid. 21:269 (Jan.) 1918. Mosenthal, H. O., and Harrop, G. A., Jr.: The Comparative Food Value of Protein, Fat and Alcohol in Diabetes Mellitus as Measured by the Nitrogen Equilibrium, ibid. 22:750 (Dec.) 1918.

3. Allen, F. M.: J. Exper. Med., to be published.

4. Monograph 11, Rockefeller Institute for Medical Research, p. 130.

5. Jacobsen, A. T. B.: Am. J. M. Sc., to be published.

perous and obese. Five children were born to her; there was fever for two months following the birth of the first. One miscarriage occurred at the age of 40; she refused curettage and suffered from profuse menstrual hemorrhages thereafter. A year or two later she began to suffer chronic pains in the joints, especially the knees, which still continue. Five years before admission she was in bed with fever for three weeks; the physicians diagnosed infected uterine fibroids and were on the point of operating when the condition improved spontaneously. Hemorrhages ceased at menopause at about the same time and a small umbilical hernia was discovered which, though retained by a belt, has grown larger and creates much inconvenience. She had complained of "stomach trouble" for the last twenty-five or thirty years, with pain when hungry, generally relieved by food, but sometimes with cramps after eating. There had been continuous slight pain and tenderness in the liver region, and physicians had diagnosed an enlarged liver. She had been a large eater all this time, but denied excesses in sweets. Five years before admission she reached her highest weight of 274 pounds. Pruritus, polydipsia and polyuria then came on, and diabetes was diagnosed about one year later. Lax diet stopped the glycosuria temporarily, but it returned. Three years before, severe neuritis of the right leg kept her in bed for seventeen weeks; it was over a year before she could walk straight, and slight pain still remained. During this time her physicians used only local treatments, without diet restriction. Her weight had been diminishing, and she had become highly neurasthenic. Her complaints on admission were weakness, loss of 16 pounds in weight in the last two weeks, polyuria, pruritus, indigestion with abdominal pain, pelvic pain from fibroids, joint pains, neuritis in the right leg, inconvenience from hernia, and exaggerated nervousness with frequent crying spells.

Physical Examination.—The patient's height was 5 feet, 7 inches, and the weight, 212 pounds. The knee-jerks were absent and the Wassermann test was negative. Other findings were as indicated in the foregoing history.

Treatment.—In addition to heavy sugar, the urine showed traces of albumin but no acetone. After twenty-four hours of fasting, the glycosuria diminished to a faint trace, acetone did not appear, but the plasma sugar was still 0.4 per cent. A diet was begun of 10 gm. of carbohydrate, 50 gm. of protein and 400 calories; glycosuria ceased within another twenty-four hours. August 4, the plasma sugar before breakfast was 0.214 per cent., and the diet was increased to 70 gm. of protein, 20 gm. of carbohydrate and 650 calories. August 9, the carbohydrate was increased to 40 gm., and August 13 the patient was discharged on a diet of 70 gm. of protein, 50 gm. of carbohydrate and 900 calories; the plasma sugar was 0.144 per cent. and the body weight 103 pounds. Occasional slight nitroprussid reactions were present in the urine. Most of the pains and other subjective symptoms had disappeared; there was no complaint of indigestion on the low diet; the strength had improved with the aid of outdoor walking; with the better general condition the distress from the enlarged liver, hernia and fibroids was much less, and the patient felt well and cheerful.

Subsequent History.—August 20, the patient reported, with urine negative for sugar and acetone, but plasma sugar 0.254 per cent.; she was still feeling well. She admitted some laxness in diet, and was admonished to be strict. At her second visit, August 29, the plasma sugar was 0.183 per cent.; September 15, it was 0.152 per cent. The weight fell below 200 pounds, though the diet was gradually increased to 1,500 calories, and the patient had taken minor liberties in addition. The plasma sugar, November 24, was 0.190 per cent., and the patient was urged to be more strict.

The case illustrates the variety of ailments that may result from overeating and obesity. Both for these and for the mild diabetes there is naturally indicated an undernutrition diet containing protein to protect body nitrogen and carbohydrate to prevent any serious acidosis, but deficient in fat so as to compel burning

of body fat. The high renal threshold for sugar shows the unreliability of urine tests as a guide for treatment. The best policy calls for a normal blood sugar; but in view of the age of the patient and the inherent mildness of the diabetes, no undue alarm need be created by moderate hyperglycemia, especially as the analyses after discharge were all taken during digestion. Operation has been suggested for the hernia and possible gallstones if the patient will first reduce her weight sufficiently, but she will probably remain satisfied with her present condition.

MODERATELY SEVERE DIABETES AFTER MIDDLE LIFE

CASE 2 (42).—History.—A man, aged 58, married, manufacturer, admitted, Aug. 2, 1919, with negative family history except for slight obesity in the father and mother, had had scarlet fever at 12, which was his only illness. There was no history of alcoholism or of excesses in food or sweets. Slightly obese from boyhood, he reached his highest weight of 210 pounds four years before. Then he had an acute onset of weakness, and a physician immediately diagnosed diabetes. The diets prescribed were unable to stop the glycosuria and loss of weight; pains in the legs became very troublesome, and in April, 1919, he was referred to me for treatment. He was given general instructions for a diet adequate in protein and low in both carbohydrate and fat, on which glycosuria was absent but hyperglycemia persistent. Instead of improving, he complained of increasing languor. An examination, July 29, revealed a very faint sugar and negative nitroprussid reaction in the urine, with plasma sugar of 0.395 per cent. It was evident that mistakes in the diet at home were subjecting the patient to semistarvation without corresponding benefit, and he was accordingly brought into the hospital, August 2.

Physical Examination.—The patient's height was 5 feet, 8 inches, the weight, 137 pounds. The teeth were much decayed and repaired. The knee-jerks could be barely elicited with reinforcement. The examination was otherwise negative.

Treatment.—The patient insisted on staying as short a time as possible in the hospital. On a diet of 70 gm. of protein, 10 gm. of carbohydrate and 700 calories, the plasma sugar fell to 0.181 per cent., August 7, and moderate nitroprussid reactions were constantly present. With increase of fat to make 1,200 calories, these reactions became heavier and the plasma sugar rose to 0.192 per cent. The patient was dismissed in this condition, August 16, weighing 132 pounds and feeling slightly better. On attempting to work, he became weak and had an attack of indigestion, which alarmed his family so that they brought him back to the hospital, August 22, and persuaded him to stay for more thorough treatment.

On a diet of 40 gm. of protein, 10 gm. of carbohydrate and 1,000 calories, the plasma sugar fell to 0.136 per cent. September 1. Also the blood urea, which had been 52.2 mg. per hundred c.c., fell to 26 mg. The diet was gradually built up, so that the patient by September 30 received 70 gm. of protein, 50 gm. of carbohydrate and 1,400 calories (reduced one seventh by weekly fast-days). The last plasma sugar tests showed 0.147 per cent. fasting and 0.181 per cent. during digestion. The blood urea was 22.8 mg. per hundred c.c. There were constantly slight nitroprussid reactions in the urine. The weight was 128 pounds, and there was a decided improvement of strength and well-being and an absence of pains. The patient was dismissed, October 3, with a reduction of carbohydrate to 30 gm. as a precaution against errors of diet at home.

Subsequent History.—Owing to well-meaning mistakes, the plasma sugar has since varied from 0.115 to 0.277 per cent. It has not been feasible to increase the diet or the weight. The improvement in health has continued, and the patient performs the light duties of his business and asserts that except for some lack of endurance he feels as well as ever in his life.

The case illustrates the frequent difficulties of home treatment even in willing and intelligent households, and the necessity of sufficiently long and thorough supervision and instruction in order to obtain results. It is also an example of the greater or less discomfort and disability which usually result from diabetes even in later life. The case may be classed as moderate in severity, on the basis of the restrictions of diet and weight required. Undernutrition has improved the strength and comfort as well as the prognosis, but the results can never be as good as if thorough treatment had been begun at an earlier stage.

CASE 3 (6).—History.—A man, aged 62, married, lawyer, admitted, July 23, 1919, whose father died at 67 of tuberculosis, mother at 67 of cancer, three uncles of tuberculosis, and a grandmother of acute nephritis, and in whose family there was no record of diabetes or obesity, had passed a very healthy life except for childhood diseases. In 1901 an attack of urinary "gravel" incapacitated him for three days. An intense attack in 1911 terminated with the passage of a stone the size of an orange seed. He had a mild attack of "grip" five years before, but was not subject ordinarily to colds. He was moderate in all habits, and his highest weight had been 195 pounds. For the last two years he had noticed gradually increasing loss of weight and strength, polydipsia, polyuria, irritability of temper, and aching in the legs. A physician consulted in June, 1919, diagnosed diabetes and referred the patient to me for treatment.

Physical Examination.—The patient was 5 feet, 11 inches in height and weighed 138 pounds when dressed. The general examination proved negative except for thinness and heavy glycosuria with slight acetonuria.

Treatment.—Instructions were first given for an approximate diet to be taken at home, guessed to represent about 60 gm. of protein and from 20 to 30 gm. of carbohydrate, with as little fat as possible. Glycosuria ceased within a week, but notwithstanding further restrictions of diet and loss of weight, hyperglycemia persisted, and glycosuria returned whenever an increase of diet was attempted. The patient entered the hospital, July 23, weighing 133 pounds, with negative sugar and slight nitroprussid reactions in urine, and plasma sugar of 0.214 per cent. On a diet of 40 gm. of protein and 10 gm. of carbohydrate, heavier nitroprussid reactions developed, and the plasma sugar, July 28, had fallen to 0.115 per cent. This rapid fall of blood sugar may be attributed partly to the more accurate restriction of diet as compared with that at home, and partly to the preceding month of undernutrition. The diet was rapidly increased to 80 gm. of protein, 20 gm. of carbohydrate and 1,500 calories (reduced by weekly fast-days to about 70 gm. of protein and 1,300 calories average). The patient was discharged thus, August 8, with plasma sugar before breakfast of 0.127 per cent. and negative sugar and moderate nitroprussid reactions in the urine. His weight was 130½ pounds.

Subsequent History.—The patient was rigorously faithful, but there were various minor mistakes in his household, so that later the plasma sugar was found to range from 0.106 to 0.234 per cent. Matters improved after a dietitian took charge of his kitchen for two weeks. The weight fell to 116 pounds stripped, but it was possible to increase the diet to 30 gm. of carbohydrate and 2,000 calories, generally with only 60 gm. of protein because of the patient's distaste for it. The weight thus rose to 119 pounds. The plasma sugars during digestion in the forenoon have ranged from 0.148 to 0.197 per cent. Attempts to increase the diet or weight have resulted in glycosuria and increased ketonuria. Nitroprussid reaction in the urine now remain negative. The patient has been maintained at the level stated in the hope of improvement with time.

In all probability the diabetes in such a case existed in mild form for a number of years before the beginning of noticeable symptoms. At the time of initial treatment, the decline of health and strength was

becoming rapid. The benefit usually felt when diabetes is checked by diet was about balanced by the under-nutrition imposed, so that the patient feels about the same as before treatment. He still carries the full work devolving on him as a prominent lawyer, which he probably could not have done if the diabetes had continued unchecked; but he remains thin, weak, and subjectively unimproved. The chief claim to be made for treatment lies in the prognosis, which can generally be considered good at this age. Overfeeding to the point of marked hyperglycemia and glycosuria damages the prognosis in such a case without building up strength. On the other hand, insistence on rigidly normal blood sugar, necessary in youthful cases, is here unnecessary. For the sake of strength the diet has been pushed to the point of moderate hyperglycemia, and there is hope of falling blood sugar and rising tolerance with time. Though there have never been any symptoms of acute danger, the reason for calling this fairly severe diabetes is the low tolerance, which in six months has not permitted raising the weight above 119 pounds.

SEVERE DIABETES IN MIDDLE LIFE

CASE 4 (25).—History.—A man, aged 43, unmarried, wholesale liquor dealer, admitted, Aug. 4, 1919, whose father died with diabetes at 77, whose mother was well at 72, and who had two brothers and four sisters who were well, and one brother who had epilepsy, stated that mild childhood infections, and gonorrhea at 20, had been his only illnesses. He had eaten three ordinary meals a day and a lunch every night, and was guilty of no excesses in food, alcohol or tobacco. He had always been thin, with an average weight of 115 pounds. In 1917 he experienced loss of weight without other symptoms, and a physician diagnosed diabetes. A diet low in carbohydrate without restriction of protein and fat kept sugar absent for six months, but glycosuria had been present most of the time since, and he had suffered from weakness, loss of weight, polydipsia, polyuria, nervousness, dental caries and inflammation of the gums.

Physical Examination.—The patient's height was 5 feet, 2½ inches, and weight 86 pounds. He was delicate and nervous in appearance, but did not present acute symptoms. The teeth showed much repair, and though scrupulous cleanliness had been maintained by frequent washes and a dentist's care, the gums were everywhere red, very dry, and covered with small, superficial ulcers. There was slight dulness of both lung apices anteriorly and posteriorly, but no active signs of tuberculosis. Knee-jerks were absent. The blood pressure was 84 systolic and 66 diastolic.

Treatment.—Fasting, with the usual clear soup, bran, and agar jellies was begun at entrance on the morning of August 4. The plasma sugar on the morning of August 5 was 0.350 per cent. With continuous fasting to August 12, the urine still showed slight sugar and nitroprussid reactions. There were no signs of danger, and the plasma bicarbonate remained high. The weight had risen by water retention to 89½ pounds. August 13 and 14, a diet of 30 gm. of protein and 135 calories was given. The remaining traces of glycosuria then ceased with a single fast-day, August 15. The plasma sugar was then 0.231 per cent., and the carbon dioxid capacity 69.2 per cent., with nitroprussid reactions positive in the urine but negative in the plasma. August 16, a diet of 10 gm. of protein was begun, increased by 10 gm. daily. Glycosuria appeared with 50 gm. of protein, August 20, and continued on reduced diet, so that fasting was necessary August 23 and 24. An increasing protein diet was again attempted, and glycosuria appeared with 60 gm., August 30. After a fast-day, the plasma sugar on the morning of September 1 was 0.208 per cent. On that day a diet of 60 gm. of protein and 900 calories produced glycosuria, which required two fast-days, September 2 and 3, to stop. On the morning of September 4 the plasma sugar was 0.106 per cent. As such

a rapid fall under such circumstances may be a sign of serious weakness, the diet of 60 gm. of protein and 900 calories was resumed, with the result of slight glycosuria and on the morning of September 6 a plasma sugar of 0.288 per cent. A single fast-day, September 7, brought another sharp drop of the plasma sugar to 0.120 per cent. on the morning of September 8. Thereafter a diet of 30 gm. of protein and 500 calories was tolerated without glycosuria and with only occasional traces of nitroprussid reactions, but the plasma sugar, September 15, was up to 0.238 per cent. It fell by September 20 to 0.120 per cent., and after a fast-day, September 21, to 0.086 per cent. September 22. The diet was then increased to 50 gm. of protein and 700 calories, and by September 27 the plasma sugar had risen to 0.165 per cent. After a fast-day, it was down to 0.130 on the morning of September 29. Though the patient appeared scrupulously faithful and, furthermore, was under close observation, it was deemed prudent to make sure whether his diabetes was actually so severe or whether there was any smuggling or deception. Accordingly, September 29, Dr. Jacobsen⁶ performed a protein test, and it was found, with the patient sitting constantly in the laboratory, that the ingestion of 50 gm. of protein in beefsteak sufficed to raise the plasma sugar to 0.203 per cent. in six hours.

Continued undernutrition, in the form of a diet of 50 gm. of protein and 800 calories, with weekly fast-days, reduced the plasma sugar to 0.079 per cent. on the morning of October 13. About this time the body weight reached its lowest level of 69 pounds. The patient, though very feeble, was always out of bed several hours a day. An increase to 60 gm. of protein and 1,000 calories was now tolerated without hyperglycemia. The diets up to this point had consisted strictly of protein and fat, without thrice-cooked vegetables or any possible source of carbohydrate other than a few bran biscuits. October 20, it was possible to proceed to a diet of 60 gm. of protein, 5 gm. of carbohydrate and 1,200 calories. November 1, the patient was discharged on a diet of 70 gm. of protein, 10 gm. of carbohydrate and 1,500 calories; also the weekly fast-days were mitigated by an allowance of 20 gm. of protein and 5 gm. of carbohydrate. The plasma sugar was 0.118 per cent. The weight was 73 pounds, and the patient was up all day and able to take walks.

Subsequent History.—The patient returned to his home in another state, and was able to carry on his private affairs, though remaining practically an invalid. He came back for examination, December 12, with his general condition as at discharge, though distinctly stronger. Sugar and nitroprussid tests were negative in the urine, and the plasma sugar taken at 10:30 a. m. was 0.152 per cent. This figure, during digestion of breakfast and under the stress of traveling, was regarded as a basis for continuing the same diet.

Even in the absence of acute symptoms at admission, the severity of the diabetes makes it probable that it would cause early death if not controlled. The severe measures used were necessary for controlling such a case. When the last traces of glycosuria are unduly persistent, the initial fast may profitably be interrupted by a few days of low protein diet. The subsequent program consists in feeding chiefly protein to keep up the strength as well as possible, while waiting for undernutrition to lower the weight and raise the tolerance. The undernutrition may thus be carried to a point which might otherwise be dangerous, though in such desperate cases it is always necessary to be on the watch for threatening collapse. The skilful use of soup, coffee, agar, bran, cellulose⁷ and other materials of little or no food value is an important aid against suffering from hunger. The result in this case was as good as could be expected under the conditions. The teeth and gums

were quickly brought to normal, and the trouble from diabetes is now limited to emaciation and weakness. The patient is comfortable as a semi-invalid, and much pleased with his present feelings as compared with the former state of active diabetes. The question remains open how long this condition can be maintained.

POTENTIALLY SEVERE DIABETES IN YOUNG ADULT

CASE 5 (70).—*History.*—A man, aged 28, married, carpenter, admitted, Oct. 6, 1919, whose parents were living and well, knew of no heritable disease in the family. Three brothers and two sisters of the patient died in infancy of unknown cause. His wife and two children were well. He had measles, mumps, chickenpox, whooping cough and diphtheria in childhood. Then he was well until 1912, when he had severe typhoid with three relapses, being dangerously ill in bed for fourteen weeks. Since then he had had vague umbilical and lumbar pains about once a week, not related to meals, which came on especially if he maintained a stationary position, and were relieved by exercise. Jaundice or clay-colored stools were never noticed. He had had regular habits and had eaten heartily in his occupation as a carpenter, chiefly at outside work. He reached his highest weight of 160 pounds during convalescence from typhoid, and thereafter maintained an ordinary weight of 145 pounds. Three weeks before admission his weight was found to be only 137 pounds; he had a severe acute rhinitis with headaches, followed within two days by distinct onset of polyphagia, polydipsia and polyuria. The physician, who was called immediately, diagnosed diabetes, but prescribed lax diets, largely of milk and eggs, on which active symptoms and loss of weight continued.

Physical Examination.—The patient's height was 5 feet, 9¼ inches; his weight, 126 pounds. He was tanned and muscular, and appeared healthy except for moderate thinness. There was marked cervical adenopathy. The knee-jerks were normal. The examination was otherwise negative.

Treatment.—Glycosuria ceased with two days of fasting, while the slight ketonuria increased. From an original 0.357 per cent. the plasma sugar fell rapidly to normal and remained so on a diet of protein alone, beginning with 30 gm. and increasing to 70 gm. October 13, the diet was made 70 gm. of protein, 20 gm. of carbohydrate and 1,200 calories, and increased, October 20, to 70 gm. of protein, 40 gm. of carbohydrate and 1,500 calories. The plasma sugars before breakfast ranged from 0.100 to 0.114 per cent., but one reading taken two hours after lunch was 0.187 per cent. Nevertheless, as the patient was in a hurry to leave, he was discharged, October 26, in the hope that he would improve further.

In the short hospital period he had not become sufficiently impressed with the necessity of exactness, and at home committed several minor indiscretions which caused glycosuria; and though this was checked by fasting and reduced diet, the plasma sugar remained high, and he was therefore readmitted to the hospital, November 27.

Injury to the tolerance was evident, for on a diet of 30 gm. of protein and less than 300 calories the plasma sugar fell slowly to 0.172 per cent., December 1, and 0.110 per cent., December 6. It remained thoroughly normal while the diet was gradually built up through the ensuing weeks to 70 gm. of protein, 30 gm. of carbohydrate and 1,650 calories, on which the patient was dismissed, January 22, weighing 128 pounds.

The pancreatic damage probably dates from the typhoid infection. Glycosuria presumably began some time between this and the first observed diabetic symptoms. The severity of the diabetes was still moderate at admission, but relapse was quick owing to the slight impression made by a short hospital period. The instruction in testing the urine for sugar proved important, as an effectual danger signal was thus given. The longer second period in the hos-

6. Jacobsen, A. T. B.: *Am. J. M. Sc.*, to be published, Case 5.

7. An indigestible cellulose flour, still on a somewhat experimental basis, produced by the Dietetic Cellulose Laboratory, 2557½ West Chicago Avenue, Chicago.

pital established a safer condition on a higher diet. The weight is lower than at admission, but stationary instead of falling. The patient is strong enough to work, but the caloric requirements of manual labor constitute a problem in a case having the elements of severity.

THE EARLY STAGE OF INHERENTLY SEVERE DIABETES IN YOUTH

CASE 6 (61).—History.—A youth, aged 19, a dealer in antiques, unmarried, admitted, Oct. 3, 1919, whose mother and one aunt had diabetes, had a healthy life and excellent habits. There was slight obesity. He had measles in childhood, malaria three years before admission, and influenza in the fall of 1918. During the first week of September, 1919, he noticed onset of weakness, polyphagia, polydipsia and polyuria. After steady loss of weight, he consulted a physician, September 25, who discovered heavy glycosuria and prescribed a carbohydrate-poor diet. Glycosuria rapidly diminished so that only a trace was present at admission.

Physical Examination.—The patient's height was 5 feet, 6 inches, and weight, 143 pounds. The patient appeared in good health and nutrition, and normal to all examinations.

Treatment.—After one day of fasting, glycosuria was absent and the plasma sugar was 0.134 per cent. The first day's diet was only 10 gm. of protein, increased by 10 gm. daily to 60 gm., October 8. The urine showed slight to moderate nitroprussid reactions during this time. Carbohydrate was then added, first 10 gm., increased to 40 gm., so that by October 11 the nitroprussid test was negative. The plasma sugar before breakfast, October 13, was 0.106 per cent. Up to this point fat had been so strictly excluded that the highest diet had not been above 500 calories. Fat was now introduced to make 1,000 calories, and increased by October 20 to 1,500. The occasional faint nitroprussid reactions thus produced were ignored. The highest plasma sugar observed was 0.149 per cent. during digestion in the afternoon. The patient was discharged, October 24, on a diet of 70 gm. of protein, 40 gm. of carbohydrate and 1,500 calories. His weight was then 136½ pounds.

Subsequent History.—The patient resumed his regular work and was strictly faithful to diet. The urine remained normal except for occasional faint nitroprussid reactions, but there was difficulty with the blood sugar, such as is frequently encountered shortly after patients return home. In samples taken forenoons during digestion, the highest plasma sugar found was 0.192 per cent., and the lowest 0.150 per cent. The diet was therefore reduced to 60 gm. of protein, 20 gm. of carbohydrate and 1,200 calories, with weekly fast-days. The body weight has thus fallen to 130 pounds, but the plasma sugar does not exceed 0.14 per cent. It will be required to remain below this level during digestion of all meals, and below 0.12 per cent. fasting, even if more weight has to be sacrificed. The patient meanwhile continues his regular work, looks distinctly thin, is a little below full strength and not completely satisfied in his appetite, but never suffers actual hunger.

It is hoped that a diet of 1,500 calories may soon be tolerated; but it is believed that the case represents the early stage of inherently severe diabetes, and that any overfeeding which would give an appearance of increased well-being at the price of hyperglycemia would prove disastrous. A longer period of hospital treatment would have been advantageous. The principal lesson, however, is the strict care which is necessary even in an incipient case, and the irremediable downward progress that would result from depending on urine examinations and ignoring the signs of overtaxed function evident in the blood.

JUVENILE DIABETES IN STAGE OF MODERATE SEVERITY

CASE 7 (44).—A boy, aged 5, admitted Aug. 31, 1919, whose parents and two brothers were well, though both grand-

fathers and the paternal grandmother had diabetes, had always been a vigorous, active child, plump but not obese. Measles at 3 years had been the only illness. He was not subject to colds or tonsillitis and indulged in no excesses in sweets. He had an infected wound of the face in May, 1918. Jan. 12, 1919, his mother noticed polyphagia, polydipsia and polyuria, and found that his weight had diminished by 2 pounds. The physician found 7 per cent. glycosuria, and treatment was begun at once. A two day fast produced sugar freedom, and carefully restricted diets were used thereafter, but glycosuria kept returning at frequent intervals. The weight at onset was 38½ pounds, and it had increased to 42½ pounds. During the last month glycosuria had occurred every few days, and the patient was referred for treatment on this account.

Physical Examination.—The patient was a well developed, handsome child, apparently in perfect health and nutrition. He had left cervical adenopathy, supposedly the result of the face wound. The knee-jerks were normal and the Wassermann test negative. Examination was otherwise negative.

Treatment.—The urine was free from sugar, but showed continuous heavy nitroprussid reactions. The plasma sugar before breakfast was 0.120 per cent. September 1, a diet of 50 gm. of protein was begun, and from September 2 an addition of 10 gm. of carbohydrate was made daily, while fat was excluded as far as convenient. September 9, glycosuria appeared with 80 gm. of carbohydrate, while slight nitroprussid reactions still persisted. No fasting was imposed, but the foregoing program was repeated, and glycosuria returned when the increase of carbohydrate reached 60 gm. September 16, the nitroprussid reactions had become faint. A diet was then begun of 60 gm. of protein, 45 gm. of carbohydrate and 600 calories, with weekly fast-days. The plasma sugar, September 20, was 0.102 per cent. As a skilled diet nurse was available, the parents were allowed to take the child home at this stage. The weight was 39 pounds.

Subsequent History.—September 28, the plasma sugar before breakfast was 0.15 per cent. Unduly high figures continued thereafter, notwithstanding a temporary reduction of diet to 40 gm. of protein, 20 gm. of carbohydrate and 450 calories. Attention was then given to the fact that the office visits involved a long automobile ride from the home in the country, with some attendant excitement; and by keeping the child over night at the hospital, normal sugar values have been obtained both fasting and during digestion. The nitroprussid tests are continuously negative. The child holds an even weight, 3 or 4 pounds below that at admission. He still looks well and is active, but yet is weaker as well as thinner than when received, and the fast-days are especially depressing. The diet is now being gradually increased, and gain of strength is to be expected if a sufficient ration can be tolerated.

The physician in charge had succeeded in keeping this child in an appearance of perfect health and strength during one year of diabetes, and also the plasma sugar before breakfast was normal. The overprosperous appearance had been maintained by the liberal use of fat. The tolerance had now fallen so that glycosuria was increasingly frequent from the small quantities of carbohydrate employed. At the same time there was marked continuous ketonuria, even though the plasma bicarbonate was still normal. Continuance of the high fat diet involved three possibilities: If the carbohydrate should be diminished, the acidosis would increase; if the carbohydrate should be continued the same, the increasing glycosuria would soon bring still greater acidosis; if the carbohydrate should be increased, it would give a temporary diminution of acidosis at the price of a rapid breakdown of assimilation followed by the most dangerous acidosis of all. Therefore the program adopted was to exclude fat, to give 50 gm. protein for maintaining strength, and to take advantage of the increased tolerance gained by undernutrition for the purpose of pushing

carbohydrate so as to abolish acidosis. This result was slow and difficult to attain, because the excess in fat had been so long. The only benefit of the treatment to date has been the clearing up of glycosuria and acidosis, at the price of a certain amount of weight and strength.

The expectation now is to add to the diet so far as possible without a return of hyperglycemia or ketonuria. Some degree of thinness is inevitable from the nature of diabetes, but the family, especially the mother, hold the ideal of a fat child. Though the child does not now appear pathologically thin to a casual observer, this insistence on fattening is likely sooner or later to ruin the entire result in this case.

This case is presented as illustrating some of the practical difficulties of treatment. A diabetic child is not a well child and is often irreparably injured by the attempt to keep it appearing like a well child. Without hazarding a prediction of the ultimate outcome, there is now firm basis for two assertions concerning the possible benefits of thorough treatment of juvenile cases from the earliest stage: first, the three year limit of life no longer holds; second, comfort and happiness are greater than when active diabetic symptoms are permitted. As the diabetes is not cured, these benefits are purchased at a price. For the child, this is continuous undernutrition corresponding to the severity of his diabetes. For the household, the presence of an ailing child who is known to be incurable, the constant exact care of the diet or the keeping of a nurse for the purpose, and the nervous tension associated with the various vicissitudes and tests, constitute a serious burden. Obviously, this is no worse than the situation existing with many forms of chronic disease. With mothers of the old-fashioned type, it is possible for the child to receive correct care for an indefinite period with little disturbance of the home life. Some records of favorable progress and longevity, illustrating the brighter possibilities of juvenile diabetes, may be published later.

Half-measures are hopeless in children. It is fair to ask that those who believe in high diets should follow them consistently, and not merely through the mild stage when temporary weight and comfort are so easily maintained at the price of irremediable injury and subsequent suffering. If thorough control of the diabetes is the policy chosen, normal urine and blood should be insisted on from the time of the earliest diagnosis, for only thus can the best prognosis along with the best lasting nutrition be attained.

SEVERE JUVENILE DIABETES

CASE 8 (23).—*History.*—A schoolboy, aged 15, admitted Aug. 5, 1919, with family and personal history negative, had always been fat, while both parents were spare built. In January, 1918, it was first noticed that he was losing weight. He was taken from school and given abundance of milk and nourishing food; intense polyuria and polydipsia developed. The curious feature was that several urinalyses by the family physician and one by a commercial laboratory were reported negative, and no diagnosis was made until, in May, 1919, failing vision sent him to an oculist, who diagnosed double diabetic cataract and referred him to a consultant, who found 4 per cent. glycosuria. The weight, which had originally been 96 pounds, remained above 75 pounds up to this time, and then began to fall rapidly. Finally the patient was taken to a hospital in desperate condition, July 14, and subjected to fasting, but sugar-freedom was found difficult and heavy glycosuria returned with every attempt to feed. In consultation, July 31, there were found heavy sugar, nitroprussid and ferric

chlorid reactions in the urine, blood plasma creamy with fat, plasma sugar 0.441 per cent., and carbon dioxid capacity 68 per cent. by volume. The last figure was largely explained by the use of alkali; the plasma gave a heavy nitroprussid reaction. Weakness and emaciation were extreme but not actually critical. Alternation of fasting and very low protein diet was advised. The patient was transferred, August 4.

Physical Examination.—The boy's height was 5 feet 6¾ inches, his weight 66 pounds. Except for emaciation, cataracts and absent knee-jerks, examination was negative.

Treatment.—The urine at admission showed only slight sugar and nitroprussid reactions. The plasma sugar was 0.410 per cent., the carbon dioxid capacity 76.8 per cent. by volume. There was no visible lipemia, and only a faint nitroprussid reaction in the plasma. Notwithstanding the serious weakness, fasting was continued from August 4 to 12, with only thin soup, coffee and agar jelly, bran being omitted for fear of its possible carbohydrate. The renal permeability was peculiar, for while only traces of glycosuria, too small to titrate, were present at admission with plasma sugar of 0.410 per cent., these traces continued with plasma sugar, August 12, of 0.259 per cent. August 13 and 14, 30 gm. of protein and whisky to make 300 calories were given daily, with resulting gain of strength and fall of the plasma sugar to 0.205 per cent. A trace of glycosuria was still present, but ceased on fasting with whisky, August 15. The same program was continued, August 16. Whisky was then stopped, and protein alone given, August 17, 20 gm.; August 18, 30 gm.; August 19, 40 gm. Slight glycosuria then resulted, with plasma sugar of 0.250 per cent. It was then attempted to keep the protein at 25 gm. and increase calories with fat to 600; but glycosuria with plasma sugar of 0.268 per cent. resulted, August 23. With a single day of fasting and whisky, August 24, the plasma sugar fell to 0.188 per cent. A diet of 15 gm. of protein and 400 calories was then given for a week, and, August 31, the first fast-day without glycosuria was given; the plasma sugar before it was 0.192 per cent., and after it 0.150 per cent. The same diet with weekly fast-days was continued, and the plasma sugar after the fast-day of September 7 was 0.127 per cent., and after the fast-day of September 14 it reached the normal level of 0.115 per cent.

The diet was gradually increased to 30 gm. of protein and 700 calories, without glycosuria and with only faint traces of ferric chlorid reactions, notwithstanding the strict exclusion of carbohydrate. In spite of the long undernutrition, the weight tended to rise by invisible water retention, and, October 15, reached its highest point of 72½ pounds. The strength improved correspondingly, and the boy was out of bed all day. Also, October 3, the more advanced cataract was uneventfully removed, and no retinitis found behind it. The clear vision of one eye in place of the former almost complete blindness contributed most of all to the patient's happiness. But the plasma sugar after the fast-day of October 12 was up to 0.192 per cent., and the calories were therefore reduced to 500, leaving the protein at 30 gm. After October 20, 5 gm. of carbohydrate was given daily. The plasma sugar before breakfast, October 25, was 0.155 per cent.; after the fast-day of October 26, it was 0.125 per cent. It was 0.097 per cent., October 31, and the diet was therefore increased to 30 gm. of protein, 10 gm. of carbohydrate and 600 calories. The plasma sugar was 0.12 per cent. on the morning of November 10, but gradually rose to 0.174 per cent., November 19. The carbohydrate was therefore diminished to 5 gm. On this diet, plasma sugars before breakfast were obtained as follows: November 29, 0.139 per cent.; December 5, 0.128 per cent.; December 10, 0.142 per cent. With a view to improving strength, the diet was changed to 40 gm. of protein and 600 calories, and later increased to 50 gm. of protein and 650 calories. This regimen has continued to the present. The plasma sugars have held about the same slightly elevated range of values as stated. Even on salt-free diet to remove edema, the weight has not fallen below 67 pounds, which is 1 pound above the entrance weight. Both sugar and nitroprussid reactions are continuously negative in the urine.

Unfortunate delays in the diagnosis of diabetes are still encountered even among practitioners of good repute, but are becoming less frequent. The damage in such a case is irreparable. The boy remains emaciated, weak and always more or less hungry. It is inconceivable that he should live to maturity, and during life he is cut off from practically all normal pursuits. Favorable features in his treatment may be thus enumerated: Actual suffering from hunger is prevented by the use of materials to furnish bulk (bran, agar, cellulose, "India gum," liquid petrolatum, soups, small quantities of thrice boiled vegetables), without which such low diets would scarcely be practicable. The boy has become strong enough to keep the average hours of a normal boy, and to go walking or riding every day, his pedestrianism amounting to 6 or 8 blocks without weariness.

Operations may be performed with safety, and wounds heal well when diabetes is controlled even at this extreme stage; therefore the sight of one eye could be restored and the same can be done for the other at the proper time. Having exceptional artistic talent, the boy now is able to keep himself constantly amused with drawing and painting. He has a naturally cheerful disposition, and though an invalid, his continuous enjoyment of life is genuine and not pretended.

Such cases suggest the possibilities open when thorough treatment is employed from the earliest stages.

SUMMARY

A possible form of low-calory diet after fasting is one composed wholly or chiefly of protein, and this plan has seemed to be most useful for maintaining strength during the period of undernutrition necessary for attaining a normal blood sugar. In some elderly patients slight hyperglycemia and nitroprussid reactions may be permissible to avoid undue hardships, but diabetes after the age of 40 is by no means always benign, and not infrequently requires stringent measures to control it, especially after long neglect. The more severe the diabetes and the younger the patient, the more rigorously should hyperglycemia and all other symptoms be controlled from the outset. Such a policy often means a considerable reduction of weight and strength as compared with the level which can be maintained temporarily by higher diets, and its justification depends on the belief that patients are best off in the long run when their weakened function is spared as thoroughly as possible.

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Alcoholic Hair Tonics.—Assurance of 100 per cent. cooperation in the enforcement of the prohibition laws were given by representatives of the barbers' supply and perfumes trade organizations at a hearing before Prohibition Commissioner John F. Kramer and officials of the Bureau of Internal Revenue to discuss ways and means for rendering certain alcoholic preparations now on the market undrinkable. After Jan. 16, 1920, the date the national prohibition act becomes effective, such preparations cannot be legally manufactured or sold if fit for beverage purposes. Dr. A. B. Adams, chief chemist of the Bureau of Internal Revenue, declared there are on the market many hair tonics whose principal ingredient is alcohol and that they are hair tonics in name only. Such preparations must be modified to conform to the law. The bureau has under consideration a requirement that in the manufacture and sale of bay rum there be added a quarter of a grain of tartar emetic for each fluidounce.—*United States Bull.*, Dec. 8, 1919.

THE FEEDING OF NORMAL INFANTS DURING THE SECOND YEAR

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Whether or not it has been nursed or fed artificially, a baby, when it is a year old, will be taking, in most instances, whole milk or whole milk with a cereal diluent. If it follows the present fashion, it will almost certainly be receiving orange juice in addition. It will probably be taking some of the simple cereals and perhaps broth and beef juice. If it is being fed properly, it will not, in my opinion, be given anything else.

NEED OF CEREALS AFTER FIRST YEAR

If the baby is not getting cereals when it is a year old, they should be given at once. The simplest and most digestible cereals are barley jelly, oat jelly and farina. They should be given at the beginning of two feedings daily with milk and salt, but no sugar. Cream should never be given to babies, and sugar is unnecessary. It is idle, of course, to say that a little sugar will do harm. Almost all babies and children are, however, fond of sugar, and the tendency of almost all children is to take more sugar and sweets and to refuse foods that are not sweet or sweetened. The most common cause of indigestion in childhood is sugar and its products. If the baby is taught from the first to eat things without sugar, it learns to like them in this way and, as it grows older, is willing to eat proper food. Much trouble in the future is thus avoided if babies are never given sugar or sweet foods. Cream of wheat, Ralston and rice may be given after a few months, and it is not necessary to strain the oatmeal after the baby is 18 or 20 months old. Cereals that are not cooked in the house and the sweet cereals should never be given to babies.

BROTH AND BEEF JUICE

If the baby is not already receiving broth and beef juice, these should be given at the beginning of another feeding when the baby is a year old or soon after. Chicken and lamb or mutton broth are much more digestible than beef broth. Not more than 4 ounces should be given at a feeding, because of the danger of "filling up" the baby and destroying its appetite for more nutritious food, the value of clear broth being practically nil. The expressed beef juice is far preferable to any other form. Not more than 2 teaspoonfuls should be given at first, and never more than 2 ounces before the end of the second year, because beef juice makes many babies nervous and sleepless. It must not be forgotten in this connection that the nutritive value of beef juice is only about half that of an equal quantity of milk.

ZWIEBACK, BREAD AND RICE

A month or two after broth and beef juice have been started, zwieback, bread crumbs and rice should be given in them. If the baby has a sufficient number of teeth to enable it to chew properly, it may be given zwieback, toast bread, stale bread or plain white cracker "in its hand" to eat after one or more feedings. It should never be given these things between feedings, because it is of great importance for the baby to acquire early the habit of eating only at meal times.

Bread and crackers may also be given in milk or in the form of milk toast or cracker milk toast in place of, or in addition to, the cereal at the last meal of the day.

LAXATIVES

It is probably advisable, although not usually necessary, to continue the orange juice, especially if there is a tendency to constipation. If there is, prune juice or pulp and baked apple may be given instead of, or in addition to, the orange juice. The orange juice should be given an hour before some feeding, and prunes and baked apple at the end of some feeding.

Plain boiled macaroni, preferably riced, may be added to the diet at 15 or 16 months. At this time, or a little earlier, the milk at the midday meal may be given in the form of junket or plain blanc mange. It is most unwise, I believe, to begin potatoes before the baby is a year and a half old. Throughout infancy they should be given only when baked, and then sparingly. There is apparently no other form of starch so hard for the baby to digest and so likely to cause fermentation.

THE USE OF EGGS

It is also unwise, in my opinion, to give eggs before the baby is eighteen months old. Half an egg may then be given once or twice a week, and a little later a whole egg three times a week. In my experience, few babies can take more without being disturbed. If babies can take eggs without disturbance, a number of other articles that are made with eggs can then be added to their diet. These are baked custard, rice pudding and bread pudding. Eggs should be given to babies coddled, soft-boiled, dropped or poached and in no other ways.

MILK AS THE BASIS OF DIET

Milk should form the basis of the diet during the second year, and an important part of the diet for several years longer. It is probably wise to limit the amount of milk to a quart daily. This quantity provides enough nourishment to cover a considerable part of the caloric needs. If more is taken, it is likely to destroy the appetite for other articles of food.

MEAT AND GREEN VEGETABLES

The diet outlined above is all that is necessary or advisable for the average, normal infant up to the end of the second year. At this time I add meat to the diet and sometimes green vegetables. Ordinarily, however, I wait some months longer before adding the green vegetables. The most easily digested meats are the white meat of chicken, lamb chop and scraped beef. These are, therefore, given first. The most easily digested vegetables are, in my experience, spinach, string beans, peas, asparagus and stewed celery. The spinach, string beans and peas should always be rubbed through a sieve or a colander. Carrots are much less digestible and should always be mashed. My subject, however, is the diet of the normal infant during the second year, and infancy ends with the close of the second year. I must not, therefore, further consider any articles of diet that, as I believe, should not be given until infancy is passed.

THE LIBERAL DIET

I am well aware that the diet which I have outlined is old fashioned and that many, perhaps the majority, of pediatricians and practitioners feed much more

liberally. I know that many give green vegetables to babies that are artificially fed when they are only 6 months old. Some of them may give them also to breast-fed babies. I do not know. I know that many give eggs and meat at a year and feed babies of 2 years more liberally than I would feed children 4 or 5 years old. Why is it that so many pediatricians feed babies so much more liberally than was the custom some years ago? Are there any good reasons for the change, or are they blindly following a new fashion? Do the babies do any better when they are fed so liberally, or do they thrive better when they are fed simply? If they do better on one system than the other, why do they? If they do not, why do they not? Ought those who feed simply to adopt the newer and more liberal methods, or ought those who feed so liberally go back to the simpler methods of their elders?

It is very difficult to answer these questions on the basis of clinical experience. My own experience has been that babies thrive on the simple diet that I have outlined. The not inconsiderable number of babies brought to me because they are not thriving on the liberal diets prescribed by other pediatricians convinces me that some babies, at least, do not do well on these liberal diets. These babies do well, however, when given simple diets, which would seem to show that the simple diet is better and that the babies which do well on a liberal diet do so in spite of the diet rather than because of it. I have no doubt, on the other hand, that other men may have seen babies which were not doing well on the simple diets prescribed by me and which did well at once on the more liberal diets that they ordered. They would, of course, draw entirely different conclusions from their experience than I would from mine. Would either of us, neither of us or both of us be justified in our conclusions? I am inclined to think neither of us.

WHAT NATURE TEACHES US

Does Nature teach us anything of value as to the solution of this problem? Very little. As Nature provides a supply of breast-milk sufficient under normal conditions for the needs of the baby for nearly a year, it seems evident that Nature did not intend breast-fed babies to have eggs, meat and green vegetables when they were 6 months old. Nature teaches us nothing, however, as to what the baby should eat after it is a year old or what an artificially fed baby should have to eat during the first year, except the general indications afforded by the composition of human milk. These are that the baby's digestive powers are best fitted to take care of a dilute food relatively high in fat and carbohydrates and relatively low in proteins, with the protein in an easily digestible form. It would seem reasonable on the basis of these indications to believe that artificially fed babies should be given a simple diet along these lines rather than a diet that makes demands on the digestive powers for which they are apparently not fitted. We are, nevertheless, not justified in drawing too definite conclusions as to what indications Nature gives us as to the feeding of babies, as is shown by what we know of starch. There is no starch in human milk, and it would seem, therefore, as if a baby could not digest starch. Nevertheless, we have found that the power of starch digestion is well developed at birth, and that babies have no disturbance of digestion when mod-

erate amounts of starch are added to their foods. We must be careful, therefore, in drawing conclusions from what Nature seems to teach us as to the artificial feeding of babies.

IS THE SIMPLE DIET SUFFICIENTLY NUTRITIOUS?

Rather than to attempt to prove at once that the simple diets are preferable to the more liberal, it seems to me better first to ask what arguments those who believe in the liberal diets are likely to advance in their favor. It seems to me that they may claim that the simple diet is not sufficiently nutritious; that it does not contain a sufficient amount of certain elements, such as vitamins and salts, necessary for the well-being and development of the baby, and that it tends to the development of constipation, while their liberal diet corrects all the deficiencies of the simple diet. They certainly cannot claim that the liberal diet is more digestible than the simple diet. It is self-evident that it is not, and it must be admitted without question that whatever advantage there may be in easy digestibility lies with the simple diet.

Let us take up first the nutritiousness of the diet; that is, its caloric value. The caloric needs of the average baby of a year are at a liberal estimate not over 1,000 calories daily and of a baby of two years not over 1,200 or 1,300 calories. The quart of milk which is recommended in the simple diet provides 670 of these calories. Two or three tablespoonfuls of cereal, a slice of bread and the juice of an orange will bring the total up to 1,000 calories. If there is no lack of calories in the simple diet at the beginning of the first year, there will certainly be no lack later, when the diet is increased. The protein needs of babies in their second year vary between 20 and 30 gm. daily. A quart of milk contains 34 gm. It is evident, therefore, that the simple diet outlined amply provides for the caloric needs of babies in the second year and more than covers their protein needs.

THE VITAMINS

Now as to the argument that the simple diet may not contain enough vitamins, or accessory food factors: The fat of milk contains an abundance of the fat soluble A. If a baby takes a quart of milk daily, it will have no lack, therefore, of this element. Milk is also rich in the water soluble B. A baby that takes a quart of milk will thus also be amply provided with this element. It will, moreover, get a certain amount of these elements in its other food. Judging from the fact that babies grow satisfactorily on an exclusively milk diet during their first year, it seems reasonable to believe that milk contains a considerable amount of the hypothetical growth vitamin. A quart of milk daily will presumably furnish enough of this in the second year. Milk is known to be low in antiscorbutic power. Nevertheless, a pint of milk contains enough antiscorbutic element to prevent the development of scurvy during the first year. A quart of milk would be expected to furnish enough during the second year. If the baby is taking orange juice, moreover, the question of the antiscorbutic power of the rest of the diet will never arise.

MINERAL SALTS

The salts which may reasonably be considered in this connection are those of calcium, phosphorus and iron. The average amount of calcium retained by

infants is between 0.17 and 0.18 gm. daily. One liter of cow's milk contains from 1.65 to 1.98 gm. of calcium oxid.¹ Other figures given are that infants require 5 grains of calcium daily, and that a quart of milk contains 22 grains.² Next in calcium content come eggs; then the cereals, especially rice; then some of the vegetables, such as radishes, asparagus and spinach. Foods poor in calcium are meat, fish, bread, fruits and potatoes. It is evident, therefore, that the baby that gets milk will not suffer for lack of calcium. Furthermore, eggs and cereals contain more calcium than do the vegetables.

Milk contains so much more phosphorus than the baby can possibly utilize that it is not necessary to consider this element further.

I have been unable to find any figures as to the needs of babies for iron. A liberal estimate of the adult's need of iron is 0.015 gm. daily. Taking the average weight of the adult as 150 pounds and that of the average baby between 1 and 2 years of age as 25 pounds, the infant's requirement will be one sixth of the adult's, or 0.0025 gm. daily. Milk is a food notoriously low in its iron content. Nevertheless, a pint of milk contains 0.0009 gm. of iron, and a quart 0.0018 gm. of iron, or more than two thirds of a baby's daily needs. An ounce of beef juice contains 0.00198 gm. of iron. The value of this iron is, however, probably not as great as it would seem to be, because the iron contained in hemoglobin and its derivatives is very poorly absorbed. The yolk of an egg contains 0.0015 gm., three tablespoonfuls of cooked cereal 0.0009 gm. and one and one-third slices of bread 0.0003 gm. of iron. It is quite evident, therefore, that the baby taking the simple diet will not lack for iron. Furthermore, the iron content of the green vegetables is not as great as would seem from their color. An ounce of fresh spinach contains 0.00094 gm. of iron; 1 ounce of string beans, 0.00047 gm.; and 1 ounce of carrots, 0.00023 gm. These figures have been calculated from the tables given by Carter, Howe and Mason.³ Moreover, it would seem more reasonable, provided the simple diet did not contain enough iron, which it does, to give the baby some preparation of iron than to take the chance of upsetting the baby's digestion by giving green vegetables. The argument which may be raised by some that the iron in the green vegetables, being organic, would be better utilized is erroneous, because it has been conclusively proved that organic and inorganic iron are equally well utilized.

THE NEED OF BULK

Now as to the question of constipation: It is true that green vegetables act as laxatives by increasing the bulk of the intestinal contents and perhaps also by certain irritating elements stimulating intestinal peristalsis which they may contain. Bulk is not lacking, however, in the simple diet, for milk provides a considerable residue. Orange juice, prune juice and baked apple are as good laxatives as green vegetables and less likely to disturb the digestion. There is, therefore, not likely to be any necessity for the use of the green vegetables for the relief of constipation.

1. Morse and Talbot: *Diseases of Nutrition and Infant Feeding*, New York, the Macmillan Company, 1915.

2. Hutchinson: *Food and Dietetics*, New York, William Wood and Co., 1917.

3. Carter, Howe and Mason: *Nutrition and Clinical Dietetics*, Philadelphia, Lea and Febiger, 1917.

THE SIMPLE DIET VINDICATED

The arguments that it was thought might be advanced by the believers in the liberal diets against the simple diet in favor of the liberal diets have, therefore, no basis in fact. What other explanation can there be of the present tendency to increase the diet so rapidly during the latter part of the first and the second year of life? It can be traced back to the time, I think, when the majority of physicians in this country accepted without question and without thought everything that came from Germany. German babies were given sausages and sauerkraut; consequently they believed that American babies ought also to take them. Another possible reason is the general tendency of physicians, especially young ones, to believe that everything which is new is right and everything which is old is wrong. Physicians are in general altogether too willing to accept any new teaching as true, if it is new or different. This, to my mind, is wrong. We should not discard the old and tried in favor of something new, simply because it is old, and should not accept the new until it has been proved to be better than the old. We must not forget that there are fashions in medicine as well as in dress, and that the new fashions are often no improvement on the old. On the other hand, we must be open-minded and be willing to accept the new when it is better than the old and not reject it because it is new. I have tried to be open-minded on this question of diet for babies during their second year, but perhaps I have not succeeded. My conclusion after due consideration, observation and experience is that the old fashioned simple method of feeding is better and safer than the newer and more liberal diet.

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THE DIAGNOSIS OF HEART DISEASE
IN YOUNG PEOPLE*

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One of the most important lessons that the civilian physician learns from his army experiences is the need of more accurate diagnosis of heart conditions in young people. A discussion of this subject is particularly apropos at the present time, because still fresh in our minds and still fresh on the pages of many medical journals are the descriptions of the soldier's heart, or effort syndrome, or cardiac neurosis, or neurocirculatory asthenia—call it what you will. For definition of this condition, effort syndrome, with which the diagnosis of heart disease is so often confused, I refer to the excellent writings of Thomas Lewis¹ and Alfred Cohn.² Lewis writes as follows:

When a healthy man takes exercise, and this exercise is sufficiently stressful or prolonged, he becomes aware at the time of the effort, or after it has ceased, of certain symptoms, and he presents certain physical signs. The most notable of his symptoms is breathlessness, a symptom which comes during the exercise and continues with diminishing intensity for a variable period afterward. During the exercise, consciousness of the heart beat may come; giddiness or actual faintness or fatigue may be added. At the cessation of the

exercise, aching of the limbs, tremulousness and exhaustion are experienced; at a later period, stiffness of the muscles, a feeling of lassitude and sometimes actual malaise and tremulousness are noticed. In cases of extreme effort, pain over the precordial region, at first aching but exceptionally more violent and widespread, may be felt. During the period of exercise the heart rate and blood pressure are raised; the alae nasi are dilated, the accessory muscles of respiration are brought into action to increase the tidal flow of air. To these physiological symptoms and signs briefly described as a group I apply the term *physiological syndrome of effort*. . . . The difference in symptomatology which exists between health and this form of ill health is largely a difference in degree; the gage is the amount of work which, performed in a given space of time, will provoke the symptoms. Symptoms produced in normal subjects by excessive work are produced in the patients by lesser amounts; the smaller amount of work required, the more severe the malady. Naturally, there is no sharp line of division; there is in a large group of patients a perfect grading from the healthy man to him who is seriously unwell. We are traveling in the borderland between health and disease. This point of view has its value; it directs investigation toward the normal reactions of the body to exercise and to the corresponding reactions in disease; it brings us to inquire into the reserves of some of the most important bodily functions, and into the manner in which these reserves are reduced.

He also states that:

One of the largest groups of effort syndrome is that of constitutional weakness, nervous or physical or both. In this group are many who show incomplete or imperfect development. To it belong many undersized men, many with flat or elongated chests and instances of infantilism; to the same group belong many with family histories tainted by insanity or epilepsy, and those who in childhood were nervous weaklings, bed-wetters, somnambulists, etc.

The term "effort syndrome" is incomplete, in that it does not express the reaction of these patients to excitement. Excitement alone may produce the same symptoms as effort.

Since my return to civil life, I have noticed a group of cases, particularly in young women, which had been diagnosed as heart disease, sometimes for years, not infrequently as mitral stenosis, and which I feel were no more heart disease than were cases of effort syndrome encountered in soldiers during the war. In the Massachusetts General Hospital I have seen twelve such cases in the past six or eight weeks. The importance of this matter is obvious. If these patients have not heart disease—and the evidence is against their having heart disease—reassurance and treatment of their nervousness are the important therapeutic measures. Much worry has been occasioned and much time has been lost for some of these people as the result of the inaccurate diagnosis in the past. Since young women, as compared with young men, are generally more subject to exhaustion or irritability of the nervous system, it is likely that they more often develop the effort syndrome. It is not, however, merely in young women that we have seen the incorrect diagnosis of mitral disease.

Other conditions besides effort syndrome which, because of the symptomatology, may simulate heart disease are hyperthyroidism and infectious diseases.

In the past, great stress has been laid on the symptoms ordinarily found in serious heart disease, dyspnea, palpitation, precordial pain and tenderness, but more and more it has become obvious that the same symptoms may occur when the heart is apparently sound and when the condition is that of effort syndrome or

* From the Massachusetts General Hospital.

1. Lewis, Thomas: *The Soldier's Heart and the Effort Syndrome*, New York, P. B. Hoeber, 1919.

2. Cohn, Alfred: *The Cardiac Phase of the War Neuroses*, Am. J. Sc. 158: 453, 1919.

nervousness. As the patient's attention is called to his or her heart, the symptoms tend to become more and more aggravated. In old people these symptoms are probably much more significant of heart trouble, but in young people who are nervous and in whom no signs of heart disease can be found, the presence of dyspnea and palpitation and even precordial pain should be regarded as very uncertain evidence of heart disease.

To which of the symptoms and signs must we pay especial heed in the differential diagnosis between effort syndrome and early or slight actual heart involvement? In the first place, a past history of rheumatic fever is certainly important and tends to support a diagnosis of heart disease. On the other hand, a familial or personal history of nervousness or nervous prostration is much more in support of the diagnosis of effort syndrome. The symptoms of dyspnea, palpitation, pain and tenderness are insufficient for differential diagnosis. Lewis¹ states that "breathlessness of purely cardiac origin is always accompanied by general cyanosis—slight, moderate or extreme."

Some physicians have paid much attention to tachycardia, extrasystoles and systolic murmurs in diagnosing heart disease. Here again we may be led astray, since all these conditions are apt to be found in people with the effort syndrome. A recent discussion by Lewis³ covers these points.

Positive evidence of heart disease on physical examination includes any of the following:

1. Definite cardiac enlargement, to be determined, if in doubt, by teleroentgenography or orthodiagraphy.
2. The presence of a diastolic murmur. If one suspects the presence of a presystolic murmur and cannot be sure of it, it is usually wiser to consider it as not existing. Such a patient should be checked up by later examination. The exercise test used to bring out a presystolic murmur also causes in cases of effort syndrome the first sound to become so forcible and tumultuous that a mistaken diagnosis of mitral stenosis may sometimes be made from the character of this sound.
3. A systolic murmur at the apex, if very loud, and especially if it masks the first sound, usually means evidence of actual involvement of the mitral valve. The slower the pulse the more important is this murmur. Transmission of the systolic murmur to the axilla and back depends on the intensity of the murmur: the more intense the murmur the further it is transmitted, and the more likely it is to be evidence of organic valve disease. Therefore, transmitted murmurs are more apt to be evidence of true mitral disease, but not necessarily so.
4. A very loud systolic murmur at the base, with thrill, indicates the presence of stenosis of the pulmonary valve or of the aortic valve.
5. The presence of serious arrhythmia, that is, heart-block or auricular fibrillation, if not the result of digitalis.
6. Congestion of the veins of the neck.
7. Enlargement of the liver. Edema of the feet and legs, or, if a patient is in bed, of the sacral region; ascites and hydrothorax, and edema of the lungs.
8. Cyanosis.

The presence of very severe anginal pain is in favor of organic heart disease. The presence of extreme nervousness, tremor, sweating, and other vasomotor phenomena favors the diagnosis of effort syndrome. Occasionally one finds a combination of the two conditions which may give rise to a good deal of difficulty in diagnosis.

Meredith⁴ has recently found among 2,000 young women in college and in clerical and factory work, 193 who had been told by physicians that they had heart trouble, usually valvular, and had been advised to work as little as possible and to rest all they could. On examination, she failed to find in these 193 women evidence of organic heart disease, but she did find functional heart disturbance which she ascribed to myocardial subdevelopment, but which, from her description of the symptoms and signs, fits very well in the effort syndrome class. These women should, of course, have their attention distracted from the heart, and their life occupied with work and play which will not be too strenuous for them. Neuhof⁵ has recently discussed the irritable heart as found in general practice. He considers the vasomotor symptoms more pronounced in civilian cases than in soldiers. He says, "The fundamental cause of the cardiac neurosis with its various manifestations, seems due to hyperexcitation of the sympathetic nervous system."

There is one further point to which I should like to call attention and that is, that even when the heart is damaged and a diagnosis of slight involvement can accurately be made, the life of the individual should not be too closely restricted or the patient too much alarmed over the abnormal heart finding. It has been shown by Mackenzie and others that people with slight heart disease may live active, useful lives without difficulty.

REPORT OF CASE

A case is herewith reported in order to illustrate the differential diagnosis between heart disease and effort syndrome.

History.—M. H., woman, aged 28, single, machine operator at a box factory, reported that she had always felt run-down and had become very tired operating a heavy machine, which she had done for the last eight years. Two years before, after a hard day, she fainted and had palpitation. No more fainting attacks had occurred, but there had often been palpitation, exhaustion and dyspnea, especially after exertion or excitement. Needle-like precordial pains occurred with the palpitation, beginning with the first attack two years before. The pain never extended to the back or arms. There was no history of fever, loss of weight, cough or hemoptysis. The palpitation consisted of pounding of the heart, at times irregular, like a double beat felt in the chest and head. Running for a car would sometimes start an attack of palpitation. The patient had always been easily excited; was very nervous and "trembly"; and this condition had grown gradually worse. Two years ago she went to a physician and was told she had "bowel trouble, not heart trouble." She had not worked for the past three months, and had been in bed off and on. She felt more exhausted and her heart seemed weaker in the morning than in the evening.

There was no history of infection of the rheumatic type.

The father died young; the mother was living, but was very nervous.

Physical Examination.—There was no cyanosis. The thyroid gland was palpable but not definitely enlarged. No exophthalmos. A slight tremor was noted. Knee jerks were very active. No cardiac enlargement could be made out; rhythm was regular at rate of 98; there was a soft systolic murmur at the base, the first sound at the apex was very loud and accentuated by exercise; no diastolic murmur could be heard; the heart action was forcible. The pulse was normal. Blood pressure readings were 110 systolic and 80 diastolic. The Wassermann test was negative. The blood findings were: hemoglobin, 75 per cent.; red blood cells, 4,600,000 per cubic millimeter.

4. Meredith, F. L.: Functional Heart Disturbances in Women, Boston M. & S. J. 181: 734 (Dec. 25) 1919.

5. Neuhof, S.: The Irritable Heart in General Practice, Arch. Int. Med. 24: 51 (July) 1919.

3. Lewis, Thomas: On Cardinal Principles in Cardiological Practice, Brit. M. J. 2: 621 (Nov. 15) 1919.

Diagnosis.—This case was diagnosed "double mitral disease," that is, mitral stenosis, because of the symptoms, the pounding heart action, and the suspicion of a presystolic murmur. The whole picture is that of nervousness with the effort syndrome.

COMMENT

The differential diagnosis in young people between heart disease and nervousness, or the so-called "effort syndrome," is in need of great emphasis at the present time. This is particularly true in the case of young women, who are probably more susceptible in civil life to the condition than are young men.

RUPTURED ECTOPIC PREGNANCY IN UTERINE CORNU

AFTER SALPINGECTOMY FOR PREVIOUS
TUBAL PREGNANCY *

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REPORT OF CASE

A woman, aged 30, admitted to St. Luke's Hospital in December, 1916, had had a severe abdominal pain about four hours before admission, and had fainted. On admission, she was in shock, and was bathed in cold perspiration; the pulse was almost imperceptible, but could be counted at the apex with the stethoscope, the heart rate being 152 a minute. The abdomen showed a boardlike rigidity. There was a mass in the left fornix, and as the patient had skipped her last menstrual period a diagnosis of ruptured ectopic pregnancy was made. As her condition was becoming worse rather than better, she was operated on without delay.

Hypodermoclysis needles were inserted under both breasts before the administration of nitrous oxid gas. A midline incision was rapidly made. The abdomen was found full of blood. The bleeding ruptured left tube, together with the ovary, was removed. At the same time an assistant was removing a liter of blood from the patient's husband, and this was given to the patient by the citrate method, without waiting for the usual grouping tests, in view of the patient's condition. She made an uneventful recovery.

More than two years later, March 6, 1919, the patient had a similar attack except that the symptoms were not so severe as in the previous attack. By vaginal examination, marked tenderness could be demonstrated in both fornices, and the right ovary could be felt somewhat enlarged. As she was twelve days past her menstrual period, all other periods in the past two years being regular, it was believed that she had a ruptured pregnancy in the remaining right tube.

At operation the abdomen was again found to contain a considerable quantity of blood, with bright red blood coming up from the pelvis. The right tube and ovary were brought up into the wound, and except for a large corpus luteum cyst in the ovary, were found normal. It was then discovered that at the left cornu of the uterus, where the tube had been removed at the operation previously, there was a ragged, raw, bleeding area, which evidently represented a ruptured ectopic pregnancy. No ovum was found, but on the edge of the raw area was a small peritoneal cyst filled with clear fluid and lined with flattened epithelium. An effort was made to introduce a probe through this area, but no communication with the cavity of the uterus could be demonstrated. The raw area was closed by sutures through the uterine tissue.

COMMENT

Ectopic pregnancy occurring in a remaining tube, after salpingectomy in the other side, is not an uncommon occurrence. Rongy,¹ in an article on ectopic ges-

tation based on a study of 100 cases, reported twelve cases of repeated ectopic pregnancies included in this series. He quotes Smith and Rabinowitz, who have made a study of 2,998 cases of ectopic gestation, in which there were 113 cases of recurrent ectopic pregnancy, or 3.8 per cent. In all probability, as suggested in the article mentioned, if the subsequent history of these primary cases could be followed for a sufficient time, this percentage would be larger. This brings up the question of the advisability of the suggestion, that, in a woman, who has borne three or more children, the danger of a repeated ectopic pregnancy be explained to the patient, with the idea of obtaining consent for the resection or ligation of the remaining tube at the time of operation for the ruptured ectopic gestation.

The case reported furnishes an interesting conjecture as to how the impregnation occurred. The first operation was done rapidly, as circumstances required. The tube was tied close to the uterine cornu and removed, no attempt being made to excise a wedge-shaped portion of the uterine cornu. At the second operation, all evidence as to whether a sufficient amount of stump had been left to allow an ostium to become patent again was removed by the rupture that had occurred.

The question remains, How did the fecundated ovum become attached to this point? Did it pass down the right tube and across the cavity of the uterus and attempt to enter the remains of the left tube, and if so should it not have been possible to find a communication with the uterine cavity with the probe? If this did not occur, it must have reached its point of attachment by means of the peritoneal cavity, in which case it is of considerable interest to conjecture where it became fecundated and how or why it became attached to the remaining stump of the resected tube.

568 Park Avenue.

ACUTE RESPIRATORY DISEASE CARRIERS *

LESLEY H. SPOONER, M.D.

BOSTON

The prevalence of respiratory infection, especially among young adults, has been the subject of many statistical reports. Vaughan and Palmer¹ have shown that for the six winter months of 1915, 43 per cent. of the deaths occurring in the United States between the ages of 20 and 29 were due to this cause. The interest aroused in the subject was increased on mobilization of our troops during the winter months of 1917 and 1918. Covering a similar period, 77 per cent. of the deaths among the troops of approximately the same age as quoted above resulted from respiratory infection.

In this group it was shown that the organisms which I shall discuss were of great importance. Pneumonia was twelve times more prevalent in the army than in civil life, meningitis forty-five times, and diphtheria two times. Although the etiologic factors of measles and scarlet fever remain unknown, the streptococcus is well known as an organism of importance in the production of dangerous complications and sequelae. The same report states that measles was nineteen and

* Read before the Alumni of the Sloane Hospital for Women, Jan. 23, 1920.

1. Rongy, A. J.: Am. J. Obst. 77: 86 (Jan.) 1918.

* Read before the New England Oto-Laryngological Association, Nov. 19, 1919.

1. Vaughan and Palmer: Report from Section of Communicable Diseases, Division of Sanitation, Surgeon-General's Office.

scarlet fever six times more prevalent in the military than in the civil population.

Since the discovery by Pasteur that the pneumococcus could be cultivated from the saliva of healthy persons, various other organisms, the etiologic factors of respiratory infection, have been demonstrated on the normal mucous membrane. The significance of the presence of these bacteria was not realized at first, except to throw doubt on the etiology of certain of these diseases. Later, however, it became well recognized that persons harboring such organisms were factors in the spread of infectious diseases. To such individuals has been applied the term "carriers."

In many instances the organism may be only temporarily present, and in others it may be a constant inhabitant of the respiratory tract. This division of carriers into the transient, and the persistent or chronic groups, will be considered later. The most important classification seems to me to depend on the manner in which the organisms become planted on the mucous membrane of the carrier. It has long been known that the presence of any of these bacteria was no proof of previous infection by that organism. To this group I apply the term the "healthy carrier." Cole has shown that after infection by the pneumococcus, from 12 to 3 per cent. of those infected with Types I and II remain as bearers of those specific cocci. A similar condition follows infection by *Bacillus diphtheriae* and the meningococcus. This group will be referred to as the "diseased carrier." Still another consideration is the virulence of the organism isolated from the carrier. This appears to be of less significance than the latter, since the temporarily avirulent organism may, when replanted on fresh soil, regain its lost virulence.

In this paper I shall consider the four most important organisms that are the etiologic factors of acute respiratory infection. These are the pneumococcus, *Bacillus diphtheriae*, the meningococcus, and the streptococcus.

PNEUMOCOCCUS

Cole,² after an intensive study at the Rockefeller Hospital on acute lobar pneumonia, points out that the four types of the pneumococcus may be reclassified according to their occurrence in carriers into two general subdivisions: the truly parasitic and the primarily saprophytic pneumococci. Types I and II fall into the former division, Types III and IV into the latter. He was able to isolate from a series of 297 healthy persons, not exposed to the disease nor giving history of respiratory infection, a member of the parasitic group only once—a percentage of 0.33. On the other hand, the same series showed the saprophytic group³ in 115 persons, a percentage of 39. Following lobar pneumonia caused by the Type I pneumococcus, on the other hand, he succeeded in recovering that organism late in convalescence in 13.1 per cent., and the Type II organism following that specific infection in 12.1 per cent. It is not to be inferred that Types III and IV are essentially saprophytic organisms, since together I found them as etiologic factors in approximately 63 per cent. of more than 1,300 cases of lobar pneumonia which I studied. The fact remains that of the truly parasitic group which was responsible for 37 per cent. of my cases, the "healthy carrier" was essentially unknown.

2. Avery, Chickering, Cole and Dochez: Monograph 7, Rockefeller Institute for Medical Research, 1917.

3. The saprophytic group included, in addition to Types III and IV, the atypical Type II organisms, which Cole has shown are more closely allied to those groups than to the typical Type II.

In a study of the correlation of the types of pneumococci obtained from the circulating blood and the sputum in lobar pneumonia, I was able to demonstrate certain changes in the respiratory flora which further suggest the separation of the pneumococcus into parasitic and saprophytic groups. In several instances, the types recovered from the sputum in the later stages of the disease changed from the parasitic group, which had earlier been found in both blood and sputum, to the saprophytic group. From this fact it seems at least suggestive that in Types III and IV there are certain harmless strains; while other members, presenting the same serologic reaction, are frequent factors in the production of pneumonia. It is fair to assume that the convalescent pneumonia patient is a far greater source of danger, in regard to the spread of infection, than the healthy person, even though the latter is a bearer of the pneumococcus.

Epidemiologic studies of pneumonia in our large camps during the recent war have shown most interesting outbreaks of the various types of the disease. I was fortunate enough to be able to observe such waves of infection at Camp Devens. In the winter and spring of 1917 and 1918, the infection was caused largely by Type IV. This was followed by an outbreak of Type I, especially among two battalions of negroes who had recently arrived from Florida. This was succeeded by a preponderance of Type II cases, which was again followed by Type IV. During this period the usual sporadic cases were found, showing the classical percentage of types. These waves of infection, or small epidemics, can be explained best by infection from the individual in the early stages of pneumonia or from the diseased carrier during late convalescence.

The presence of the pneumococcus in the sinuses, incident to recent acute or present subacute infection, is doubtless of great importance in connection with the spread of disease; but my experience on the subject is too limited to warrant any conclusion.

BACILLUS DIPHTHERIAE

The Klebs-Loeffler bacillus, like the pneumococcus, has long been recognized as a possible inhabitant of the healthy throat. During a period of ten months, my laboratory at Camp Devens examined 3,800 contacts with cases of diphtheria. On the diagnosis by the laboratory of a case of that disease, all members of the patient's company were brought to the laboratory and cultures made at once on Loeffler's blood serum.

Of the 3,800 persons examined, 140 positive carriers were detected, a percentage of 3.7. In a paper published last year⁴ I said:

The healthy carrier may, according to the experience of this laboratory, be divided into two classes, the transient and the persistent carriers. In the search for diphtheria carriers it was necessary to rely for diagnosis on the microscopic morphology and staining reaction of the organisms and the relative number of such bacilli. Limits of time, personnel and material prevented more elaborate cultural differentiation, animal inoculation, etc. In order to safeguard as far as practicable against error in this report, the following requisites for diagnosis were insisted on:

First, the suspected type of organism must be present in at least moderate number in the preparation; second, the diagnosis must be made independently by three trained members of the staff or personnel.

4. Spooner, L. H.: The Base Hospital Laboratory, Mil. Surgeon 44: 55 (Jan.) 1919.

It seems wise to make this detailed technical statement in order that the results of this investigation may be taken at their proper value.

The daily examination of cultures from the throats of the carriers yielded interesting results. Of the 140, 121, or 86 per cent., showed negative cultures within five days of isolation. To this large group I apply the name "transient carrier." Fourteen, or 10 per cent., showed organisms present between six and fifteen days following isolation. These might be classified as an intermediate group. Five, or 4 per cent., showed cultures positive over a period longer than fifteen days, the actual time being seventeen, twenty-one, sixty-two, seventy-five⁵ and eighty-five days, respectively. From these figures it may be concluded that 3.7 per cent. of contacts were found to be carriers, and that of the latter, only 14 per cent. were of practical epidemiologic importance, since the presence of bacilli in the throat of the remaining 86 per cent. was so transient. In other words, only 0.5 per cent. of those examined were significant carriers, harboring bacilli longer than five days, and only 0.1 per cent. were proved to be true chronic carriers. The transient carrier has an added significance in time of epidemic, although his importance in the dissemination of disease is not considerable under ordinary conditions.

The process of disinfection of all but the chronic carrier was too simple to warrant more than passing note. It consisted of rest, fresh air, house diet, and generally no local treatment, although occasionally bland mouth washes and gargles were employed, care being taken that their use did not interfere with the cultural results. The release from quarantine and the negative findings referred to in these statistics were gaged by three negative cultures, from the nose and throat, taken on successive days.

The "diseased carrier," the convalescent from diphtheria, presented a very different laboratory picture. In this case the persistence of positive cultures was always pronounced, and more radical steps, such as tonsillectomy and nasal operations, were often resorted to. These were frequently followed by a disappearance of the organism, which was unfortunately not always permanent. One case in particular deserves a brief note:

On admission, a soldier presented moderate constitutional symptoms and a small membrane on the left tonsil. Cultures from the latter revealed *B. diphtheriae*. After appropriate serum therapy, the constitutional reaction and the membrane disappeared, but the bacilli remained. Daily cultures from each tonsil, each nostril and the postnasal space showed negative results in every instance, save that of the left tonsil, cultures from which remained positive for from six to eight weeks. At that time the tonsil was removed in the usual manner. During his convalescence from this operation, negative cultures were obtained from all sources. After a week, however, the left tonsillar fossa showed positive cultures, which continued with as much persistence as before the operation. At last the patient was discharged from the hospital on the grounds of the nonvirulence of the organism.

From these observations I conclude that:

1. The chronic healthy diphtheria carrier is very rare.
2. Although the sterilization of his mucous membrane is difficult, it is easier than that of the chronic disease carrier.

5. At the time of preparation of the paper referred to in Note 4, this patient was in the hospital showing positive cultures.

3. He and his fellow, suffering from the early stages of acute infection, are the potent factors in the spread of this disease.

MENINGOCOCCUS

When Weichselbaum identified the meningococcus in the spinal fluid in epidemic cerebrospinal meningitis, it was supposed that the infection was restricted to the meninges. At present it is recognized as a septicemia. The organism gains entrance through the upper respiratory tract, and may be found in the postnasal space of both the healthy carrier and the person sick with the disease.

During the recent war the marked increase in this form of meningitis was the cause of a considerable disquietude in the Office of the Surgeon-General. As a natural consequence, the search for meningococcus carriers was carried out in a most elaborate and painstaking manner on all disease contacts. My experience revealed a low percentage of healthy carriers, 1.3 per cent. of 3,647 being detected, although the percentage of a limited group ran to 6.9 per cent. of 116 who had been in most intimate contact with infected subjects. It is, of course, impossible to state whether these carriers were responsible for the infection, or whether, as seems more likely, they became carriers because of close exposure to the disease.

In the South this form of meningitis is more prevalent than in this latitude. As Vaughan and Palmer have shown that the soil from which troops were drawn governs the prevalence of infectious disease, it follows that the Southern camps presented a high meningitis morbidity. At the same time the percentage of healthy carriers detected in those cantonments was correspondingly high. Here again it is difficult to assign any epidemiologic significance to the carrier.

We are confronted with a problem, which, technical though it may be, has a marked bearing on the interpretation of all results on this work. The cultivation of the meningococcus is difficult even from spinal fluid, but this difficulty is greatly increased when the organism is mixed with the usual saprophytic bacteria of the postnasal space. This tends to reduce the number of positive findings. On the other hand, it often rendered necessary the diagnosis of carriers from a relatively small number of organisms. The inevitable result is the diagnosis as carriers of many who harbor what might reasonably be considered an insignificant number of meningococci. This point is strengthened by a consideration of the response to treatment.

The usual method of disinfection was through the use of postnasal sprays of dichloramin-T. In the case of all our healthy carriers, the results of this treatment were most striking. The regulation for release consisted of three consecutive negative cultures taken at three-day intervals. In the case of the healthy carrier, the maximum period of isolation was twelve days.⁶

As I have stated above, the clinical meningitis patient is also a carrier of the organism in the postnasal space during the disease and convalescence. These diseased carriers were disinfected with greater difficulty. The maximum period of isolation was forty-three days.

The group of chronic healthy carriers, as in the case of diphtheria, is a small one. None typical of this type were detected among 3,647 contacts. They present two

6. This excluded one carrier whose isolation lasted seventeen days. He should be classified in an intermediate group, since the original examination revealed an almost pure culture of the meningococcus. The latter characteristic belongs to the chronic type, although the period of isolation prevents him from being classified as such.

characteristics which differentiate them from the type that was identified in my laboratory. They harbor the meningococcus in almost pure culture, and defy the utmost measures of disinfection. I observed such a group, consisting of perhaps a dozen men drawn from our entire army, when visiting the Rockefeller Hospital in May, 1918. From these observations it seems fair to conclude that the chronic healthy carrier of the meningococcus is rare, and that the important bearer of infection is the diseased carrier.

During the epidemic of influenza which swept Camp Devens during the latter part of September and October, 1918, a peculiar outbreak of epidemic cerebrospinal meningitis took place. In less than four weeks, twenty-two cases of this disease had developed in a camp that had shown only twenty cases during the ten months from October, 1917, to August, 1918. The most striking element in this outbreak lay in the fact that fourteen of the twenty-two patients (64 per cent.) had been confined in the hospital with influenza five days or more prior to manifestation of the earliest symptoms of meningitis. Twelve (55 per cent.) had been patients for nine days or more before onset of this infection.

The following facts were brought out after an intensive study of the situation: The twenty-two cases represented eighteen separate camp organizations, which were in no way in close contact with one another. In spite of the crowded condition of the camp, in only three instances did multiple infection exist. In none of these could camp contact be satisfactorily demonstrated to an extent warranting any epidemiologic conclusions.

Two cases arose in A Company, 212th Engineers; of these one had been in the hospital ten and the second thirteen days prior to manifestation of symptoms. Of the two cases in the 31st Company, Depot Brigade, one had been confined to the hospital five, the second, twenty-three days. In the 14th Company, Depot Brigade, in which three cases developed, one was admitted sick with the disease; the second had been confined for nine, and the third for thirteen days. A comparison between the dates of manifestation of symptoms and of admission to the hospital shows that in the case of only one organization—the 212th Engineers—could the patients have been in personal contact within at least one week prior to onset of symptoms.

A study of the distribution of cases throughout the hospital shows that among those who evidently had developed the disease within the hospital, no two cases were found in the same ward. The frequent change of patients from ward to ward during the stress of the epidemic did not alter this unique record. Of the medical staff, hospital personnel, and nurses in those sixteen wards, as well as of the patients in contact with the case, cultures were taken with the utmost care. Of 586 contacts only twelve, or 2 per cent., were found to be healthy carriers. Similar cultures taken from the possible camp contacts showed nineteen carriers out of 1,061 examined, a percentage of 1.8. It is of interest to note that in the 14th Company, Depot Brigade, to which organization three patients belonged, no carriers were discovered among 219 examined.

Since no appreciable increase in the number of carriers was found among hospital contacts and in the organizations to which these cases belonged, and in fact since in the one to which were attached the largest

number, none were discovered; and as there was a wide distribution of cases through the camp as well as in the hospital, and such a large number developed the disease in the hospital after a lapse of time generally accepted as the incubation period of meningitis, it seems reasonable to consider these cases as possible autoinfections of the carrier. Although no absolute proof of this point has been produced, it seems rational to consider that these persons, whose vitality had been lowered by an attack of influenza, yielded in this manner to infection with the meningococcus. I will add that I have the informal statement from the Office of the Surgeon-General that such an outbreak took place in three other base hospitals in this country.

STREPTOCOCCUS

In civil life the streptococcus is an important factor in the production of septic sore throat, septicemia and more localized surgical infections. Its rôle in connection with pneumonia should not be neglected. In the army, however, it was found to be one of the most dreaded of infectious organisms. Bronchopneumonia either due to the streptococcus in the form of primary infection, or secondary to measles, with the resulting empyema and pericarditis, was responsible for the highest mortality in Southern camps. Primary and secondary infection of wounds by this organism was also of utmost importance.

The regional distribution of the streptococcus was fully as striking as in the case of the meningococcus.

Although many strains of the organism have been isolated, *Streptococcus hemolyticus* was almost universally found in connection with respiratory, as well as with wound, infection.

In the spring of 1918, a considerable number of cases of postmeasles streptococcus pneumonia were reported through my laboratory. This organism was also frequently demonstrated in postpneumonic empyema during that period and throughout the summer. Following the influenza epidemic, even larger proportions of the postpneumonic empyemas showed this organism, always in the rôle of a secondary invader. Toward the close of 1918, in a few returned wounded soldiers the organism was demonstrated in chronic sinuses and areas of bone destruction. With these exceptions, infection by *Streptococcus hemolyticus* was relatively rare throughout Camp Devens during the first fifteen months of its existence.

This preliminary statement is of importance in the consideration of my investigation on suspected carriers of this organism, which, it must be borne in mind, was terminated before the influenza epidemic or the return of wounded troops, noted above.

During the winter of 1917-1918, cultures were taken of 100 Medical Reserve Corps officers stationed at the base hospital. Cotton swabs were applied to the tonsils, and with this material the water of condensation of Loeffler's blood serum was impregnated. Diagnosis was made by microscopic morphology. In this series, 60 per cent. were found to be streptococcus carriers. A similar investigation on the nurses at the same hospital revealed 68 per cent. of sixty examined. A smaller group of regimental surgeons stationed throughout the camp was next investigated by the same methods. These showed only 5 per cent. of healthy carriers. Whether the marked difference resulted from the nature of the lives led by these groups, or whether

the hospital environment played a rôle in the production of carriers, it is difficult to decide. The former seems to me the more rational solution.

As it was realized that the technic was faulty, the next series was thus investigated: Swabs were planted directly on blood agar plates,⁷ and after twenty-four hours' incubation the microscopic morphology of typical hemolytic colonies was studied. This series covered 140 officers, about 75 per cent. of whom were included in the first investigation. The same process was repeated twice at three to four week intervals. The migratory life of the army officer prevented the completion of observation in all the group. This incompleteness tended to lower the percentage, which I believe would have been even more striking had the work been performed on a stationary body.

Of 140 officers of whom cultures were taken, 83 per cent. were positive on at least one examination; 25 per cent. showed *Streptococcus hemolyticus* in appreciable numbers on three or more trials, and only 17 per cent. were consistently negative. These figures indicate that the transient streptococcus carrier is very common and that the persistent carrier—I believe had my investigation been carried out over a longer period the term chronic carrier would have been appropriate—is also common.

When these facts are considered in the light of the scarcity of primary streptococcus disease at this hospital and the absence during their entire residence at that post of such infection among the Medical Corps officers, the importance of the streptococcus carrier, as an etiologic factor in the origin and spread of that infection, becomes parallel to that of the pneumococcus carrier. Another analogy to that organism lies in the recent work on streptococcus grouping, which will probably separate these organisms into parasitic and saprophytic groups similar to those of the pneumococcus.

It is my opinion that in the case of the streptococcus, healthy and diseased carriers bear the same relation to the health of the community as exists with the other organisms just discussed.

CONCLUSIONS

1. Acute respiratory disease is at present the greatest menace to the youth of our country.
2. It is more serious in the army than in civil life.
3. The transient healthy carrier is more common than should be expected from the incidence of the specific disease.
4. This transient quality is shown by the disappearance of the organism without treatment.
5. The chronic healthy carrier is rare, except in the case of the "saprophytic pneumococcus" of Cole, in which many of the organisms may be nonpathogenic, and with *Streptococcus hemolyticus*, in which a similar condition may well exist.
6. The potent factors in the spread of these diseases rest in this small group of chronic healthy carriers and the diseased carrier.
7. The latter, during the prodromal stages of disease and convalescence, is of by far the greatest importance.
8. They respond to attempts at disinfection even less satisfactorily than do the chronic healthy carriers.

520 Commonwealth Avenue.

ELECTRICAL STIMULATION OF PERIPHERAL NERVES EXPOSED AT OPERATION

SURGICAL VALUE

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AND

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The occurrence during the war of large numbers of nerve lesions of traumatic origin has stimulated the investigation of nerve function by various methods, among which that of electrical stimulation is of recognized importance. Operations for the correction of these lesions have furnished the opportunity for the direct stimulation of exposed nerve trunks, pathologic and normal, by which means extremely important information may be gained. This paper is based on such observations in a series of seventy-three cases in which operation was performed in the service of Lieut.-Col. C. H. Frazier at U. S. Army General Hospital No. 11, Cape May, N. J., and U. S. Army General Hospital No. 41, Fox Hills, N. Y., and aims at presenting general conclusions and such other data as may be of interest to the surgeon. The case reports, with more detailed anatomic and theoretical consideration, will be embodied in another paper.

TECHNIC

As soon as nerves are freed at operation, those of the leg are oriented at a point distal to the lesion by a black silk thread passed through the sheath on their posterior aspect, and proximal to the lesion by a white thread similarly placed. The arm nerves are oriented in the same way on the anterior aspect. This permits proper orientation for stimulation, suture and pathologic examination.

The stimulating electrode (Fig. 1) used was bipolar and was devised by one of us (W. M. K.) following the principle of the French investigator, Henri Meige. It is rather simple. Two strands of No. 2 copper wire about 2 yards long are strung with small glass beads for insulation. The two strings of beads are placed in a glass tube, 8 inches long, whose edges are well rounded, and are held in position by nonvulcanized rubber. Another modification of the electrode is as follows: At a point, about 1½ inches from the handle end of the tube, a slight indenture is made by drawing the tube out a bit. The beaded wires are drawn toward the stimulating end and a rubber band is placed over them at the indenture, thus holding them in place. The beaded wires are then allowed to trail off in their original direction (Fig. 1). The stimulating ends of the electrode are twisted back on themselves, thus making a loop. This avoids trauma to the nerves. This electrode may be readily sterilized. The battery used was the Harvard inductorium, No. 20, made by the Harvard Inductorium Company, Boston (Fig. 2). The freed nerve is held by a glass rod with a curved end which permits it to rest as in a cradle. The strength of the current is best taken as that which will produce a minimal contraction in a neighboring muscle. This rarely fails to cause stimulation of the nerve. The stimulation should always be applied both below and above the lesion. Normal nerves require much less current than abnormal. The stimulating is done with

7. To meat infusion agar is added 10 per cent. sterile defibrinated human blood, and the mixture plated.

the electrodes placed longitudinally on the nerve—this to avoid diffusion as much as possible. The sequence is: posterior side, internal, anterior, external. The surgeon while stimulating calls out the aspect of the nerve he is working on, in order to avoid confusion. The muscles stimulated are observed by another man. In stimulating the arm nerves it is better to use the terms radial and ulnar than internal and external. It has been found valuable to have nerve maps in the

in estimating the degree of nerve injury and in facilitating operative procedure. It enables him easily and quickly to identify normal nerves, often a difficult matter otherwise, especially when the normal anatomic relations are disturbed by pathologic conditions. Again, direct electrical stimulation is the most dependable means of determining conductivity in motor nerves which have been injured but not interrupted, as in the case of compression.

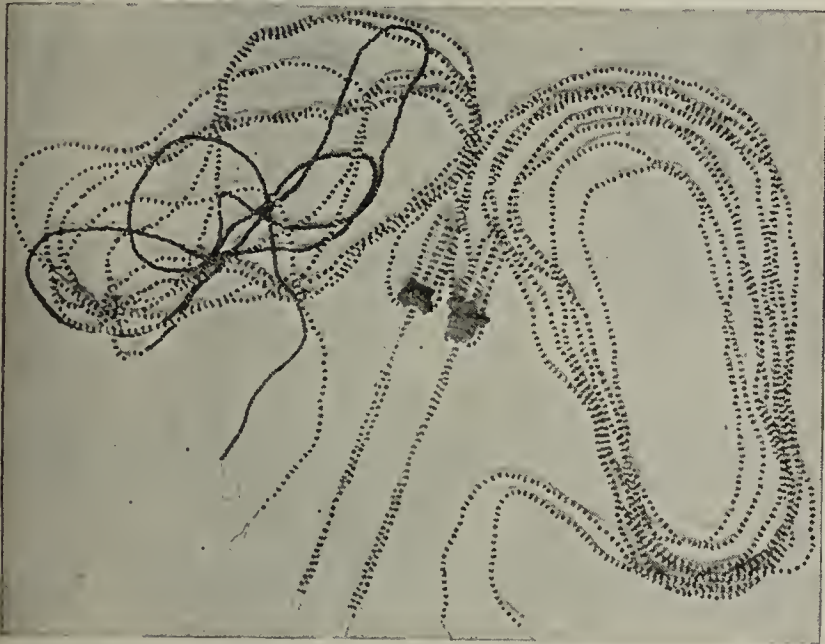


Fig. 1.—Stimulating electrode.

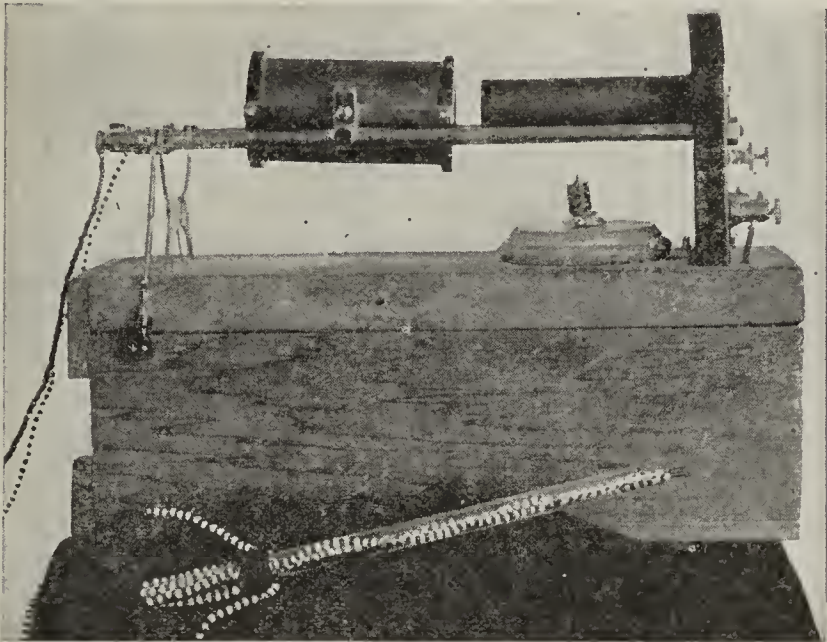


Fig. 2.—Battery.

operating room for reference. The findings are directly recorded on circular charts.

VALUE OF THE METHOD TO THE SURGEON

The surgical aspects of this subject are of considerable importance, not only because of the increased accuracy of diagnosis and of surgical manipulation which a better knowledge of topography insures, but also because direct electrical stimulation of nerves exposed at operation is of material aid to the surgeon

ELECTRIC PHENOMENA

We are all familiar with the paradoxical phenomenon of Erb, most frequently found in compression palsy of the musculospiral nerve from the use of crutches. In this condition the nerve conducts impulses when it is stimulated through the skin below the area of compression, but this area acts as an area of decrement, and its muscles cannot be made to react when the nerve is stimulated through the skin above the point of compression. We have found that in some cases the nerve

NUMBER OF REACTIONS IN NERVES AND MUSCLES IN FIFTY-SIX OPERATIVE CASES

	Case Numbers	Nerve	Muscles and Sensations	Total
I. Brachial plexus.....	5, 41	5		
1. Pectoralis major.....			1	1
II. Median nerve:				
(a) Inner head.....	31	1		
(b) Outer head.....	11, 31	2		
(c) Trunk.....	2, 3, 9, 13, 16, 17, 19, 26, 27, 30, 36, 43, 44, 45, 50, 53, 57, 69	18		
1. Pronator radii teres.....			14	
2. Flexor carpi radialis.....			12	
3. Palmaris longus.....			3	
4. Flexors of the fingers.....			11	
5. Flexor longus pollicis.....			7	
6. Pronator quadratus.....			2	
7. Abductor pollicis.....			2	
8. Opponens pollicis.....			1	
9. Lumbricales.....			1	
10. Sensory.....			1	
III. Ulnar nerve.....	3, 8, 11, 13, 16, 18, 27, 28, 42, 43, 45, 49, 50, 60, 66	16		54
1. Flexor carpi ulnaris.....			11	
2. Flexor profundus digitorum.....			10	
3. Adductor pollicis.....			5	
4. Interossei.....			5	
5. Hypothenars.....			4	
6. Sensory.....			1	
IV. Circumflex nerve.....	39	1		33
1. Deltoid.....			2	
V. Musculospiral nerve.....	15, 22, 31, 33	4		2
1. Triceps.....			4	
2. Supinator longus.....			2	
3. Extensor carpi radialis.....			2	
4. Extensors of the fingers.....			1	
VI. Sciatic nerve:				
(a) Internal popliteal division... 12, 20, 23, 24, 63, 64		6		
1. Hamstrings.....			4	
2. Gastrocnemius.....			3	
3. Tibialis posticus.....			2	
4. Flexor longus digitorum...			2	
5. Flexor longus hallucis.....			2	
6. Intrinsic.....			0	
(b) External popliteal division... 14, 21, 59		3		13
1. Peronei.....			3	
2. Tibialis anticus.....			2	
3. Extensor digitorum.....			1	
4. Extensor hallucis.....			1	
VII. Internal popliteal nerve..... 1, 6, 7, 10, 40, 51, 52, 54, 56, 58, 63, 64, 68		13		7
1. Hamstrings.....			2	
2. Gastrocnemius and soleus.....			9	
3. Tibialis posticus.....			10	
4. Flexor longus digitorum.....			5	
5. Flexor longus hallucis.....			4	
6. Intrinsic.....			2	
VIII. External popliteal nerve..... 10, 14, 38, 46		4		32
1. Peronei.....			4	
2. Tibialis anticus.....			1	
3. Extensor digitorum.....			1	
4. Extensor hallucis.....			1	
Total.....		73		161

and its muscles are quite unresponsive to electrical stimulation at all points through the skin, while direct stimulation of the nerve trunk at operation causes muscle reaction. We have also observed all of the conditions of Erb's reaction elicited by direct stimulation of the exposed nerve.

3. A phenomenon of difference between percutaneous and direct stimulation.

The explanation of the last mentioned phenomenon appears to be simple. The direct stimulation of an exposed nerve is stronger and less diffused, and suffices to overcome the decrement in conduction produced by

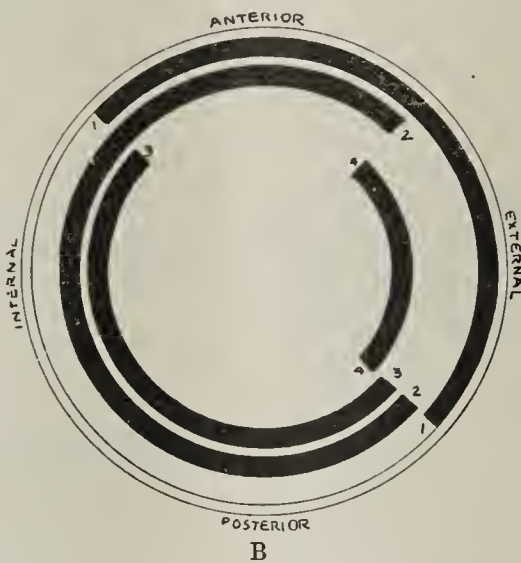
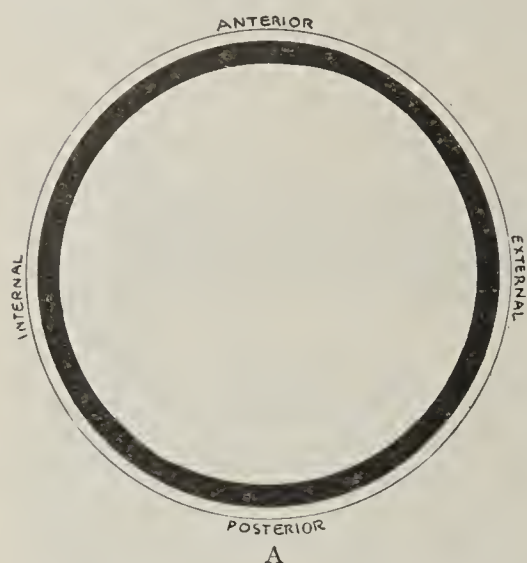


Fig. 3.—Heads of the median nerve: *A*, external (6 and 7); pronator radii teres; *B*, internal (8 and 1): 1, flexor carpi radialis; 2, flexion of the fingers; 3, flexion of the thumb; 4, abductor pollicis.

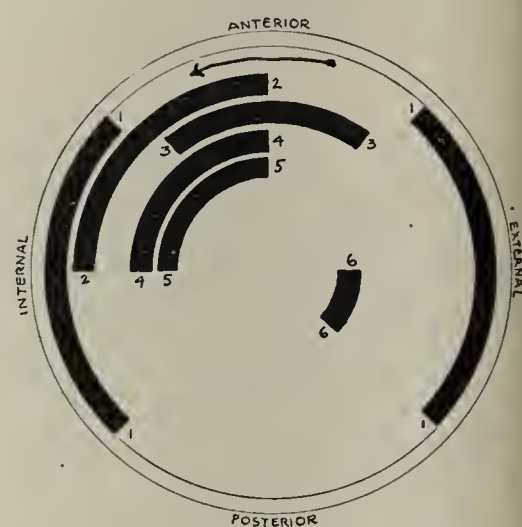


Fig. 4.—Median nerve, midarm level: 1, pronator radii teres; 2, flexor carpi radialis; 3, palmaris longus; 4, flexores digitorum; 5, flexor pollicis; 6, pronator quadratus.



Fig. 5.—Median nerve, midforearm level; 1, sensory; 2, opponens pollicis; 3, abductor pollicis; 4, lumbricales.

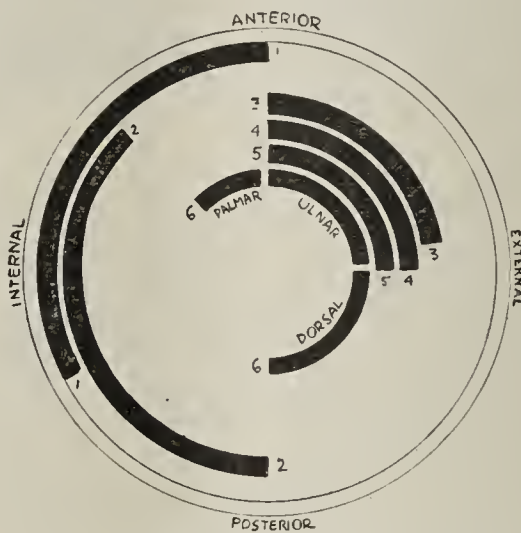


Fig. 6.—Ulnar nerve: 1, flexor carpi ulnaris; 2, flexor profundus digitorum; 3, hypothenars; 4, interossei; 5, adductor pollicis; 6, sensory.

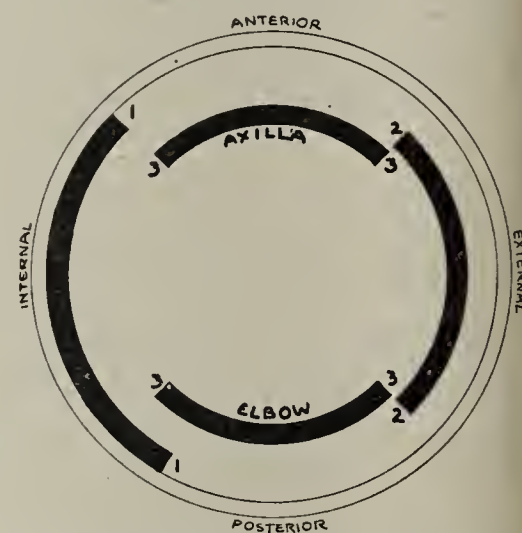


Fig. 7.—Musculospiral nerve: 1, triceps; 2, supinator longus; 3, extensor carpi radialis.



Fig. 8.—Sciatic nerve: 1, hamstrings; 2, gastrocnemius and soleus; 3, flexor longus hallucis; 4, flexor longus digitorum; 5, tibialis posticus; 6, peronei; 7, tibialis anticus; 8, extensors of the toes.



Fig. 9.—Internal popliteal nerve: 1, hamstrings; 2, gastrocnemius; 3, tibialis posticus; 4, flexor longus digitorum; 5, flexor longus hallucis; 6, intrinsics; 7, flexor brevis hallucis.



Fig. 10.—External popliteal nerves; 1, peronei; 2, tibialis anticus; 3, extensors of the toes.

Summarizing the phenomena due to areas of decrement which we observed, we have:

1. Erb's indirect, or percutaneous, paradoxical phenomenon.
2. A direct paradoxical phenomenon, from stimulation of the nerve trunk.

the lesion, while stimulation through the skin does not.

The surgical importance of these reactions is obvious. Where conductivity can be demonstrated, nerves or portions of nerves can be conserved which might otherwise be considered as completely interrupted and consequently subjected to unnecessary operative resection.

and suture. Finally, the free ends of nerves that have been completely interrupted can be identified in the recent stage of injury, that is, until secondary degeneration develops. In cases in which it is of interest to cut the fibers to some muscles, let us say the gastrocnemius and soleus group, as in Little's disease, or when a trans-

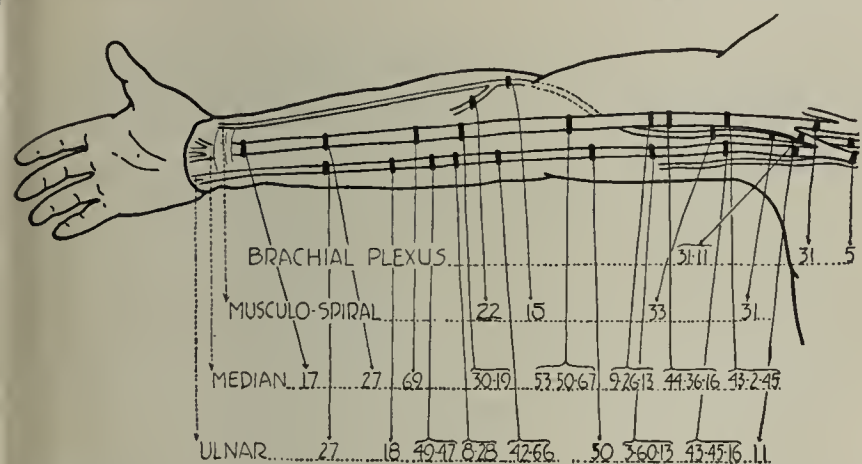


Fig. 11.—Levels of stimulation of the main arm nerves and their branches.

plantation is desired, say of the triceps fibers into the circumflex nerve, it is essential to use electrodes.

RESULTS OF STIMULATION IN SEVENTY-THREE CASES

The results obtained have been combined for each nerve and are represented on the accompanying charts (Figs. 3, 4, 5, 6, 7, 8, 9 and 10). The black areas represent the responsive area on the circumference of the nerve, namely, the area in which faradization caused muscle contraction. The arrow in Figure 4 indicates that the fibers to the pronator radii teres muscle cross from the external aspect to the internal aspect of the median nerve on its anterior surface, the extent of the crossing being several inches in the midarm portion of the nerve. The absence of a black line to represent the position of the fibers for the tibialis posticus in Figure 9, and the location of the numbers throughout the circumference, indicate that we were unable to localize definitely the fibers to this muscle, but found them on all aspects of the nerve in different cases. This was the only exception to the rule that the fibers to a given muscle pursued a straight course from the plexus to the point of branching. The charts of the circumferential position of various bundles represent the results of stimulation at various levels (Figs. 11 and 12).

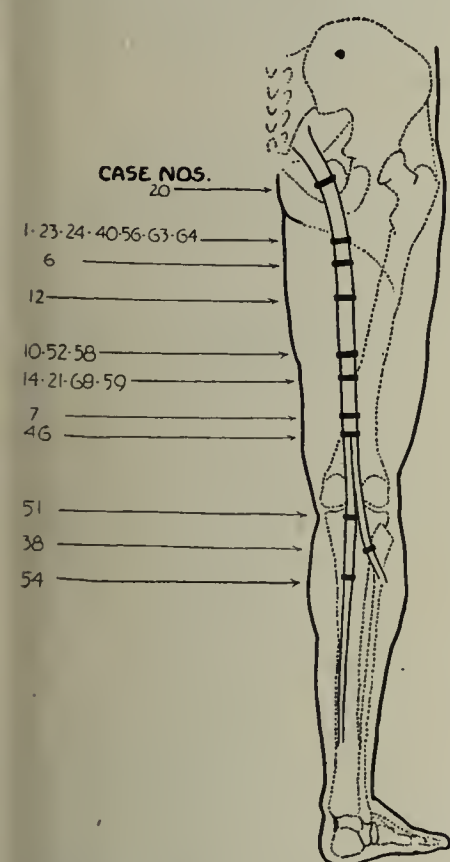


Fig. 12.—Levels of stimulation of the sciatic nerve and its branches.

CONCLUSION

Electrical stimulation at operation gives important information to the surgeon as to the location of nerves and their degree of abnormality due to injury.

It serves as an indispensable guide to operative manipulations.

It is a means by which we may add to our all too scanty knowledge of peripheral nerve anatomy.

RESTORATION OF LOSS OF BONE

INCLUDING AN ANALYSIS OF THE FIRST HUNDRED CASES OF FRACTURE TREATED BY BONE GRAFT AT U. S. ARMY GENERAL HOSPITAL NO. 3, COLONIA, N. J.*

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ASSISTED BY

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In the task of restoring loss of bone substance and function in the wide variety of traumatism resulting from the war, the plastic surgeon is confronted with a correspondingly varied array of mechanical problems. The recognition of the underlying biologic and physiologic significance of tissue growth and metabolism is a fundamental requirement in the successful treatment

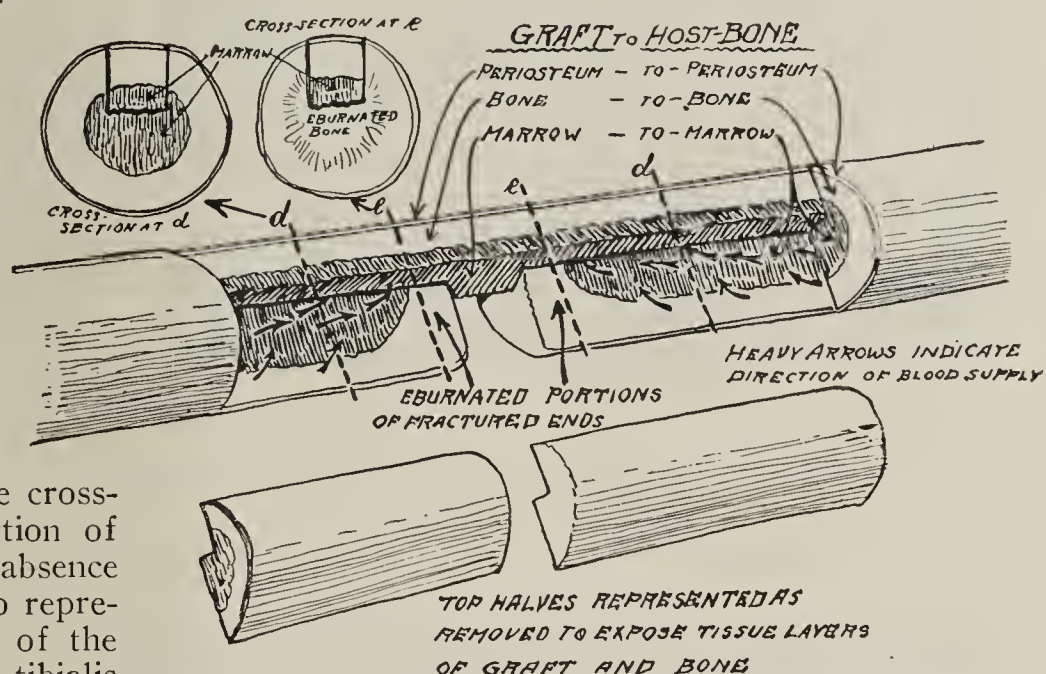


Fig. 1.—Requisite apposition of bone layers of graft with respective parts of host bone. The graft is of sufficient length to extend well beyond the eburnated area of the host fragments, coming into generous contact with the healthy vascular marrow substance. The cross-section at E shows the eburnated plug of bone where, as a rule in pseudarthrosis, it closes the marrow cavity in the fractured ends. Here the gutter has been deepened sufficiently to receive the full amount of marrow of the graft, which is demonstrated (lower drawing and cross-section at D) in extensive contact with the marrow of the host fragments. The arrows on the marrow in the host fragments indicate the direction of blood supply to the graft from its principal normal source, namely, the marrow substance of the host. By the insertion of the inlay, with its full amount of marrow, a continuous marrow bridge is formed, extending from the healthy marrow of both host fragments through the gutter in the eburnated ends. This marrow bridge plays a most important rôle as conductor of blood vessels and osteogenic cells from one host fragment to the other. The cross-sections at D and E show also the cabinet-maker fit of the inlay graft with the host fragments, which not only affords mechanical fixation of parts, but also favors the stimulus to bone growth from frictional irritation, emphasized by Roux.

of these cases. The surgical repair of bone, and more particularly the use of the bone graft in cases of pseudarthrosis with or without bone loss, is based not only on the ultimate establishment of adequate fixation of the bone fragments, but also on the attainment of a proper environment for the nourishment of the graft. This entails the exact coaptation of parts of the graft to respective parts of the host bone; in other words, the adequate and extensive contact of all four corresponding bone layers, namely, periosteum, cortex, endosteum and marrow.

* Read before the Congress of the Italian Orthopedic Association, Bologna, Oct. 18, 1919.

MECHANICAL STRESS AND BONE GROWTH

Throughout his plastic work, both in civilian practice and army experience, the author has been greatly impressed with the striking influence exerted by mechanical stress on the growth and metabolism of bone. In cases of loss of substance of long duration,



Fig. 2 (Case 1).—Wound in which an officer, hit at Ourcq River by fragments of a high explosive shell, lost about $3\frac{1}{2}$ inches of the upper third of the humerus, including the entire head. In this case, destruction of practically all the musculature of the shoulder rendered the patient incapable of shoulder motion.

in the radius, humerus or any long bone, the bone cortex has often become reduced to one-fifth its normal thickness, in fact, almost to eggshell consistency, largely owing to removal of the stimulus of mechanical stress. Such a condition is, of course, in direct sequence to the general physiologic law of bone growth; it is, in fact, a magnification of Wolff's law. If bone, whose nourishment and blood supply have not been greatly impaired, should suffer so materially as a result of loss of the stimulus of mechanical stress, how much greater must be the effect of the same inhibitory influences on any free bone graft whose blood supply and nourishment are not yet established.

A more suitable environment for successful bone growth is established by the cabinet-maker fit of the properly inserted inlay graft than by any other known technic. At the same time the biologic laws that obtain in the transplantation of all varieties of tissues are fulfilled, since corresponding tissue-layers are brought in apposition, thereby furnishing ideal conditions for the rapid and complete establishment of the blood supply. Under such conditions, Wolff's law of bone growth is given favorable opportunity to exert its influence on bone proliferation and on the adequate adjustment of the bone architecture. Moreover, by the inlay technic, the full influence of Roux's law of frictional irritation is ideally provided for, since extensive plane surfaces of the graft are brought into the closest proximity with equally extensive plane surfaces of the host fragments.

TECHNIC

In work on bone tissues, which easily dry on exposure to the air, operative speed is necessary; moreover, in the repair of bone that from lack of the stimulus afforded by mechanical stress has become almost eggshell-like in consistency, great delicacy of technic and operative speed are fundamental requirements in the difficult work of inserting the necessary inlay. It would be impossible to execute such accurate inlay technic by the former laborious methods with mallet and chisel, or osteotome. In work of this nature, in which the operating field is frequently limited, where fragility of bone may be a constant menace to success, and in which an accurate cabinet-maker fit of parts is indispensable, an electrically driven rotary twin-saw seems absolutely essential. In contradiction to a recent assertion, it is emphatically stated that the motor-saw, when properly used, does not heat nor glaze the bone. During various operations in the past few months, the author has made repeated attempts to determine whether heat was generated by the motor-saw when used properly, and if so, to what degree. In every instance it has been found that the most delicately adjusted thermometers have failed to register an increase in temperature, even to the fraction of a degree, when placed directly on the motor-saw or on the bone immediately following the withdrawal of the instrument.

Methods of Internal Fixation.—For the inlay graft, accurately cut and fitted by motor-saw technic, the fixation afforded by kangaroo sutures is adequate and preferable to that of all metal agents (such as plates, nails, screws or wire). Kangaroo tendon, from the standpoint of mechanical strength, absorbability and tolerance by the tissues, surpasses all known fixation agents. It remains in situ sufficiently long for the purpose of fixation, and begins to be absorbed within forty days. Moreover, it is sufficiently elastic to allow the plane surfaces of an inlay graft to rub in a microscopic amount on the contiguous plane surfaces of the gutter of the host fragments, thus favoring the frictional irritation law of Roux.

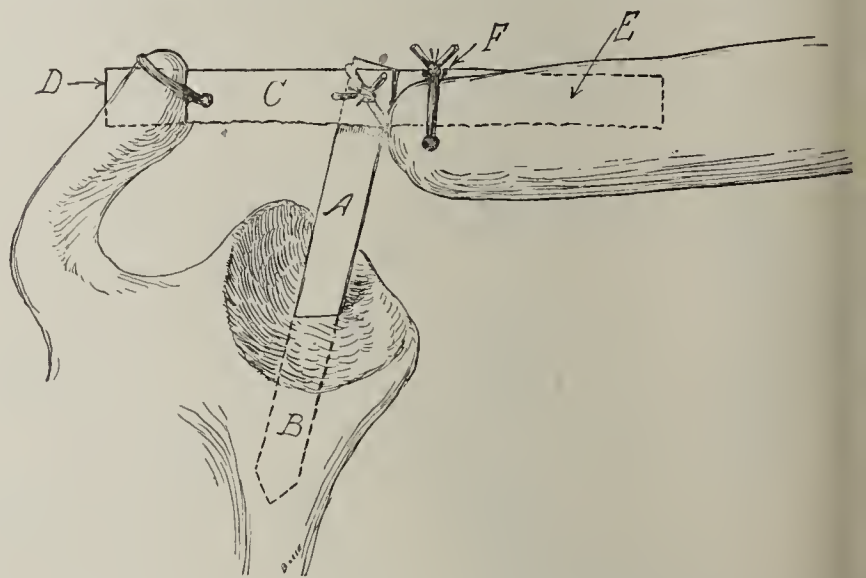


Fig. 3 (Case 1).—Diagrammatic drawing (anterior view) to show the trusswork of tibial grafts in position and fixed with kangaroo tendon. Graft C is inlaid into the shaft of the humeral fragment at E, and mortised into the acromion process at D. Graft A is mortised into the glenoid body of the scapula at B, and attached by means of kangaroo tendon to Graft C at the point where the latter graft meets the end of the humeral fragment.

The practice of inserting metal plates (as recommended by some surgeons) is absolutely contraindicated in this work. The use of metal plates as the internal fixation agent not only robs the graft of mechanical stress, but an influence is thereby added

that contributes strongly toward the stirring up of old infections, if such remain in the tissues. Whereas, in tissues retaining only a slight amount of an original infection, a bone-graft operation speedily done with minimum trauma may bring satisfactory results, the introduction of a foreign body (such as a metal plate,

inch to six inches, and averaging about two inches; ten cases were for nonunion without loss of bone; the remaining four cases were for malunion. These cases are classified anatomically in Table 1.

TABLE 1.—SEVENTY-NINE CASES OF FRACTURE TREATED BY BONE GRAFT, GROUPED ACCORDING TO THE BONES INJURED

Site of Injury	No. of Cases
Radius	23
Ulna	17
Radius and ulna	4
Humerus	12
Humerus and ulna	2
Metacarpal	3
Mandible	1
Total cases, head and upper extremities.....	62
Tibia	12
Femur	4
Patella	1
Total cases, lower extremities.....	17
Total number of cases considered	79

SPECIAL METHODS

Some of the various methods of plastic repair employed in this series of fractures, more than four fifths of which involved loss of bone, are briefly described in the following groups of cases:

Restoration of Loss of Bone at Shoulder.—Owing to the exposure of the upper portion of the body in trench warfare, shoulder injuries, and particularly those involving the upper part of the humerus, have been frequent in the recent war. Through the rather extensive practice of certain surgeons at the front, more especially of the French, of removing large portions of bone at or near the shoulder-joint in such injuries as these, there has resulted a notable group of cases in which shoulder function is very nearly negligible, if not entirely destroyed, on account of the loss of bony framework over which the shoulder muscles might play. Of all surgical conditions, none pre-



Fig. 4 (Case 1).—The plastic operation in this case was performed four and one-half months after the patient was wounded and two months after the wound had healed. The roentgenogram demonstrates restoration of loss of bone by two tibial grafts, eight weeks after operation. Graft 1 was inlaid into the shaft of the humerus and mortised into the acromion process. Graft 2 was mortised into the glenoid body of the scapula and contacted with Graft 1 at the point where that graft met the humerus. During the union of the grafts the arm was held by a plaster-of-Paris shoulder spica in an elevated anterior posture and in such relation to the scapula that the powerful thoracic muscles controlling this bone might later move it and in a large measure restore its loss of function by causing the scapulothoracic motion to be compensatory for loss of shoulder motion.

nails or screws) adds a second devitalizing element, which, in the battle of tissues, may turn the scales unfavorably, with the result that infection again breaks out.

ANALYSIS OF CASES

A careful analysis of the first 100 cases of fracture treated by bone graft at U. S. Army General Hospital No. 3 during the period from July 15, 1918, to May 1, 1919, has yielded, it is believed, valuable data in regard to possibilities of treatment. Of the 100 cases, seventy-nine involved bones in which injury resulted from high explosive shell, machine gun bullet, or shrapnel; seventeen were simple fractures of the long bones; the remaining four cases were compression fractures of the spinal vertebrae. All the simple fractures and the spine cases have been successfully treated, in that they have healed, in each instance, without infection, and have shown bone growth by roentgenographic examination within a reasonable period after transplantation of the graft. In every case of fracture of the long bones, function has been restored, while in the spine cases there has been an inhibition of symptoms. Of the seventy-nine cases of fracture by projectiles, treated by bone graft, sixty-five, or 82 per cent., were for loss of substance varying in amount from one-half

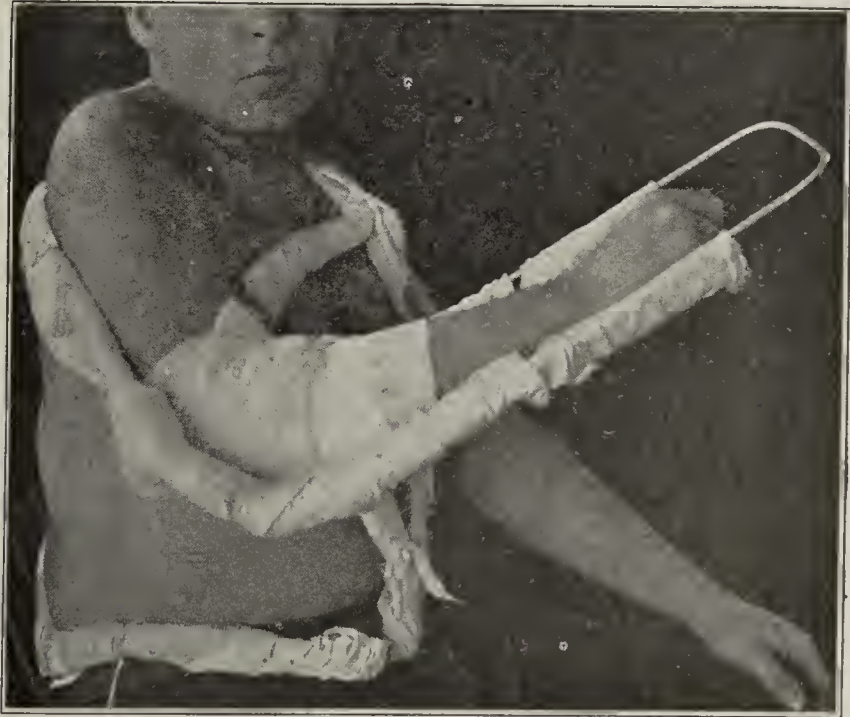


Fig. 5 (Case 1).—Type of brace applied after removal of the plaster spica. This brace is so adjusted as to allow the arm to descend to a lower position than that maintained during the union of the grafts to scapula and humerus. This new position brings a slight amount of lateral stress on the grafts, thus stimulating their hypertrophy and development. It is obvious that this new posture causes the lower angle of the scapula to separate itself from the thoracic cage.

sents a picture of greater helplessness than a dangling arm from which the upper portion of the humerus is missing.

The high frequency of shoulder and forearm injuries is strikingly borne out in Table 1. In this series of seventy-nine cases of fracture by war projectiles, injury to bones of the upper extremities, as compared with those of the lower, has occurred in a ratio of nearly 4 to 1. Of the total number of cases of injury in the upper extremity, the humerus has been involved in fourteen instances, or more than 25 per cent. Cases of loss of substance in the humerus with loss of shoulder function have been classified in two groups, with respect to treatment:

Group 1. Restoration of Shoulder Motion and Function: This class consists of cases in which the

the patient can functionate satisfactorily without the upper end of the fibula. In these cases, whenever possible, the principal muscles of the shoulder, such as the pectoralis major, the supraspinatus and the subscapularis, are firmly affixed subperiosteally to the transplanted head and neck of the fibula.

Group 2. Shoulder Function Restored by Compensatory Scapulothoracic Motion (Figs. 2, 3, 4 and 5): This group includes cases in which, in addition to loss of bone, the musculature of the shoulder has been destroyed or severely injured to such a degree that one cannot hope to secure a return of shoulder-joint motion. In these cases, the loss of bone is restored by

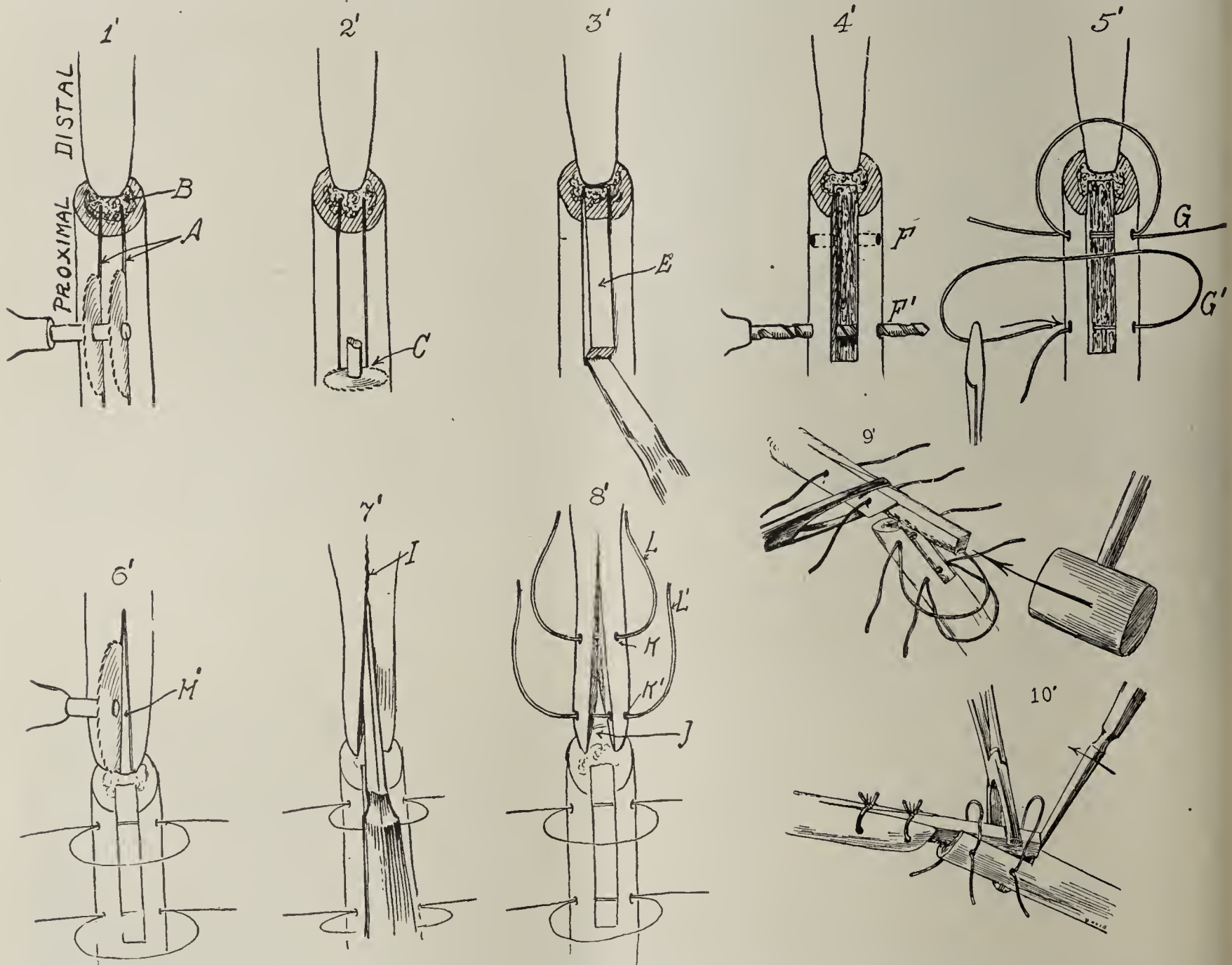


Fig. 6 (continued).—Diagrammatic drawings 1' to 10' illustrate the author's technic in cases in which the end of the bone fragment (distal upper fragment in this case) is conical in shape and too small in diameter to receive the usual inlay graft which is shown in the proximal, or lower, fragment in these drawings. A wedge-shaped piece of cortex, *H*, is removed from the upper fragment. A split at the end of the wedge cavity may, or may not, be made by means of a thin osteotome, as shown at *I*. If the fragment is small in diameter and osteoporotic, as is usual in these cases, the bone may be bent on both sides of the cavity in the region of *I*, and the wedge cavity may be enlarged by driving a wedge-ended graft of larger diameter into it, as demonstrated in Step 9'. In Step 10', the wedge end of the graft is firmly immobilized in the distal or upper fragment by means of kangaroo tendon. The other end of the graft is then forced into the proximal fragment by means of a strong clamp at the same time that the graft is being levered endwise by means of a narrow osteotome, the object of this procedure being twofold; first, to restore as far as possible the length of the ulna, and secondly, to bring end stress on the graft as a stimulus to bone growth. These drawings were made with the distal fragment of the ulna uppermost because of the position of the arm during operation.

humerus has been destroyed, but the musculature has been sufficiently preserved to enable the surgeon to hope for a return of shoulder-joint motion and function, provided the bone be replaced. The author has restored motion and function in such cases by transplanting into the humeral fragment the head and upper end of the fibula to replace the upper portion of the humerus that has been destroyed. He has resorted to this operation many times in his civil practice, as well as in military work, and has invariably found that

ankylosing the humerus to the scapula by a truss-work of tibial grafts, usually two in number. During the union of the grafts, the arm is immobilized in an elevated anterior posture, and is held in such relation to the scapula that the powerful scapulothoracic muscles which control this bone may later move it. Thus, by causing the scapulothoracic motion to compensate for loss of shoulder motion of the arm, the lost motion of the arm and the shoulder is restored to a surprising degree.

In restoring loss of bone near joints, this technic has been employed: By means of an osteotome or chisel, a wedge-shaped mortise is made in the joint fragment and is extended under the capsule, and sometimes completely through to the joint cartilage, without damaging the joint. One end of the graft is driven into this wedge-shaped mortise. The other end of the graft is then inlaid into the long bone fragment by the usual inlay technic and is fixed with kangaroo tendon (Fig. 3).

Restoration of Long Bones.—Restoration of the shaft of the humerus, femur, tibia or any long, large bone has been accomplished by means of a graft inlaid by the author's usual inlay technic, as illustrated in Figure 6, in the larger fragment at *A*, *B*, *C* and *E*. On bones of the forearm, or on any bone of small diameter, or in cases in which a bone of large diameter has become conical-ended, as frequently occurs, the mode of repair which has been resorted to is designated, for purpose of description, as the "fishpole" technic (Fig. 6 *H*, *I* and *J*), since a similar method is employed by the artisan in mending a fishpole.

The influence of stress on the hypertrophy and metabolism of bone has been more strikingly illustrated in bone graft restoration of the shafts of long bones than in any similar class of work. However small the

cases is the plaster-of-Paris splint, applied with the utmost care and molded to the bony contours of the extremity. It should always include at least one joint above and one joint below the bone involved, with due attention given to position, which is of the greatest importance. By way of illustration, in cases of injury of the upper portion of the ulna, the arm should always be put up straight, never with the elbow flexed. In cases of injury at or near the lesser trochanter of the femur, the extremity should always be immobilized in a plaster spica with the thigh abducted and flexed.

Synthetic Grafting of Tissues in Construction of New Fingers.—In

two cases of loss of four fingers with the adjoining metacarpal bones as a result of high explosive shell and shrapnel wounds, the hands were completely helpless, so far as grasping and holding were concerned. In these cases, function has been restored to a great extent by the synthetic construction



Fig. 8 (Case 2).—Loss of about 1½ inches of shaft of humerus.



Fig. 7 (Case 2).—Extreme laxity of left arm due to loss of substance in shaft of humerus as result of wound by machine-gun bullet at Cantigny. The plastic operation for restoration of bone and function in this case was performed seven months after injury and two months after wound had healed.

diameter of the graft, provided it be protected from fracture by external support and at the same time be allowed to withstand stress, it will eventually restore the lost bone in almost every anatomic particular, namely, in diameter, strength and external contour, as well as in respect to the internal architecture.

Immobilization in Extremity Work.—By making the most of all known mechanical joints and by the insertion of kangaroo tendon in such ways as to afford the best internal fixation, in conjunction with the most perfect external fixation by plaster-of-Paris dressings, the extremity being placed in various "positions of neutral muscle-pull," immobilization of the involved fragments has been found possible. Too great emphasis cannot be laid on the importance of putting absorbable ligatures in the skin, so that carefully applied plaster-of-Paris dressings need not be disturbed for a period of at least eight weeks after implantation of the graft. Plain catgut No. 0 or No. 1 with suture-holes puddled with tincture of iodine, serves admirably for this purpose. Chromic catgut, No. 0 or No. 1, is also suitable. The buried sutures in the soft parts should always be small in diameter and as limited in number as possible. The only adequate postoperative dressing in these



Fig. 9 (Case 2).—Method of immobilization of fractures of humerus. In this case the dressing was allowed to remain on for eight weeks.

of new digits. One of these cases is illustrated in Figures 12, 13 and 14. By providing an apposing surface for the thumb, the usefulness of the member has in each instance been restored.

In plastic work of this nature, which involves the transplantation of more than one kind of tissue, a two-step or multiple-step procedure is the only method whereby a successful sequence may be expected. It is essential, for example, in handling soft parts and bone (as in the construction of new fingers, in plastic repair



Fig. 10 (Case 2).—Tibial bone graft firmly united in position, ten weeks after plastic operation.

of the jaw, etc.) that skin and subcutaneous tissues be firmly united with the host-tissue and that circulation therewith be well established before implantation of bone. Ease of technic and the possibility of obtaining ample soft tissues and bone have also led the author to recommend strongly this type of operative procedure.

Repair of the Mandible.—Probably no branch of surgical repair presents greater difficulty of mechanical fitting and adjusting than in injury to the lower jaw, involving extensive loss of bone. Owing to the irregularity of contour of the jaw fragments, hardness of the bone and lack of anvil stability, such work demands an accuracy and precision of technic that can be secured only by the use of delicately adjusted motor tools, such as the author's tiny circular saws, burrs, drills, end-mills and the like.

Of primary importance is the cosmetic result. In many cases this depends entirely on the construction of a suitable graft framework over which to restore the contours of the face. Such a framework must secure the adequate fixation of the jaw fragments, as well as restoring, in many instances, loss of bone substance. In his plastic work on the jaw, the surgeon will do well to cooperate, so far as possible, with the prosthetic dentist in the application of the most efficient intradental splints. Use of such splints is, however, in many instances, impossible, owing to the extensive loss of teeth and of bone. In the latter cases, the sole means of fixation must be provided by the graft, which should be molded and firmly inlaid into each fragment, adequate in any emergency (such as removal of the dental splint on account of pressure necrosis, etc.) to supply the requisite fixation.

In other work, such as the restoration of the shafts of long bones, neck of femur, etc., the tibia has been found a satisfactory source from which to obtain the graft. In work on the jaw involving extensive bone loss, however, the tibial dimensions are not always sufficient to supply a graft of the necessary curve and size. In such an event, the side of the ilium, adjacent to the anterior superior spine, is the only bone, with the possible exception of the outer table of the skull, which is of adequate dimension to allow the proper modeling of the graft, which is done by means of motor-driven tools in a manner resembling the scroll-work of the cabinet-maker.

Relief of Compression Fractures of the Vertebrae.—The use of the bone graft as a means for relief of compression fractures of the vertebral bodies has afforded highly satisfactory results. On account of meager bone growth and inadequate bone repair around crushed vertebral bodies, and because of constant interference with bony union by the respiratory and voluntary motion, nature, unassisted, does not bring about the proper repair in these cases, even though efficient external means of immobilization be employed for months, and sometimes even for years. To supply the deficiency resulting from lack of bone repair, the bone graft offers a sure means of relief, and its indications in such cases are as definite as in any pathologic or traumatic conditions encountered. It is inserted into the spinous processes by precisely the same technic as has been devised by the author for the treatment of Pott's disease of the spine (Fig. 15).

Preoperative Treatment of Persistent Infection.—In our first series of 100 fracture cases treated by bone graft, we found that postoperative wound infections were more frequent in the last twenty-five cases than previously. However, these cases did not include in



Fig. 11 (Case 2).—Stability of arm from union of graft, ten weeks after operation. Such a posture was impossible before operation.

all instances those wounded at a later date, but rather those in which the primary wound took longer to heal; and the later infections, following the plastic operations, are attributed to a more severe primary infection and to a less complete immunization on the part of the patient.

At the time of the plastic operation, positive cultures were occasionally found in the scar tissue around the bone ends, and small sequestrums were removed from the bone fragments. Not all of these cases, however, showed infection following the operation. In those cases which did, the infection was usually of a mild, low-grade type, apparently owing to the attenuation of the infecting organism or to a partial previous immunization of the patient against that organism.

The scar, on account of its low-grade tissue and its deficient blood supply, furnishes a most unfavorable environment for the reception and nourishment of the graft. To obviate the possibility of subsequent infection in cases which, from their past history, seem unfavorable, and in order to furnish healthy tissues in which to implant the bone graft later, it has been the author's practice to excise the scar at a preliminary operation, laying bare

the bone ends, and replacing the scar by plastic flaps of healthy skin, subcutaneous tissue, muscle, fat, etc. If, as has usually been the case, satisfactory healing of the wound takes place, the bone graft operation follows after a period of from ten days to two weeks. By means of such a two-step operative procedure, healthy tissue is provided for the subsequent implantation of bone, and a successful sequence is more reasonably certain.

Source of Graft Material.—Owing to its accessibility and favorable contour, the tibia, perhaps of all the bones of the body, as a source of graft material affords the greatest ease of technic. Moreover, bone from the tibia is nearly always preferable for grafting purposes, not only on account of the dimensions and the plane surface of this bone, which permit of a wide choice in the selection of material, but also because of its characteristic strength and osteogenic activity. In the treatment by bone graft of the foregoing series of 100 cases of fracture, the tibia with few exceptions furnished the graft material. The exceptions were in cases of sliding grafts to restore loss of substance in the humerus, femur or tibia, and in one instance of synthetic transplantation of tissues to form a new finger, in which case bone was transplanted from the clavicle.

Avoidance of Operative Trauma.—There are traumatic influences which have an important bearing on the success of a bone graft operation. It is necessary to avoid certain faults in technic, such as excessive length of operating time, with the resultant drying of the graft or host tissues from contact with the air, rough use of the retractors, poor mechanical fit of

graft, absence of coaptation of similar bone layers, or direct trauma from wedging or crushing by the chisel and mallet.

Table 2 permits a comparison of the average operating time with the shortest in certain cases, and has been inserted because it is believed that in no other class of surgery does length of operating time so materially influence results. In this work, in which we are deal-

TABLE 2.—SUMMARY OF TIME REQUIRED IN BONE GRAFT OPERATIONS, ACCORDING TO SITE OF INJURY

Bone	Time of Operation—	
	Average	Shortest
Humerus	1 hour	45 minutes
Radius	47 minutes	25 minutes
Ulna	33 minutes	19 minutes
Femur	55 minutes	21 minutes
Tibia	23 minutes	14 minutes

ing with rigid tissues, every effort must be made to maintain to the fullest possible extent the viability of the transplanted bone, a condition largely dependent on the early union of graft tissue with host tissue and on the adequate establishment of nourishment. Drying



Fig. 12 (Case 3).—Left hand of an American soldier who lost completely the four fingers and adjoining metacarpal surface following a high explosive shell wound at Château-Thierry. One may note the absence of any apposing surface when the thumb is flexed, as a result of which nothing can be grasped or held.



Fig. 13 (Case 3).—To restore lost function of hand, the synthetic transplantation of soft tissues and bone was undertaken in a two-step operative procedure. Skin and soft parts were first turned up from the chest wall to form a boneless finger. Through a pedicle left attached to the chest wall, supply of blood was furnished until circulation with the hand was thoroughly established. The hand and arm were immobilized in plaster for four weeks. In the second operative step, the boneless finger was first cut loose from the chest wall. A tibial graft, inserted through the soft parts, was then mortised firmly into the os magnum. A sliver graft, indicated by the arrow, was affixed alongside for increased osteogenesis. The roentgenogram was taken four weeks after the implantation of the grafts, which now have become firmly united to the bones of the hand.

of the tissues from contact with the air should be constantly guarded against, not only by the use of saline

solution, but by completing the operation in the shortest possible time consistent with good work and with minimum trauma.

Final Results in Forty-Eight Cases.—Too short a time has elapsed to pass judgment, at the present date, on the entire series of 100 cases of fracture. However, in forty-eight cases that were treated before



Fig. 14 (Case 3).—New finger six weeks after last operation. The patient is now able to grasp and hold objects with his thumb and grafted finger.

March 1, 1919, and have, therefore, afforded opportunity for observation over a period of at least ten months, we feel justified in reporting definite conclusions.

Of these forty-eight cases, the results in six are questionable; the grafts are still in situ and the roentgen ray reveals bone growth, but the wounds were primarily infected and there yet remain one or more sinuses. Three of these questionable cases, however, show favorable in-

dications of ultimate good results; the other three cases will probably be failures.

Four of the forty-eight cases are definite failures. Of these, one case, a sliding inlay from a tibia to a femur to stabilize a resected knee, was complicated by pneumonia five weeks after the operation; sinuses broke out on both sides of the knee, with a resulting infection of the entire scar tissue of the knee and a failure of part of the graft to "take." Of two radius cases that were failures, one showed a positive Wassermann after, but not before, the operation; and the patient himself removed the fixation dressing on three different occasions. The other radius case showed a bad infection of dense scar tissue. The fourth, and last case of failure, was a humerus case with loss of three inches of substance, and with much scar tissue. The wound broke down, and examination by roentgen ray revealed that the lower end of the graft was not attached to the distal end of the humerus.

Subtracting this group of ten cases, of which four are definite failures and six questionable cases, we have thirty-eight cases remaining, all of which have shown perfect results in respect to postoperative primary healing of the wound, proliferation of new bone as demonstrated by the roentgen ray, and restoration of function. This yields a rate of 79 per cent. perfect results, with a possibility of an ultimate 85 per cent., should three of the questionable cases prove successful.

A complete report of all the plastic operations performed at U. S. Army General Hospital No. 3 will be published as soon as sufficient time has elapsed to permit of trustworthy deductions.

SUMMARY

The following conclusions are based not only on a study of cases and results at U. S. Army General Hospital No. 3, at Colonia, N. J., but also on the author's

previous experience with over 1,800 cases treated by bone graft in civilian practice, as well as in extensive animal experimentation. It is believed that the careful observance of these points is essential to success in this class of work.

1. *Early Observation of Wound.*—A careful study of the wound should be made before it has healed, if possible. The type of infecting organism (*Streptococcus hemolyticus*, gas bacillus, etc.), the nature of the clean-up operation and the manner of healing of the wound should be noted.

2. *Time to Operate.*—In a few cases it is permissible to operate after the wound has been completely healed for a period of two months, while in others, on account of possible latent infection, it may be advisable to delay the final plastic work for at least six months. In some of the unfavorable latter cases, a two-step operative method may be followed, consisting of a preliminary excision of scar tissue with replacement by a healthy skin flap, muscle, fat, etc., followed after a period of from ten days to two weeks by the final bone plastic operation.

3. *Immediate Preoperative Observations.*—For the purpose of determining the existence of latent infection, splints should be removed, and deep massage and rough manipulation should be practiced for a period of from one to two weeks prior to the operation. During

this time the temperature should be observed, and the parts should be carefully examined for local tenderness or any evidence of a recrudescence of infection. The field of operation should have a forty-eight hour preparation, iodine technic being preferred.

4. *Plan of Operation and Choice of Incision.*—By means of roentgenographic and physical examinations, the proposed plan of operation, especially in respect to location of graft, should be determined before incision is made. If possible, the skin incision should not lie directly over the proposed bed of the graft, and the operation should be so planned that the graft may be covered without undue tension of skin and,



Fig. 15 (Case 4).—Case of compression fracture of third, fourth and fifth lumbar vertebrae caused by fall in dugout. Panel of vertebrae (from clay model of case), showing relief of condition by a tibial graft inlaid into spinous processes from first lumbar to first sacral vertebrae.

if possible, so placed that it comes in contact with healthy tissue instead of scar tissue. In several cases in which this has been accomplished, the graft has healed in by primary union, whereas the scar, even at a

considerable distance from the graft, has broken down completely. In cases of extensive loss of bone, the scar tissue may be pushed to one side, in order that the graft may lie in healthy tissue. Drainage wicks of any kind should never be inserted at the time of operation.

5. *Duration of Operation.*—It is believed that the shortest possible operating time consistent with good work and with a minimum amount of trauma is requisite to successful results in these cases.

6. *Use of Motor-Driven Instruments.*—These are essential: (a) on account of the necessity for rapid work in order that drying and traumatization of the graft tissues and host tissues may be avoided; (b) in order that a cabinet-maker fit may provide for mechanical fixation of parts and for the operation of Roux's law of frictional stimulus to bone growth with a view to an early and adequate establishment of nourishment to the graft; and (c) on account of the necessity for the fulfilment of the law of anociassociation. The motor outfit with its various tools to produce automatic fits seems indispensable. The motor-saw, when used by the proper technic, does not heat nor glaze the bone.

7. *Adequate Length of Graft.*—The graft should always, when possible, be of the inlay type, and sufficiently long to extend into each fragment for a distance of at least 2 inches, and always beyond the sclerosed area. The gutter should extend well into the healthy marrow of the host-bone, with which the marrow of the graft should be amply contacted. It is exceedingly important that the bridge of marrow from the marrow canal of one fragment to that of the other should be restored for the transmission of blood vessels, bone cells, etc.

8. *Type of Graft.*—The graft should, if possible, be autogenous, consisting of all the bone layers, namely, periosteum, complete thickness of cortex, endosteum and marrow substance; and it should be so inlaid that the fit is perfect, with exact apposition of corresponding layers of graft tissue to those of the host fragments. Such a contacting fit not only favors the mechanical fixation of the fractured bone and the graft, but also the very potent frictional stimulus to bone growth, emphasized by Roux.

9. *Supplemental Grafts for the Purpose of Osteogenesis.*—Small silver grafts placed alongside the principal fixation graft are most efficacious in supplying additional foci for bone growth.

10. *The Graft as Main Fixative Agent.*—Fixation should always be secured by the graft itself, and not by metal plates or other foreign material, since it is the stimulation from the stress carried by the graft itself that is largely responsible for the healthy metabolism of the graft and for bone growth.

11. *Suture Material.*—The graft should be held in place by a minimum amount of absorbable suture, preferably kangaroo tendon, which is the ideal material for this purpose, in that it is tolerated by tissue, readily absorbable, very strong and reliable. Fine absorbable suture material should be used for the skin and underlying soft parts.

12. *Postoperative Fixation.*—The limb should be firmly immobilized by a plaster-of-Paris cast for a period of from eight to ten weeks following operation, and as long thereafter as the roentgen ray shows it to be necessary. Emphasis should again be placed on the importance of using absorbable skin suture material in order that the plaster dressing need not be disturbed until time for the removal of the splint.

DIAGNOSIS AND SURGICAL TREATMENT OF INTRATHORACIC GOITER

PALLIATIVE TRACHEOTOMY; TRACHEOSTENOSIS *

GUSTAV SCHWYZER, M.D.

MINNEAPOLIS

The term intrathoracic goiter indicates in a general way that the thyroid growth is located in the chest. Woelfler used to classify these goiters as substernal, subclavicular and endothoracic. Others speak of partial or total intrathoracic goiters. None of our goiters belong to the endothoracic or total intrathoracic group; they were all complicated by a goiter on the neck itself.

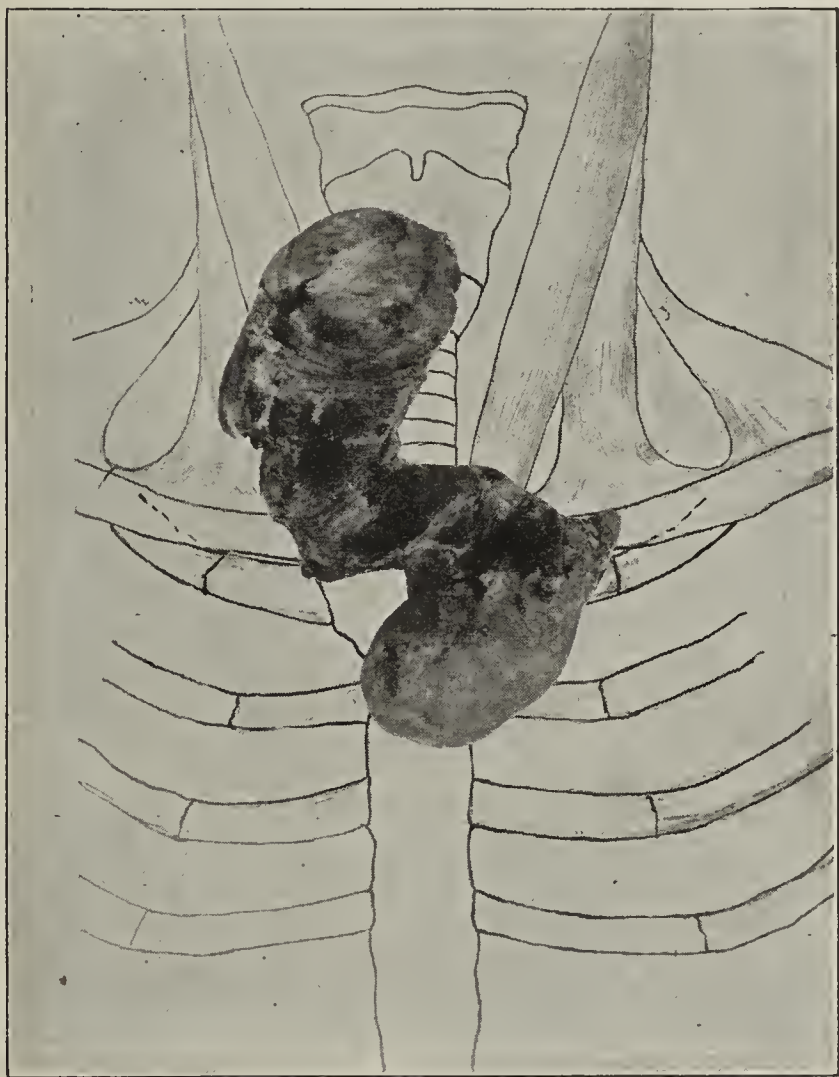


Fig. 1.—Intrathoracic goiter in Mrs. R., aged 57.

In order to eliminate confusion with the ordinary struma profunda projecting into the sternal notch, I shall consider only those goiters that reach to the height of the second rib or lower.

ANATOMY

In order to gain a clear understanding of the symptoms of intrathoracic goiter we must consider for a moment its anatomic relations.

The aperture in the thorax anteroposteriorly measured from the upper border of the sternum to the first dorsal vertebra is only 5 or 6 cm. in distance, and the lateral diameter taken through the middle of both ribs is from 9 to 10 cm. It is evident, therefore, that the aperture into the thorax is the most dangerous place if a goiter is located here, as this bony ring cannot give, and compression of the adjacent organs going through is unavoidable. If the goiter goes through

* Read before the Minnesota Academy of Medicine, Oct. 8, 1919.

the aperture into the cavum mediastini, conditions become more tolerable. If it stays back of the sternum, it compresses particularly the trachea. The esophagus does not give any symptoms in most cases; though

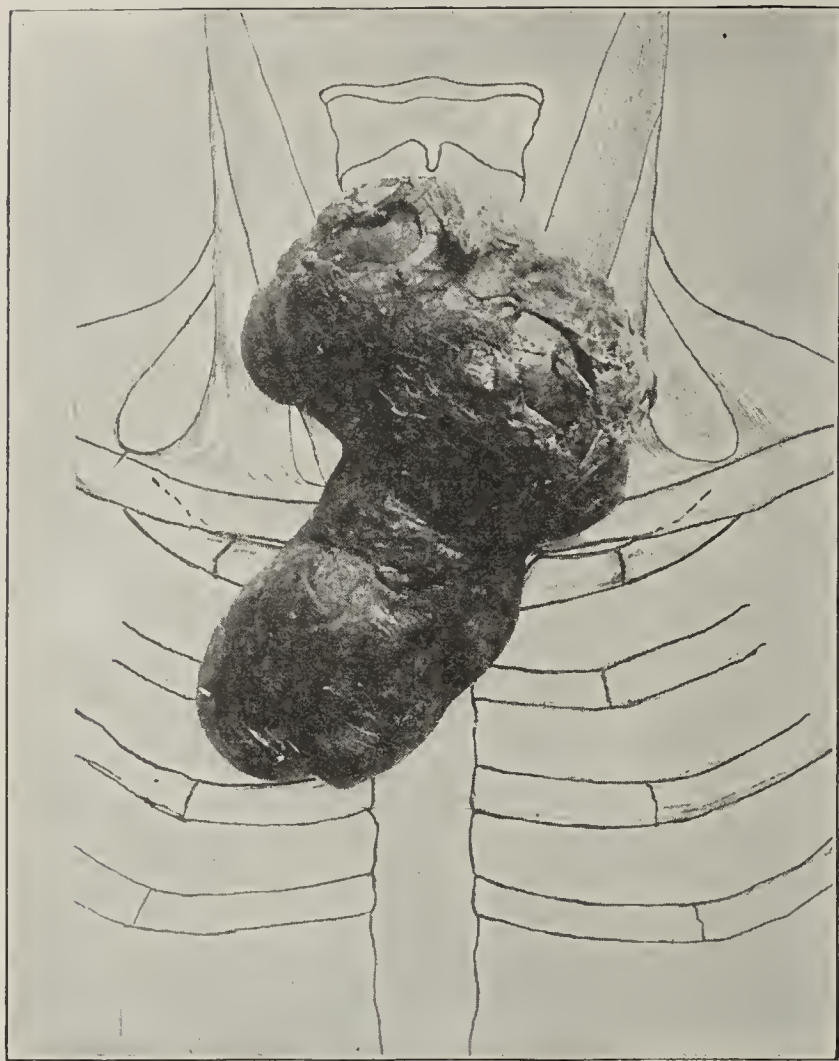


Fig. 2.—Intrathoracic goiter in Mrs. C., aged 63.

difficulty in deglutition speaks for a retrosternal goiter.

The cavum mediastini is bordered in front by the manubrium sterni, the anterior ends of the clavici and the first ribs, posteriorly by the first three dorsal vertebrae, on the side by the parietal pleurae, and inferiorly by the big blood vessels, the vena and arteria anonyma, the arch of the aorta, and the pericardium. The organs we deal with in this cavum are the vena anonyma, back of it the truncus anonymus arteriosus, the common carotid, and the subclavial artery, the nervi vagi, recurrentes and phrenici, the thoracic duct, the tip of the lungs, the trachea and the esophagus.

DIAGNOSIS

A considerable aid in the diagnosis is a good history. We may learn that the patient had a goiter for years, and that this goiter disappeared or "was cured," as the patient often expresses himself. He may mention that breathing was always labored at the least muscular effort, and difficulty in breathing remained even after the disappearance of the goiter on the neck. In addition the patient may say that in bed he is forced to lie in a certain position. Often he requires no pillow or, on the other hand, he may have to elevate his head unusually high. Should he change the well-chosen position of the head unconsciously in his sleep, the patient awakens feeling choked, has to sit up straight in bed, or runs to the window in an effort to inhale air. Sometimes he spends night after night in a chair, fearing the recurrence of one of these spells.

INSPECTION

At times such a patient has almost a comical appearance, carrying his head in a high and stiff manner. Again, we may find the head bent forward with the chin approaching the sternum.

Physical Examination.—If no goiter attracts our attention, we now start with a thorough physical examination of the chest. Percussion may give us a distinct dulness over the sternum, or over the sternum and one side, or over both sides. This symptom is a more constant one than the findings perceived through auscultation. The latter examination, though, may help us at times in our diagnosis. The breathing in the upper chest may be so light and superficial that it attracts our attention. This finding points to the fact that there is an impediment to the breathing. The lung may be squeezed to the side, so much so that it cannot inflate. Or a bronchus may be compressed.

Whether or not there is a goiter plainly visible, with or without dyspnea, we are bound to make a careful palpation of the neck down into the jugulum as far as we can reach. We may find a palpatory resistance in the jugulum which is constant or which appears only during deglutition. The larynx may stand very low. We then speak of a ptosis of the larynx. Its excursion during deglutition might be markedly reduced. Consequently we must always remember deglutition when we palpate.

If hoarseness exists, then the laryngoscope will tell us of a paresis or a paralysis of the vocal cord. Again we are a step ahead in the diagnosis. True, there

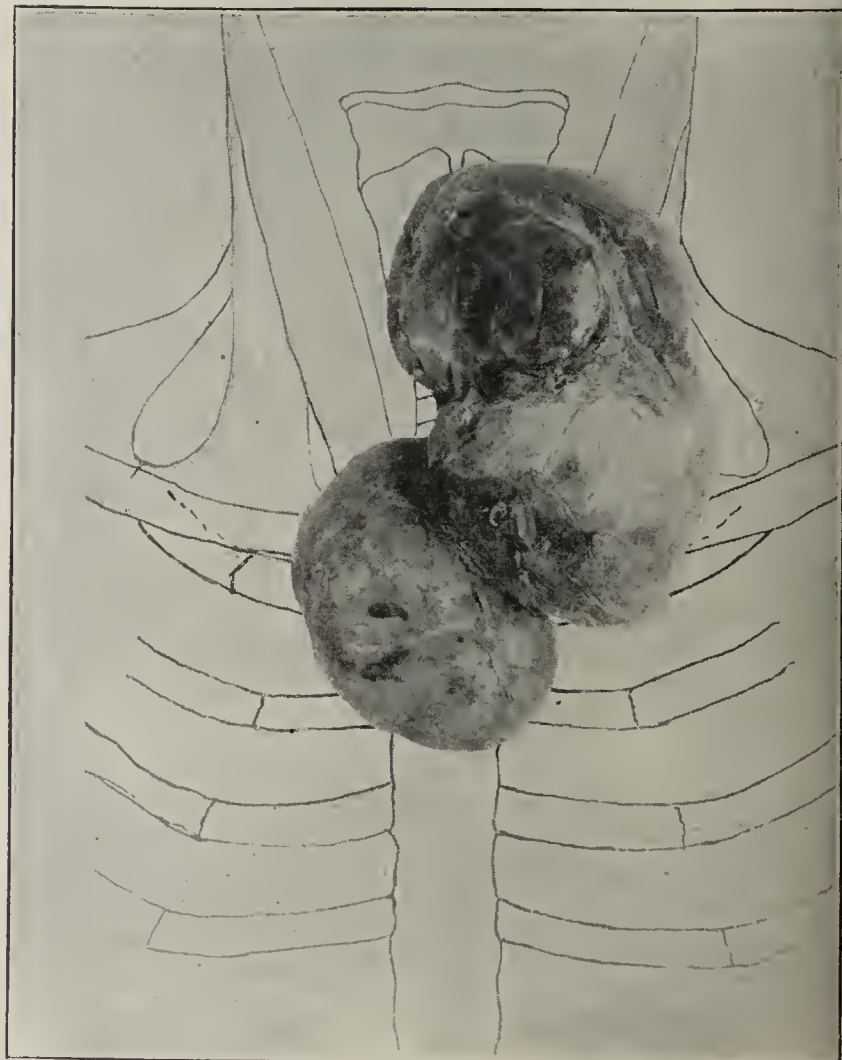


Fig. 3.—Intrathoracic goiter in Mrs. R., aged 53.

are some cases with extreme dyspnea in which the more skilful laryngoscopist will be unable to succeed in seeing far down into the trachea. I will add that not only the vocal cords but also the lower part of the trachea must be included in the laryngoscopic picture.

Pathologic Structure.—At times there are symptoms existing which originate from the special pathologic structure of the goiter, and these also have to be considered.

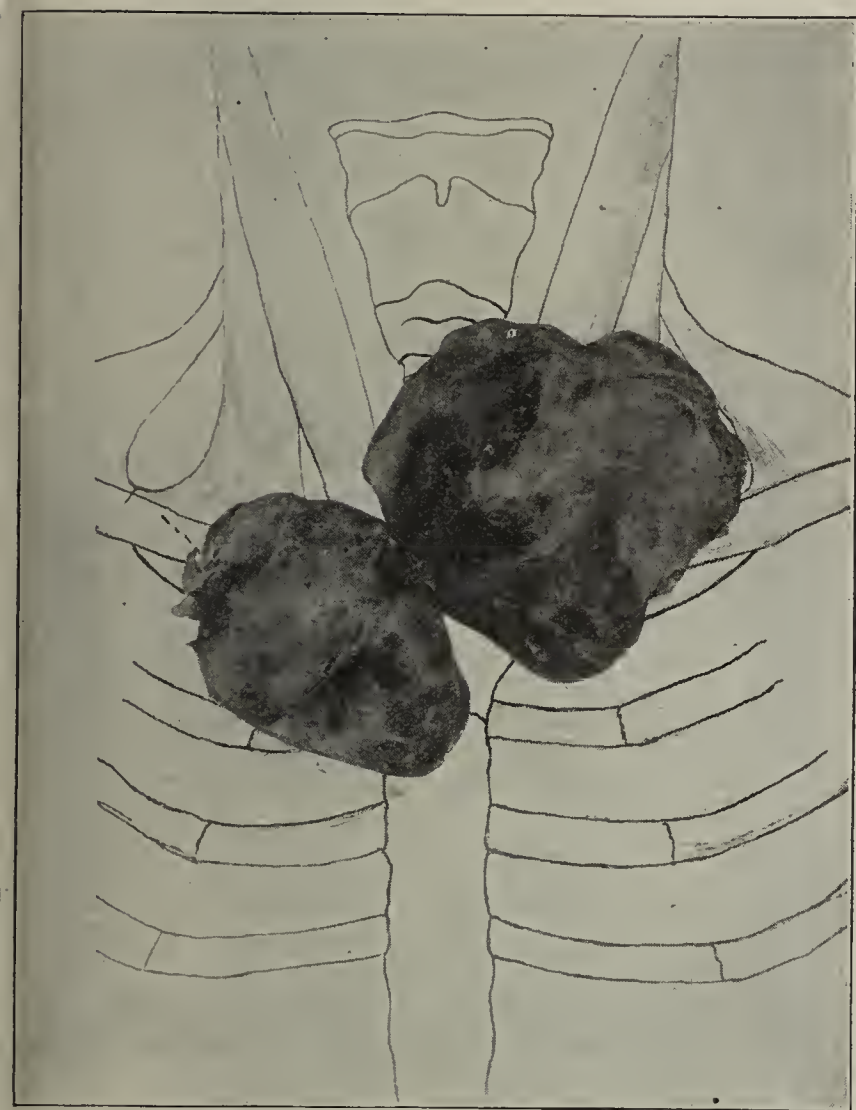


Fig. 4.—Intrathoracic goiter in Mrs. O., aged 64.

The malignant intrathoracic goiter in its initial state is of course intracapsular and cannot be diagnosed. Should we have severe dyspnea and especially paralysis of the recurrent laryngeal nerve together with some metastatic tumor, the diagnosis becomes certain, but a cure impossible.

Fortunately, most of the intrathoracic goiters are of benign nature. In this group belongs the toxic or exophthalmic intrathoracic goiters with their characteristic symptoms: tachycardia, tremor, disturbances of the nervous system, and the various eye symptoms including exophthalmos.

Heart Symptoms.—The connection between the goiter and the heart has long been recognized. We commonly speak of a "goiter heart." A toxic goiter or the pronounced exophthalmic goiter is responsible for the thyrotoxic heart. But there is another important heart affection more commonly found in intrathoracic goiter called the "mechanical goiter heart." It is an accepted thought that pressure of the tumor on the large blood vessels as well as on the nerves, especially the cardiac branches of the sympathetic nerve, can bring on this condition of the heart. On examining the heart itself we commonly find its valves free from murmur. It usually appears enlarged, but because of the dullness mostly constant in the chest, the outlines of the heart become indistinct. The heart action is confused, irregular and accelerated.

A very characteristic symptom is the net of dilated veins on the neck and upper chest anteriorly. The superior vena cava, which brings all the blood from

the upper part of the body into the right atrium, suffers principally through this pressure. That blood is now drained through some side channels (the venae costalis superiores, hemiazygos and azygos) into the inferior vena cava. This phenomenon was observed in one of my cases (Miss H.). Her history tells us that at one time she was treated at a hospital for these varicose veins.

The arterial blood vessels also can suffer.

There are cases reported in which one common carotid and the radial artery of the same side were only faintly pulsating, owing to the severe pressure from an intrathoracic goiter.

Roentgen-Ray Examination.—Good roentgenograms and a fluoroscopic examination are, indeed, a welcome aid for the diagnosis. There are some rare intrathoracic goiters, for instance, tumors in the chest from aberrant thyroids, in which the roentgenographic examination is the only means by which we can detect such a disease. We should have an anterior and a lateral roentgen-ray view, lateral especially, as the intrathoracic goiter is located particularly in the anterior upper portion of the mediastinum. If during deglutition in the fluoroscopic examination the tumor follows the movement of the larynx and trachea, regularly and synchronously, the last doubt in the diagnosis is removed.

Indications for Operation.—Whether or not a case of intrathoracic goiter is operable does not depend on the degree of dyspnea, nor does it depend on the pressure of the nerves, or on any of the symptoms men-

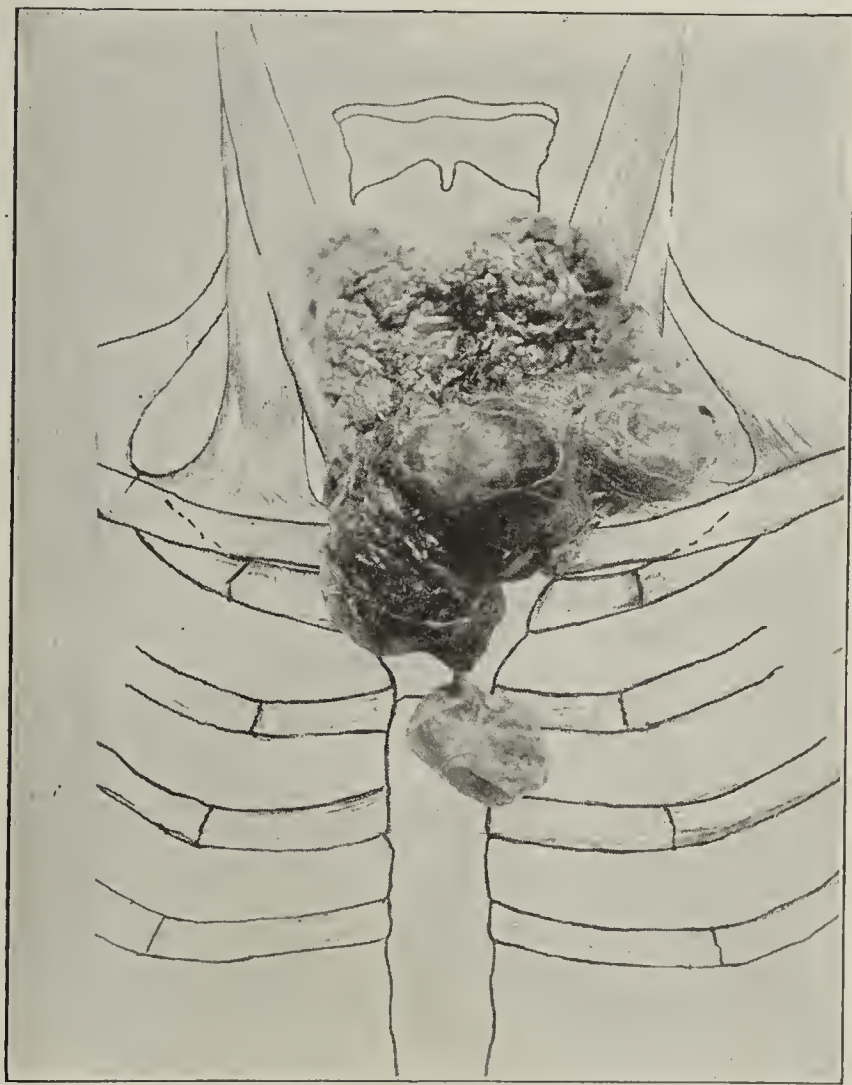


Fig. 5.—Intrathoracic exophthalmic goiter in Mr. C., aged 49.

tioned; but it does depend on the heart. A degenerated heart muscle, a pronounced myocarditis bringing on secondary changes of the other inner organs, is a contraindication for operation. But even after carefully weighing the various heart symptoms, we are

always taking a certain risk, for we have no direct test which will reassure us that the heart is sufficiently resistant for the operation.

SURGERY

A retrosternal goiter with its precarious dyspnea should be operated on without much delay. We must remember that choking spells do not repeat themselves indefinitely, for with each such dyspneic attack the patient is one step nearer his grave. I shall never forget one case at Kocher's clinic which resulted fatally. It was a case in which dyspnea increased so rapidly that not even a tracheotomy could be done. The patient, who had an intrathoracic substernal goiter (found at necropsy), was ordered to bed. He disobeyed the physician's orders, left his bed during the night, and by doing so brought on a new spell of dyspnea, this time fatal.

It is desirable that the operation be begun under local anesthesia if the dyspnea is very marked or if the goiter is of toxic nature. Concerning this point, one of my cases will open an argument. A woman, aged 64, with a subclavicular goiter, died from pneumonia on the fourth day following the operation, which was done under local anesthesia. I am inclined to think that the severe mechanical injury resulting from working directly on the trachea was sufficient cause for the death. It has been my experience that even ordinary goiter operations may be complicated by an acute, putrid bronchitis. For this reason de Quervain in Bern avoids as often as possible dissecting the isthmus free from the trachea unless there is a strict indication for the removal of the isthmus.

Excitement must be kept away from the patient as much as possible. Very important too is the position of the patient on the operating table. Let the patient be the judge to tell us whether the head lies correctly. Only in apathetic patients must we be guided by the stridor. If the latter is minimized, the most desirable position is found. It is of the utmost importance to have an eye on the respiration. If the extreme dyspnea increases to a degree too dangerous for life as the operation progresses, a tracheotomy must be made and a cannula of sufficient length must be introduced to reach beyond the point of obstruction. I prefer the flexible cannula devised by Koenig.

This operation, which is only palliative, proves to be very difficult at times, especially if the trachea is covered by the thyroid mass above the manubrium sterni. The most desirable way that the operation can be performed is to divide the isthmus wherever it is most feasible and dissect it bluntly as much as possible from the trachea.

While surgeons formerly practiced a two-stage operation, we today excise the tumor regardless of a tracheotomy. The tumor itself must be bluntly enucleated from within its capsule. Its blood vessels as they present themselves require exact attention. Only in this way can fatal hemorrhage be avoided. I always start my goiter excisions by tying off the upper horns. I was astonished to find that no severe hemorrhage ever followed. In one case I compressed temporarily with gauze, but I never inserted liquid wax, a procedure recommended by competent surgeons. Should a large blood vessel like the anastomosis become torn, the question in my mind remains open whether the hemorrhage can be controlled without resecting the sternum and the clavicles, a procedure which in itself carries unavoidable complications.

Kocher has devised a good clamp of great value for traction on such intrathoracic tumors. The instrument compresses the tumor, thus avoiding profuse bleeding. The sharp hooks of the instrument prevent it from slipping, and the tumor, therefore, must follow the traction.

I have drained every cavity which naturally exists after such goiter excisions with fine, flexible, rubber tubes. The drains are removed as soon as the secretion ceases. It is astonishing in how short a time the obliteration of such cavities takes place.

Let us consider my own cases. All these intrathoracic goiters were of benign nature; one was a double cyst, two distinctly toxic, one exophthalmic, and the others were colloid, parenchymatous or cysto-parenchymatous goiters. Two were in men and fourteen in women, although the statistics generally favor the male sex for intrathoracic goiters.

The one exophthalmic case, in a man, aged 49, I shall report somewhat in detail:

I performed the ligation operation on both upper horns in January, 1912. The patient, who had the characteristic tremor, perspiration, sleeplessness, sick feeling in the stomach and abdomen, and loss of body weight (160 pounds), showed a pulse of 122 when quiet in bed. The characteristic symptoms existed over the gland, but there was no exophthalmos. The operation had the desired effect. From notes taken in January, 1914, I learned that he improved generally within the two years after the ligation. His pulse came down to between 106 and 110. Still he suffered from his heart beating and from slightly dyspneic breathing. At this examination the laryngoscope detected a deviation of the trachea to the right and compression of the tracheal rings.

Having felt the intrathoracic part of the goiter at the first operation, I proceeded with the excision of the goiter in January, 1914. It proved to be a bloody and difficult operation. The tumor tore in different places, but luck was with me. The patient left the hospital two weeks later.

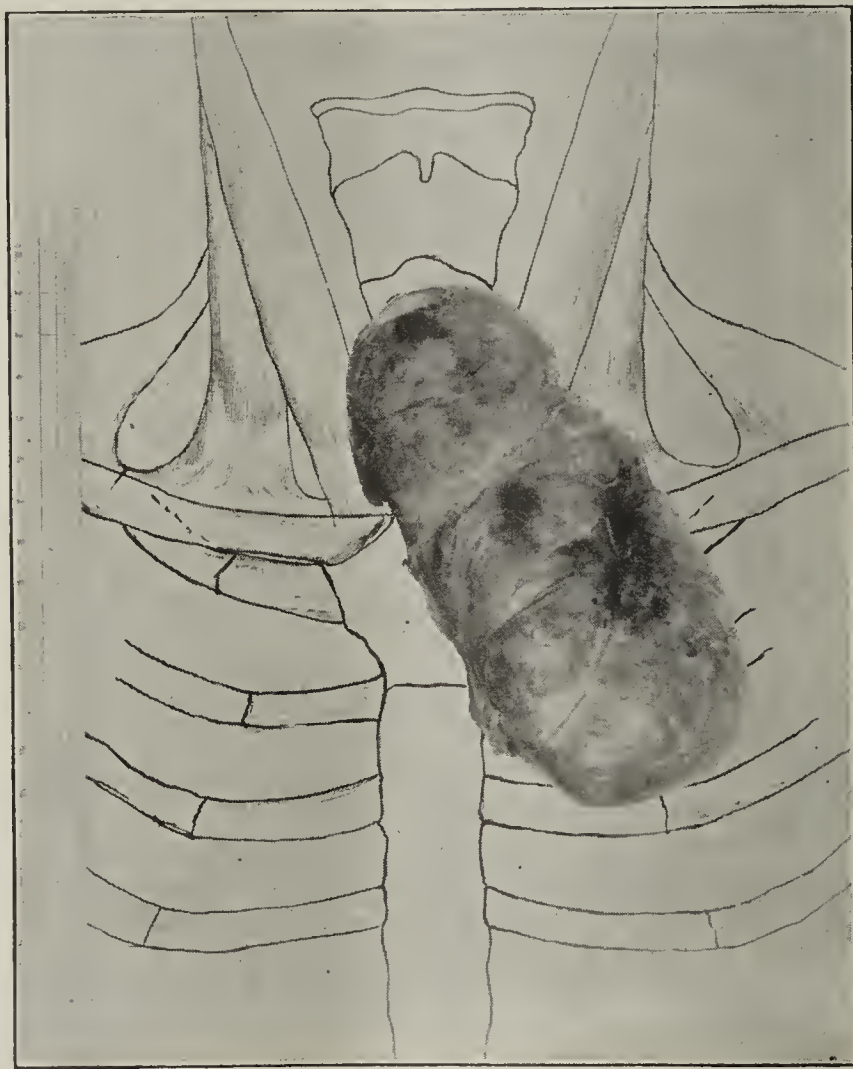


Fig. 6.—Intrathoracic goiter in Mr. M., aged 56.

with a pulse of 76, and in June, 1914 (same year), he writes that he does all the work without a hired man on his farm of 160 acres. His weight is now 200 pounds, his pulse 74, and he eats and sleeps well.

One of my toxic cases was unusual on account of acute mental disturbance lasting about thirty hours following the operation. In her confusion the patient tore the bedclothes and constantly tried to leave her bed.

Two cases showed a plain "mechanical heart":

Mrs. R., aged 57, had a very irregular pulse at a high rate without any pathologic findings over the valves. To my surprise there were only 100 pulsations on the second day following the operation.

Mrs. C., aged 63, had a perfectly normal heart. The tone over all the valves was clear, but the function of the heart was increased in frequency and energy. The pulse rate, previously up to 132, became normal forty-eight hours after operation. The heart in any of our thyrotoxic patients has never responded so promptly, that is, never has come down to a norm in such a short time following excision.

In three cases of the series my diagnosis was incomplete. I thought I had to do with strumae profundae, which proved to be intrathoracic goiters.

Since I always found a goiter on the neck, my attention was drawn immediately to the diagnosis, as I never failed to find dyspnea present, the main symptom.

Owing to the fact that most of my cases date back a number of years when roentgenology had not reached the point of perfection of today, I depended in the first place on the clinical symptoms.

TRACHEOSTENOSIS

As dyspnea caused by compression of the trachea is the main-symptom in intrathoracic cases, I may be permitted to consider this phenomenon for a moment. A normal trachea has the form of a stirrup. Compression by a goiter at any height naturally changes this picture. We have accurate knowledge from specimens taken at necropsies and we know that the natural picture of the trachea can be distorted in almost every way. There may be a sheath formation, or a half-moon formation. The trachea may be strictured circularly by a circular goiter. The trachea may also be deviated to one side; it may be distorted by two different goiters on different sides and even at different heights. There may be a trachea twisted in such a way that surgeons formerly spoke of a scoliosis.

At the beginning of the nineteenth century, a French surgeon (Lullier-Winslow) described the sheath formation of a trachea. Demme, a surgeon in Bern (Switzerland) in the first half of the nineteenth century, demonstrated the same tracheal deformity with brilliant illustrations that have impressed surgeons.

An interesting controversy was started by Rose in the eighties. He had a series of sudden deaths. Some occurred at the time of the goiter operations, and others hours following the operations. He thought that more important than the compression of the trachea itself was the fact that the trachea became softened at the place of pressure. He explained this softening through fatty degeneration. His statement encouraged a number of eminent surgeons of those days to look up matters histologically. The lengthy debate ended in the accepted fact that no fatty degeneration existed in the cartilage, but that an atrophy of the cartilage became evident. Rotter then found the interesting point that the membranous bands between the cartilaginous rings were elongated in all these cases of compression of the trachea. It was then left to Woelfler to settle this

argument, and at the same time bring out facts which led us to believe that the deaths which Rose had on the operating table and which he believed to be due to the softening of the trachea resulted from a collapse of the trachea at inspiration. At the time of expiration, such trachea freed through operation will fill with air like the sail of a boat; but during inspiration the trachea aspirates itself, that is, collapses. The goiter on the trachea is a support and acts like a splint.

I had the opportunity to witness this phenomenon in three cases, though nonintrathoracic. Not having been compelled to make a tracheotomy for any of my intrathoracic goiters, I may be permitted to mention briefly those three cases. They were all in girls from 15 to 20 years old, and all were double goiters. In two of them I was forced to add a tracheotomy within twelve hours after the operation. The dyspnea following the excision gradually became more marked; intercostal inspiration was exceedingly plain. The third patient, with a double struma vasculosa, was breathing with marked stridor. Excision of one goiter cleared the respiration, but as soon as the other side was removed the trachea collapsed at inspiration. I acted quickly and incised the trachea at once. All three patients recovered.

Tracheostenosis very seldom requires surgical correction at the time of operation. The trachea cannula, however, must always have its place among the instruments.

CONCLUSION

If I may be allowed to compare my work in intrathoracic goiters with the general work in goiters, I am impressed by the rather gratifying results, in view of the fact that no other operation has more marked and immediate success. The patient who, with his labored breathing and his cardiac trouble, appears to himself and to others an invalid is now, through removal of the growth in the chest, restored to health immediately.

Maternity Benefit Systems.—The United States is the only one of the leading industrial countries of the world to have no system of state national assistance to maternity according to the Children's Bureau of the U. S. Department of Labor. The countries having such systems are: Australia, Austria, Bosnia, Denmark, France, Germany, Great Britain, Herzegovina, Hungary, Italy, Luxemburg, Netherlands, New Zealand, Norway, Roumania, Russia, Serbia, Sweden and Switzerland. Few of these countries offer benefits to all mothers, but there is a general agreement that wage earners shall be included. The benefits provided consist usually in money, either a lump sum or weekly payments, and occasionally in medicine and medical and surgical services. The expense of the benefits is most frequently shared by the wage earner, the employer, and the state, the wage earner contributing the largest share. In Australia and France, however, the government bears the entire cost. Australia in 1913-1914 paid out \$3,284,839 in maternity allowances, and France calls on the national government for over \$1,000,000 annually and gets another \$1,000,000 annually from local government for this purpose. The English benefits are part of a health insurance scheme for wage earners, of which the government bears a share equal, in the case of the women, to one fourth of the total benefits. In New Zealand there is a voluntary system of health insurance, which includes a maternity benefit, but it reaches so few mothers as to make its effect almost negligible. The method of attack is not through maternity benefits but through adequate nursing service, hospital and medical care, and instruction in the hygiene of maternity and infancy. At present the death rate of New Zealand is the lowest in the world. Australia, on the other hand, gives a maternity benefit of 5 pounds, over which there is no supervision.

Clinical Notes, Suggestions, and New Instruments

IMPROVEMENTS IN TECHNIC FOR THE OBSTETRIC NURSERY

HERBERT THOMS, M.D., NEW HAVEN, CONN.

The daily use of the devices herein described has given excellent results in the maternity department of the Grace Hospital, New Haven, Conn. The first is a simple and efficient



Fig. 1.—Aluminum tag for identification of infants.

method for the identification of babies in the obstetric nursery and the second is a new instrument for use in stretching and retracting the foreskin of newborn babies.

In reading the transactions of the Brooklyn Medical Society for May 2, 1919, I became greatly interested in the various methods that were there described for the identification of babies. All of the methods were efficient, but their adaptability to all maternity hospitals was not great. After some experimentation, the method here

depicted was adopted with uniform success, not only because of its simplicity but particularly because of its adaptability.

A small aluminum tag the size and thickness of a 5-cent piece (Fig. 1), with a raised edge and a perforation near the edge, is used. This is readily written or engraved on with a steel pencil or machinist's stylet. This makes, of course, an absolutely ineffaceable record. Immediately after the birth and tying and cutting of the cord, this tag is tied around the baby's neck by means of linen tape, three knots being used in tying. This tape is not only very strong but also unabrasive. Aluminum is employed because it is noncorrosive, very light, inexpensive, nonabrasive, and readily written on with the steel pencil.

The reaction of the mothers in the hospital since the adoption of this method is interesting. Not only have they been delighted with their "tagged babies," but they insist on taking their babies home with the tag adornment undisturbed.

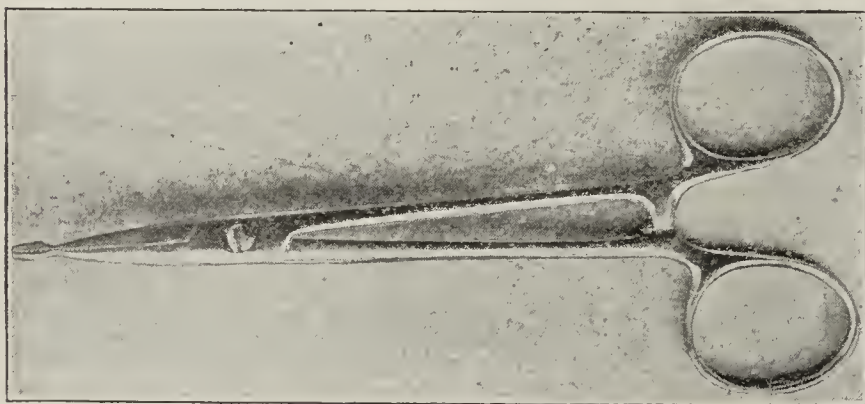


Fig. 2.—Modification of hemostatic forceps for stretching and dilating foreskin.

The instrument shown in Figure 2 is modified from hemostatic forceps. Every one who has used the ordinary hemostat in stretching the foreskin of babies realizes how readily the instrument slips away from the penis. In order to obviate this and to make a more even dilating surface, the instrument here shown was devised. About 0.5 cm. from the end of the forceps on each side is a marked concavity, the purpose of which is readily understood. After the adhesions between the foreskin and the glans have been broken up with an ordinary probe, this instrument is introduced between the glans and the foreskin, and dilatation is easily accomplished.

59 College Street.

A CHAIR FOR SPINAL PUNCTURE*

NORMAN E. WILLIAMSON, M.D., STOCKTON, CALIF.
Pathologist, Stockton State Hospital

In the ordinary method of performing spinal puncture it is difficult to get the patient in the right position. Even when the patient is held by attendants, as has been my practice, there is the possibility of sudden movement closing, more or less, the space between the vertebrae. If a flexible gold or platinum iridium needle is used, there is no danger of breaking; but one may experience considerable trouble in inserting the needle, especially after it has been repeatedly kinked. With the back properly bowed and the needle inserted, it is at times found that the needle is directed too near the perpendicular, and the fluid runs down the needle and is lost on the back. This necessitates a troublesome change of position.



Chair for spinal puncture; arrow points to needle.

I have devised a spinal chair which holds the patient in the correct position so that no attendants are necessary. The front of the seat is so raised that the line of its fall to the lowest point forms an angle of 27 degrees to the horizon. Back of this is a 5-inch curved rise to prevent the patient from sliding off backward. When the patient is sitting at this angle with the back curved outward and the needle inserted, the point of the needle is elevated so that the fluid always drips into the test tube.

A webbing strap with buckle attached to the back of the chair is fastened in front of the abdomen, and the curve of the back is obtained, and fixed by an adjustable bar brought down over the scapulae. The rod passing through this bar can be fixed by a thumb screw to any point in slots in uprights erected at each side opposite the lowest point in the seat.

The curvature of the back is maintained by three points of fixation, and the puncture is made with ease and safety.

* From the Stockton State Hospital.

ACUTE MYELOID LEUKEMIA SIMULATING
MENINGITIS

E. E. H. MUNRO, M.D., ST. LOUIS

REPORT OF CASE

History.—Miss M. W. (589), aged 17, telephone operator, was admitted to the City Isolation Hospital, St. Louis, Sept. 17, 1919, having been transferred from the St. Louis City Hospital because it was suspected that she had meningitis. Her past general health had been good. Of significance in the past history is the fact that she had had an alveolar abscess of the superior right maxilla five months before admission. The abscess had been lanced three times during the past three months. It had given no trouble for the past two and a half months. Occasionally during the past four months the patient complained of swelling of the feet in the evening. Three times she fainted while at work.

The present illness began five days before admission with headache (occipital) and slight vertigo. The patient vomited twice during the first day of illness, although she was not sick enough to go to bed. The next day the patient remained up but complained of vertigo and headache. She vomited four times and slept poorly that night. On the fourth day, fever and delirium developed. On the fifth day, the patient was in a stupor. The family physician sent her to the city hospital, where stiff neck and positive Kernig's and Babinski's signs were noted. A spinal puncture was performed that evening and repeated the next morning. The fluid was blood stained and under increased pressure. Smears and cultures from the fluid were negative. The patient was transferred to the isolation hospital as suffering from meningitis.

Examination.—On admission to the isolation hospital the patient was semiconscious, the temperature was 105, the pulse 120, and the respirations 38. There was stiff neck, mild opisthotonos, and slight external strabismus; the right pupil was more widely dilated than the left, and both pupils reacted to light. At intervals there was a twitching of the right side of the face. Pressure over the right ear caused moaning and marked twitching of that side of the face. Both ear drums were normal in appearance. The teeth were in good condition. The scar of the old alveolar abscess was seen, but there was no evidence of active infection. The tonsils were moderately enlarged and red. The superficial lymphatics, cervical, axillary, epitrochlear and inguinal, were all slightly enlarged. The systolic blood pressure was 135, and the diastolic, 75 mm. The upper margin of the liver dulness in the right nipple line was at the fifth intercostal space; the lower border was palpable 6 cm. below the costal margin in the same line. The spleen was palpable 6 cm. below the level of the umbilicus in the left nipple line. It also extended 4 cm. to the right of the midline of the abdomen. A notch was made out at the level of the umbilicus. There was general rigidity of the extremities, more marked in the upper extremities. Kernig's sign was positive. The knee jerk was sluggishly active on the left, and absent on the right. On admission the plantar reflexes were hyperactive; on the following day, Babinski's reflex was positive; on the third and fourth days, all plantar reflexes were absent. The blood count revealed: 3,080,000 red blood cells; 720,000 white blood cells; hemoglobin, 40 per cent. In the stained blood smear there were a number of large mononuclear cells, the size of a myelocyte, with a nucleus which almost completely filled the cell. This was also found in a lymphocyte which could not be accurately classified. The differential count on admission was: myelocytes, 66 per cent.; myeloblasts, 6 per cent.; polymorphonuclear neutrophils, 16 per cent.; large mononuclears, 10 per cent.; eosinophils, 2 per cent., and normoblasts, 6.

Diagnosis.—A diagnosis was made of leukemia with hemorrhage into the central nervous system.

Treatment and Results.—Spinal puncture on four occasions revealed a yellowish pink fluid under increased pressure. Smears and cultures disclosed no organisms. The Wassermann and tuberculosis complement fixation tests were negative. Blood cultures were negative. A catheterized specimen of urine showed albumin and a large number of hyaline and finely granular casts.

For four days the rectal temperature ranged from 103 to 105.6. On the last two days there was involuntary urination and defecation. Several times a cool tap water enema was returned blood stained.

Necropsy Findings.—The patient died on the fifth day after admission. Necropsy was performed four hours after death by Dr. Sherry, city pathologist. No evidence of an inflammatory condition anywhere in the central nervous system was found. There was a very marked engorgement of the vessels of the meninges and an acute edema of the brain and cord. No gross point of hemorrhage was found. The omentum, mesentery, and intestinal serosa showed many minute hemorrhages. The intestinal mucosa showed diffusely scattered minute hemorrhages. There was a small amount of free blood in the lumen.

The chambers of the heart were filled with the characteristic greenish yellow clots. Microscopically the heart showed great engorgement of the vessels and marked mononuclear infiltration between the muscle columns. This engorgement of the vessels and mononuclear infiltration were seen in the liver, spleen, ovary, pancreas, heart, kidney, cerebellum, spinal cord, coverings, lung, lymph glands and intestine. The capsule of the liver was thickened, and directly beneath it and almost completely separating it from the parenchyma was a layer of mononuclear cells of varying thickness.

The liver and spleen were very large. The spleen weighed over 13,000 gm. The spleen showed a number of sharply outlined yellowish, lymphoid tumors giving the appearance of anemic infarcts.

There was general hyperplasia of lymphoid tissue with notable enlargement of the mesenteric lymph glands and of Peyer's patches.

COMMENT

Although the history of onset and the clinical picture presented by this case would lead us to suspect strongly a meningitis, it is evident that the whole picture was produced by the leukemia.

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

MILK AS A VEHICLE FOR CASTOR OIL

LOUIE C. BOYD, Williamsport, Pa., writes: "I was much interested in extracts from an article originally published in THE JOURNAL on giving castor oil. I want to object emphatically to the giving of medicine in food and especially in milk. Milk is too valuable a food for long usage (in tuberculosis, for instance) to have the taste for it changed to utter disgust, with inability to take it with any relish because some medicine was given temporarily in milk. In the matter of castor oil, I suggest the following ways: 1. Hold the nose and swallow the dose. 2. Hold a piece of ice in the mouth for a time and then proceed as under 1. 3. Put diluted lemon juice in a glass; rub the rind on the edge of the glass; pour in oil and a small amount of diluted juice on top. If desired, a pinch of sodium bicarbonate can be dropped in, which will make it froth. 4. Put oil in the froth of soda pop."

COMMENT.—The objection to the use of castor oil in milk or in any other food is well taken; and such objection was voiced in the article on castor oil referred to. The fact remains, however, that there are some patients who prefer to take it in milk, and that the odor of pure unspoiled castor oil is so faint as to be unobjectionable. All the methods suggested by the writer are useful. Especially interesting and, no doubt effective, is the use of lemon juice, as detailed under 3; though, unless the diluted lemon juice is sweetened, children would refuse to take the dose.

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SATURDAY, FEBRUARY 28, 1920

SOME FACTORS IN BONE REPAIR

In the process of the bone repair which follows fracture and other injury of the osseous system, there is frequently considerable debris to be eliminated, such as blood clots, injured bone fragments and other damaged tissue. In addition to this necessity in the early stages of the reparative process, at a subsequent stage the preliminary or primitive new structure must in part be removed to give place to true bone. The excess of the provisional callus which is organized in connection with a bone injury as a rule gradually disappears, so that, as in the course of bone growth, bone resorption is likewise an active process in the later stages of bone repair. Osteoblasts are concerned first of all in the formation of primary bone from calcified cartilage. Until quite recently, it has been assumed that the so-called osteoclasts, which function in the formation of the large central marrow cavities of bones and in the metamorphosis resulting in the permanent bone, are concerned with the absorption and clearing away of cartilage in bone growth. They have been looked on as the scavengers of the developing osseous structures.

The investigations of Shipley and Macklin¹ at the Johns Hopkins University have thrown doubt on the assumed phagocytic action of the long recognized osteoblasts. By methods of vital staining with dyes belonging to the benzidin series of colors, it has become possible to identify throughout the body the special phagocytic cells which store the dyestuffs in the form of very minute dye granules, just as the mobile phagocytes of the blood engulf bacteria and other particles. Of late the term macrophage, first employed by Metchnikoff, has been applied to the entire group of phagocytic cells which are characterized by a uniform functional response to these colloidal dyestuffs. As a writer has recently remarked, the term macrophage is a physiologic designation, including within its compass very diverse morphologic elements. This similarity in staining reaction is but an expression of the phagocytic potentiality which these cells hold in com-

mon, and which manifests itself during their everyday existence in the ingestion and storage of certain elements of the surrounding tissue fluids. Some time ago it was pointed out in THE JOURNAL that the resorption of disintegrating calcified tissue in the secondary stages of osseous development, if judged by the results with vital staining achieved by Shipley and Macklin,¹ must be attributed not to the osteoclasts but to fixed macrophages represented by the ordinary reticulo-endothelial cells of the marrow reticulum.

It has now been demonstrated by Macklin² of the University of Pittsburgh that the same agencies function in the healing of bone wounds. Macrophages, which stain brilliantly with trypan blue, soon congregate at the site of the injury, where they increase in numbers and in size, and demonstrate increased phagocytic power. They assist in dealing with the tissue waste resulting from the trauma. These phagocytes are developed principally from the lymphocyte-like cells of the blood stream, but some are derived from local mononuclear cells with phagocytic potentialities. Most of them ultimately disintegrate in situ. Furthermore, according to Macklin, during the structural changes attending the transformation of provisional into permanent callus, trypanophil macrophages develop in the callus spaces from the reticulum cells and become numerous, large and phagocytic. They function in the removal of redundant bony spicules, their particular rôle being the absorption of the waste products formed by the breaking down of the matrix. When cartilage is present in the callus they also play a part in its removal. Their action here is thus the same as that of the macrophages of developing bone.

REGIONAL HEALTH SURVEYS

Napier Burnett,³ a British expert on public health, has recently given an interesting account of a regional survey of the hospital situation in a northern district in England. The success of the concentration and coordination of effort in protecting the health of troops which was exercised during the war seems to have opened the eyes of the British government to the possibilities of similar coordinated action during times of peace. Among the results is the formation of a ministry of health in Great Britain. Burnett's article indicates that the preliminary information on which action must be based is being gathered under this ministry.

The survey which Burnett describes covered an area of 4,000 square miles containing a population of two and a half million people. Data were collected covering the ratable value of property; the number and distribution of physicians and midwives in each locality; the various types of hospitals, dispensaries and convalescent homes; the birth rate and the infant

1. Shipley, P. G., and Macklin, C. C.: The Demonstration of Centers of Osteoblastic Activity by Use of Vital Dyes of the Benzidine Series, *Anat. Record* 10: 597, 1916; Some Features of Osteogenesis in the Light of Vital Staining, *Am. J. Physiol.* 42: 117, 1916.

2. Macklin, C. C.: The Development and Function of Macrophages in the Repair of Experimental Bone-Wounds in Rats Vitrally Stained with Trypan Blue, Publication 272, Carnegie Institution of Washington, p. 1.

3. Burnett, Napier: *Edinburgh M. J.* 23: 387 (Dec.) 1919.

mortality rate; the population living in one, two and three room houses, and the transport facilities by rail and road. As would be expected, certain facts were brought out which, in spite of difference in medical organization in the two countries, are not without interest to American physicians. There were clear indications that the number of beds available in general hospitals was entirely inadequate, there being only 0.76 bed per thousand of the population. This was offset to some extent by the fact that there were as many beds available for infectious diseases as there were general hospital beds, and that, as contrasted with American conditions, there were a larger number of convalescent homes than exist in this country. The report also brought out that there was a lack of accommodations for medical as contrasted with surgical cases, that the distribution of the hospitals throughout the district was very unsatisfactory, and that the hospitals were having difficulties on account of lack of funds, just as they are in this country.

The report is of particular interest because certain aspects of the hospital question are at present under scrutiny here. One of the main points emphasized is the unsatisfactoriness of allowing the health machinery of a country to develop in a haphazard fashion. There can be no question that if the hospital development of a given region should be preceded by a survey in which data are collected concerning the distribution of the population and other important factors, such as those mentioned, the locations of hospitals would frequently be quite different from what they are. Now that an extensive hospital inspection is actually imminent in the United States, would it not be possible to combine with it the collection of information bearing on the health conditions of the population served by each hospital? It would seem that the situation presents a great opportunity for public service.

COMPENSATORY RESPONSES TO THE OXYGEN WANT AT HIGH ALTITUDES

Life at high altitudes is liable to be attended with symptoms of illness, whether the sojourn in the regions of lowered barometric pressure be on a mountain, in a balloon, or in an aeroplane. The essential cause of altitude sickness has been demonstrated repeatedly to be a lack of oxygen. Whatever the method by which the oxygen supply of the body is reduced, there will occur adaptive reactions having the evident function of furnishing in some way the indispensable element that is needed by the active tissues. All of the latter become sensitive to the oxygen want, but the responses are undoubtedly initiated in the central nervous system. They are definitely stimulated at first. In the effort to compensate for the reduction of the oxygen supply the blood, the respiration and the circulation may become involved. Thus, as has been indicated repeatedly by THE JOURNAL, there may be an increase in the amount

of hemoglobin in the body, and associated with this a redistribution of the red corpuscles whereby a reserve supply is thrown into the general circulation; deeper breathing may bring about increased ventilation of the lungs; an increase in the rate of blood flow may occur. Each of these responses tends to insure a more adequate supply of oxygen to the tissues.¹

In the acclimatization to oxygen want which follows the ascent of a mountain, the respiratory response is almost invariably the first to appear, beginning during the trip or almost immediately after the summit is reached. The increment in the number of erythrocytes comes more slowly and gradually. The alterations in the pulse rate may also be somewhat gradual. These effects, brought about by protracted residence at high altitudes, in turn disappear only gradually when the person returns to a lower barometric level.

As was recently pointed out² in relation to the more sudden shifts in altitude corresponding to the rapid flight of the modern aeroplane, similar adaptive responses are undergone by the aviator; but in contrast with the experiences of the alpinist, they develop much more quickly. Gregg, Lutz and Schneider,³ who have been engaged in extensive researches on these questions in the Medical Research Laboratory of the Air Service at Mineola, N. Y., have found that following the more sudden changes in atmospheric pressure and oxygen tension such as may occur in aviation, there is no such uniformity in the relative response of the different adaptive mechanisms as is found after the slower ascents on mountains. In other words, the relative values of the different compensatory reactions to low oxygen tension may differ as does the sensitiveness of different persons. The aeronautic physiologists report that the majority of men appear to make a well-balanced use of the three mechanisms for supplying oxygen. The ventilation of the lungs, the rate of blood flow, and the percentage of red corpuscles and hemoglobin are definitely increased. Some meet the new condition largely by increased respiration, and others depend almost entirely on an increased blood flow. In many individuals, during the early period of exposure to a decreasing oxygen, the burden of compensation is borne wholly by the circulatory and respiratory mechanisms; but later the blood changes relieve one or both of these mechanisms from a part of the burden. There is evidently an interdependence and interplay of the adaptive mechanisms. The same person may compensate differently in each of a series of emergencies associated with lowered oxygen.

In another respect also the compensatory reactions to a rapid reduction in oxygen differ from experiences in mountaineering. They disappear quickly when the

1. An excellent review of the evidence for these adaptive changes at high altitudes will be found in the Manual of the Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, D. C., 1918.

2. Low Barometric Pressure and Changes in Circulation, editorial, J. A. M. A. 74: 250 (Jan. 24) 1920.

3. Gregg, H. W.; Lutz, B. R., and Schneider, E. C.: Compensatory Reactions to Low Oxygen, *Am. J. Physiol.* 50: 302 (Dec.) 1919.

oxygen tension is restored. There is little lag in the changes induced. Schneider and his co-workers³ conclude that the differences in the responses observed under these two different conditions of exposure to low oxygen depend, no doubt, on the suddenness with which the low barometric pressure and low oxygen percentage have been decreased, and on the extent to which they were lowered. In very slow and moderate changes, it is possible that no response may be evoked. They add that possibly the respiratory center, by virtue of greater sensitiveness, may react so much to the stimulus that the increase in respiration for a time cares adequately for the oxygen requirement of the body. In the more rapid decrease in oxygen tension, the respiratory and cardiac centers and very likely the vasomotor centers are stimulated at higher oxygen tensions and at about the same time. Consequently, under some conditions these two mechanisms serve almost equally to care for the oxygen need of the body. Evidently the problems of life at high altitudes must be considered somewhat separately for the various modes of ascent and sojourn in the upper reaches of the air. The slow progress of the Duke of the Abruzzi to a height of 24,580 feet in the Himalayas, and the more rapid rise of Glaisher to an altitude of 30,000 feet in a balloon, have already been far surpassed by the swift record altitude ascents of the modern aeroplane, to which neither sea nor land any longer bars the way.

THREE EARLY EPIDEMICS OF INFLUENZA

The history of epidemic influenza is a record of devastation and distress. The earliest record of influenza in America was made by William Hubbard:

In the year 1647 an epidemical sickness passed through the whole country of New England both among Indians, English, French and Dutch. It began with a cold and in many was accompanied with a light fever. Such as bled, or used cooling drinks, generally died; such as made use of cordials, and more strengthening, comfortable things, for the most part recovered.

This is cited by Guy Hinsdale, whose contribution to the Osler memorial volume is a record of the epidemics of influenza in 1647, 1789 and 1807, as recorded by Noah Webster, Benjamin Rush and Daniel Drake. Noah Webster, in addition to publishing his famous dictionary, was also the author of a "Brief History of Epidemic and Pestilential Diseases." In this book, published in 1799, Webster described forty-four instances of influenza, dating in Europe from 1174 and in America from 1647. All of these epidemics are associated with earthquakes, volcanic eruptions, comets, droughts and similar disturbances of nature. Thus Webster notes under the year 1647, "First catarrh mentioned in American annals. The same year with violent earthquakes in South America, a comet."

The epidemic of 1789 was described by Benjamin Rush, who, as Dr. Hinsdale says, had the unusual faculty and patience to set down the minute details

of cases as they came under observation. Dr. Rush's account, which is reproduced verbatim, reveals a remarkable parallelism between the epidemic of 1789-1790 and that of 1918-1919. It includes a classic description of the sneezing, hoarseness and sore throat; the sense of weariness, chills and fever, pains in the head and infection in the frontal sinus. "Many complained of a great itching in the eyelids. In some the eyelids were swelled. In others, a copious effusion of water took place from the eyes." Rush also describes mastoiditis, distressing cough and the final pneumonia, and the occurrence of secondary nervous and mental disturbances consequent on the disease.

Twenty-seven years after the epidemic described by Benjamin Rush, there occurred another epidemic which was described by Daniel Drake, who was acting as an army surgeon to two regiments of militia in camps when the influenza swept down from the "East to the frontier post in the Ohio Valley where he was stationed." He describes the way in which the disease first attacked the men in his camp, secondarily, the towns surrounding, and finally the scattered inhabitants of the country districts. "I need not give the history of any other prevalence," he says, "as this illustrates the most constant of the laws which govern influenza: first, its progressive extension from east to west; and second, its independence of all sensible conditions of atmosphere; third, its first outbreak in bodies of men, and compact settlements." Drake closes his account by mentioning the occurrence of purulent pleural effusions as the most serious sequelae.

In connection with these reports, we may point out that, allowing for the lack of knowledge of bacteriology and modern pathology, these early observers noted practically all of the important facts concerning this disease. Their reports are vital evidence of the importance of close, systematic observation in the practice of medicine.

Current Comment

ANOTHER WATER SUPPLY "ACCIDENT"

A recent report¹ of the typhoid outbreak at Lansing, Mich., in March, 1919, illustrates once more the necessity of caring for the surroundings of public water supplies from deep wells. The Lansing outbreak was apparently caused by leakage of sewage-contaminated ground water into the good water in the wells. It is stated that no thorough and regular investigations had been made of the lead joints between suction pipes and casings, and that the piping was under water much of the time. In March of last year, heavy rains caused the Grand River to rise eight feet, the pressure from this source forcing concentrated sewage into the sandy soil around the wells. An extensive outbreak of intestinal disturbance followed almost immediately, 3,000 cases of so-called water-borne dysentery being caused. Following this, eighty-two cases

1. Engineering News Record 84:92, 1919.

of typhoid developed, resulting in eleven deaths. This "accident," due to neglect of the surroundings of a good artesian water, is almost exactly similar to the extensive outbreak at Rockford,² eight years ago. Information about the cause of the Rockford outbreak and similar water-borne epidemics has been available for a number of years in the various technical journals dealing with water supply. It seems strange that such disasters can still occur, since every responsible engineer must be well aware of the necessity for safeguarding the casings and suction wells wherever a deep well supply is used as a drinking water source.

THE 1920 INFLUENZA

The outbreak of influenza in the United States which began about the middle of January has now progressed far enough for its main characteristics to be plainly seen. It is noteworthy that the death rates from influenza and pneumonia in the large cities were below the usual average all over the country from May, 1919, to Jan. 1, 1920. The first marked change seems to have occurred almost simultaneously in Kansas City and in Chicago, where the influenza-pneumonia rates rose sharply in the week ending January 17, although in Chicago an excess over the average was not reached till some days later. The maximum mortality in Chicago occurred in the week ending January 31, but in Kansas City the mortality reached its height a week later. New York, Washington, San Francisco, Milwaukee and St. Paul all showed an increase in the week ending January 24, and many other cities were added to the list in the following two weeks. The Census Bureau report for the week ending February 14 showed that thirty-two out of the thirty-six large cities reporting had a largely increased death rate from influenza and pneumonia as compared with the February weekly average in 1917. The same report states that the number of death claims per thousand policies in force (42, 300 and 241) in industrial insurance had increased in the annual rate from 10.3 for the week ending January 24, 10.9 for the week of January 31 and 13.0 for the week of February 7 to 14.1 for the week of February 14. The relative severity of the 1920 influenza is difficult to estimate correctly at this time. If it is possible to repeat in several well chosen localities the exact enumeration of morbidity and mortality secured in a few places by the U. S. Public Health Service in 1918, there will be better opportunity for a judgment on this point. It is worth noting, however, that in several cities, Milwaukee, Minneapolis and Kansas City, for example, the total death rate was considerably higher in the week ending Feb. 7, 1920, than it was at any time during the 1918 epidemic. In Chicago the death rate, while not as high as in October, 1918, rose to a point far above that reached during the 1889-1890 influenza outbreak. Although the total mortality in Chicago for the first half of January was considerably lower than the mortality for the average of the corresponding weeks of 1913-1917, the influenza in the last two weeks of the month brought the total January mortality to 5,149,

much the highest monthly mortality in the history of the city with the single exception of October, 1918, when influenza raged through the whole month. In Detroit, likewise, the epidemic has been severe. The weekly health reviews by the commissioner of health state that by the twentieth day of the epidemic there had been 1,161 reported deaths from influenza and pneumonia, as compared with 836 for the corresponding period in the 1918 epidemic. Up to the present writing the chief prevalence of the disease has been in the Middle West. According to the reports of the U. S. Public Health Service made by state health departments, Illinois has had the largest number of cases. Kansas, Wisconsin, Minnesota and California have also reported several thousand cases each. In the East, Connecticut and New Jersey had reported by January 31 a relatively large proportion of cases. It seems reasonable to suppose that most communities, at all events the larger cities and towns that have not already experienced an influenza outbreak in 1920, will have some recurrence of the disease. The impression seems to be in general that the disease is milder in its symptomatology and that the rate of incidence is considerably lower.

PHARMACY BY ACT OF CONGRESS

The school of political thought that holds to the *laissez faire* doctrine sometimes described as Manchesterism has always pooh-poohed the idea that it is possible to make men moral by statute. Should the present national experiment in prohibition be successful it will give the Manchester doctrine a body blow and do much to make "morality by act of Congress" an established fact. This same experiment is, apparently, bringing about even greater wonders. For, insolvable problems—as we have been led to believe—in the field of pharmacy have been solved within the short time that the Eighteenth Amendment to the Constitution of the United States has been in being. For years the gentlemen who have waxed rich and socially and politically powerful from the sale of those "patent medicines" whose most potent and powerful ingredient was alcohol have assured us with all the earnestness at their command that the alcohol in their nostrums was really but a regrettable incident in the manufacture. Alcohol has always been used in such cases, we were assured, for solvent, preservative or extraction purposes and occasionally "to prevent freezing"! Consider the case of a "patent medicine" more or less familiar to the readers of THE JOURNAL—"Wine of Cardui." This woman's tonic which, before the days of the Food and Drugs Act, was "a Certain Cure" and "Nature's Great Emmenagogue" later admitted (as per the law's requirements) the presence of alcohol to the extent of 20 per cent. Repeated and exhaustive experiments by some of the best chemists and pharmacologists in the country conclusively demonstrated that the alcohol was the most powerful and active drug in it. THE JOURNAL's first extended article on this product brought the claim from the manufacturers that no more alcohol was used than was "needed as a solvent and preservative" and the further declaration that they had "employed leading chemists who

2. Jordan, E. O.: The Rockford (Ill.) Typhoid Epidemic, J. Infect. Dis. 11: 21, 1912.

have sought widely for another preservative, but without success." In the court action that followed THE JOURNAL's exposés the Wine of Cardui concern again emphasized its inability to diminish the amount of the alcohol. As the company's attorney said in his opening statement, Wine of Cardui had been submitted to one of the great chemists in the United States "for the purpose of ascertaining whether or not any other solvent or preservative could be used rather than alcohol." This great chemist "found that 20 per cent. of alcohol was the exact amount that would answer the purposes and that anything substantially beneath that amount would make the medicine spoil and would no longer act either as a solvent or as a preservative." "Wine of Cardui" continued to contain 20 per cent. of alcohol—the irreducible minimum, according to the manufacturers; an unnecessarily large amount, according to the medical profession. Then came national prohibition. Today Wine of Cardui contains 10 per cent. alcohol and its preservative powers have been fortified by the addition of benzoates. Verily, the wonders of science are as nothing to the marvels of legislation!

TISSUE CONSERVATION THROUGH THE ACTION OF QUININ

While there are numerous drugs and chemical substances that stimulate metabolism and lead to a breakdown of tissue and a corresponding waste of body material,¹ it is not easy to cite compounds that affect the organism in the direction of tissue conservation. One of the latter, however, is quinin. It has long been known that quantities of the drug too small to have marked pharmacodynamic effects may decrease the disintegration of nitrogenous compounds in the body. The output of urea is diminished after administration of the alkaloid to persons on a constant diet, without any impairment of absorption from the alimentary tract. It has even been suggested that the antipyretic action of quinin is in essence due to the lessening of metabolism and consequent diminution in the amount of heat liberated in the body. Whether or not the fall of temperature often induced by the drug is due to lessened heat production is not positively determined. Hence every evidence bearing on the effects of quinin is still of importance. When a bird produces eggs, it separates from itself a considerable amount of protein for the formation of the egg white and egg yolk. At the Station for Experimental Evolution at Cold Spring Harbor, N. Y., Riddle and his associates² have apparently demonstrated that the amount of albuminous substance expended by the body in egg production is decreased under the influence of quinin. In their experiments with it on ring-doves, less than the normal content of nitrogenous compounds was released by the albumin-secreting gland of the oviduct during egg production, thus furnishing an added illustration of the protein-conserving effect of the alkaloid, which is unique also in other ways.

1. Illustrations are given by Higgins, H. L., and Means, J. H.: *J. Pharmacol. & Exper. Therap.* 7:1, 1915.

2. Riddle, Oscar, and Anderson, C. E.: *Am. J. Physiol.* 47:92 (Sept.) 1918. Behre, E. H., and Riddle, Oscar: *The Effect of Quinine on the Nitrogen Content of the Egg Albumen of Ring-Doves*, *ibid.* 50:364 (Dec.) 1919.

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THE NEW ORLEANS SESSION

The Scientific Exhibit

The Scientific Exhibit at the New Orleans session will be located on the third floor of the Hutchinson Memorial Building, the Medical Department of Tulane University. Ample space has been provided for exhibits in the large laboratories, while the halls afford abundant wall space for charts, diagrams, photographs and placards. The amphitheater on this floor is equipped with projection apparatus, screens, etc., and will be used for the demonstration of roentgenograms, lantern slides and moving picture films suitable for the Scientific Exhibit. If sufficient material is offered, a continuous program will be arranged for the four days of the session. Applications for space in the Scientific Exhibit or for assignment on the program of the moving picture exhibit should be sent at once to the Director of the Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, stating the character of the exhibit, the amount of space or time required, and the name of the individual or institution wishing to make the exhibit. As space will be assigned shortly after March 1, applications should be made at once.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

State Society Meeting.—The Medical Society of the State of California will meet, May 11, 12 and 13, at Santa Barbara instead of at Delmonte, as at first planned. Headquarters will be at the Hotel Ambassador.

Physician Arrested.—Dr. Amos J. Landis of Chico has been arrested on a charge of violating the state drug laws by the illegal sale of narcotics.—A. F. Francis of Oroville was arrested on the charge that he is not a physician and is practicing without a license.

Personal.—Dr. James H. Barr, Marysville, health officer of Yuba County, and Dr. A. L. Miller, health officer of Yuba City, have been appointed assistant collaborating epidemiologists by the state board of health.—Dr. Walter M. Dickie, Los Angeles, has been appointed director of the bureau of social hygiene of the state board of health.

Illegal Practitioner Charged with Manslaughter.—Mrs. Gertrude Steele, a naturopathic physician of Venice, is charged with manslaughter and with practicing outside the limits of her certificate. She was arrested following the death of her son-in-law, George A. Blaha of Venice, who was treated by Mrs. Steele with a freckle lotion which is said to have caused his death.

Bureau of Child Hygiene.—The bureau of child hygiene of the state board of health became an entity following the passage of a law at the last legislature. Dr. Ethel M. Watters, San Francisco, who formerly had charge of the juvenile court children in San Francisco and for two years was sanitarian of the social hygiene bureau of the state board of health, was appointed director.

Diploma Lost.—Early in January, 1920, a diploma issued to Dr. William Hammond Worley by the Hahnemann Medical College and Hospital, Chicago, April 26, 1900, was reported to have been lost by the Railway Express Company in Los Angeles. Officers of all state licensing boards are requested to be on the lookout for such a diploma, since it may have been stolen.

Sun Cult Leader Arrested.—Ottoman Zar-Adusht Hanish, self-styled "little master" of the Mazdaznan cult of sun worshipers, Los Angeles, has been arrested by the Board of Medical Examiners on charges of grave offenses against

minor children. In 1913, Hanish was convicted in the federal district court of sending indecent matter contained in his cult book, "The Inner Circle," through the mails, and was sentenced to six months in jail. April 25, 1918, Hanish was charged with practicing medicine without a license, at which time he vanished.

League for Conservation of Public Health.—The league will survey all the hospitals in the state and will soon promote a state conference of hospitals to discuss problems which will be brought up as a result of the survey. Only those hospitals, whether large or small, which have been adhering to a high standard of service, will be included in membership. The third annual meeting of the league was held in San Francisco, Dec. 29, 1919, and the following officers were elected: president, Dr. Dudley A. Smith, Oakland, and vice president, Dr. Granville McGowan, Los Angeles.

COLORADO

Social Service at University.—The Association of Collegiate Alumnae has taken charge of the medical social service of the University of Colorado dispensary and clinic, Denver, has organized a corps of volunteers for such service, and has placed in charge of the social service, Miss Madeline C. Ridgeway, formerly of Chicago.

Influenza.—The University of Colorado, Denver, which was closed for two weeks on account of an epidemic of influenza, reopened February 16.—The *Denver Post* announces that it will pay \$25,000 to the physician finding a cure for influenza, the money to be paid after the cure has been approved by the Rockefeller Institute for Medical Research and Johns Hopkins University.

Tuberculous Persons Should Not Leave Home.—The Denver Anti-Tuberculosis Society has issued a leaflet entitled "Why Tuberculous Persons Without Funds Should Not Leave Home." This leaflet gives a consensus of opinion of the tuberculosis workers of Denver in regard to sending indigent tuberculous sufferers West. It is estimated that several hundred tuberculous persons without funds come to Denver every year and arrive almost penniless and without provision for their needs. Since Colorado has no state sanatorium and Denver no municipal sanatorium, the care of such persons is limited to a few free private sanatoriums which are continuously overtaxed. The society urges that states throughout the country plan definite programs to retain their indigent tuberculous patients, giving them effective treatment in state sanatoriums or in their own homes.

ILLINOIS

Sanatorium Changes Hands.—The Mennonite Sanitarium Association has purchased the Kelso Sanitarium property, Bloomington, and will conduct its hospital operations on an enlarged plan.

More Money for Speedway Hospital.—On February 20, the United States Senate adopted an amendment to the urgent deficiency bill adding \$500,000 to the limit of cost of the Speedway Hospital.

Personal.—Dr. William F. Carroll, New Holland, who has been seriously ill with influenza has recovered.—In the case of Dr. Pierre J. Fullerton, Dupon, against St. Clair County in which he sought to collect \$350 alleged to be due him for treating indigent smallpox patients, the jury returned a verdict in favor of the county on the ground that Dr. Fullerton had not been authorized to treat the patients.

Chiropractor Arrested.—According to report, Frank D. Whittenberg, a chiropractor living at Mt. Carmel, was arrested for practicing medicine without a license. Whittenberg claims that State's Attorney Phipps of Wabash County told him to go ahead and practice without a license. Whittenberg is now reported to have not only discontinued practice but also to have sold his office fixtures and left the state.

Forged Prescriptions for Whisky.—A recent investigation by the Illinois Department of Registration and Education shows that persons in Chicago are writing prescriptions for whisky on regular prescription blanks and forging the signature of Dr. John W. Sarpalius, a licensed physician in Illinois. Dr. Sarpalius left Illinois some months ago and now resides in Alden Station, Pennsylvania. On leaving Chicago, he left behind a number of prescription blanks with his name and address printed thereon. These blanks were taken from his Chicago office and are now being used extensively for whisky prescriptions. An inspector picked up thirty-four in two drug stores in Chicago. Each called for

a pint of whisky for use "as directed." The department has no jurisdiction over the writing of whisky prescriptions, but they were turned over to Major Dalrymple in Chicago for investigation.

CHICAGO

Personal.—Dr. Ludvig Hektoen has been elected an honorary member of the Pathological Society of Philadelphia.

Midwife Fined.—Mrs. Anite Salvino, a midwife, was fined \$25, February 19, for failure to apply silver nitrate to the eyes of a baby in her care.

Municipal Sanatorium.—The January issue of the *Bulletin of the City of Chicago Municipal Tuberculosis Sanatorium* contains a detailed description of the vocational school for the tuberculous, by Dr. John Dill Robertson, profusely illustrated.

Institute of Medicine Meeting.—A meeting of the Institute of Medicine of Chicago will be held March 5, at the City Club, 315 Plymouth Court at 8 p. m. Prof. James R. Angell of the National Research Council will speak on "The Organization of Research in a Democracy."

Reception and Dinner to Admiral Braisted.—Surg.-Gen. William C. Braisted of the United States Navy, President-Elect of the American Medical Association, will read a paper before the Chicago Medical Society at its meeting, Wednesday evening, March 3. A reception and dinner at the Palmer House at 6 p. m. will be tendered him previous to the meeting to which all members of the Association are cordially invited.

Fraternity Dinner.—The Alpha Omega Alpha Honorary Medical Fraternity announces that the annual dinner of the three Chicago chapters located respectively at the University of Illinois, University of Chicago, and Northwestern University, will be held March 1, at the Congress Hotel, at 6:30 p. m. Among the speakers will be Dean Irving S. Cutter, Omaha, of the University of Nebraska, Dean John L. Heffron, Syracuse, of Syracuse University and Dr. William W. Root, Slaterville Springs, N. Y.

Druggist Arrested for Practicing Medicine.—Joseph P. Baltrenas who owns a drug store at 1705 South Halsted Street, is reported to have been arrested recently for practicing medicine without a license and was fined \$200 and costs. Baltrenas had in his possession a license as a physician issued by the state board of health in 1916, but the name of the physician had been erased and that of Baltrenas substituted. An inspector of the Department of Registration and Education recognized that it was fraudulent. It later developed that the license had been stolen from the office of Dr. Ralph Waldo Petersen. Baltrenas claimed he had paid a certain "senator" \$3,500 for the license.—Three other cases against Baltrenas will be heard in March; one for buying a license, one for aiding and abetting in the purchase or sale of a license and still another for practicing under a license fraudulently obtained. The maximum fine for each offense is \$200 or one year in jail, or both.

IOWA

New Officers.—Northwest Iowa Medical Society at its annual meeting in Sheldon elected Dr. Louis L. Corcoran president and Dr. Jay M. Crowley secretary, both of Rock Rapids.—Hardin County Medical Society at its annual meeting at Eldora elected Dr. J. Willard Caldwell, Jr., Steamboat Rock, president; Dr. William H. VanTiger, Eldora, vice president; Dr. William E. Marsh, Eldora, secretary, and Dr. Clarence M. Wray, Iowa Falls, treasurer.

KANSAS

Personal.—Dr. Louis B. Gloyne, who has been serving as health director of Kansas City, has been made city physician.

New Officers.—Brown County Medical Society held its annual meeting in Horton, January 6, and elected Dr. Roscoe T. Nichols, Hiawatha, president; Dr. James S. Rushton, Morrill, vice president, and Dr. James M. Robinson, Hiawatha, secretary-treasurer.

Venereal Disease Activities.—During the period from July 1, 1918, to Dec. 30, 1919, there were reported to the division of venereal disease of the state board of health 3,311 cases of gonorrhea, 1,405 cases of syphilis and fifty-four cases of chancroid. Treatment has been provided through clinics located at Wichita, El Dorado, Topeka, Lawrence, and Rosedale, and a clinic is expected to be in operation this month at Kansas City. At these clinics 537 cases of gonorrhea, 745 cases of syphilis and twenty-four

cases of chancroid have been treated. In connection with the University Medical School at Rosedale, a public health laboratory has been maintained which has furnished an average of 500 Wassermann examinations a month since its establishment, Jan. 1, 1919. At the quarantine camp established at Lansing, twenty-one men and 340 women were detained in 1918, 157 men and 258 women in 1919.

KENTUCKY

Libraries Consolidated.—The libraries of the medical department of the University of Louisville and of the Jefferson County Medical Society have been consolidated and will be housed at the medical college.

Eye and Ear Men Elect.—The Louisville Eye and Ear Society at its annual meeting, January 8, elected Dr. Claude T. Wolfe, Louisville, president; Dr. Albert L. Bass, Louisville, vice president, and Dr. Walter Dean, Louisville, secretary-treasurer.

Contract Let for Government Hospital.—The Dawson Springs Construction Company has received the contract for the construction of three main buildings of the \$1,500,000 governmental hospital at Dawson Springs. The hospital will be used to take care of discharged soldiers, sailors and marines. This contract is for the erection of a hospital building, an administration building and a nurses' home and the combined cost will be \$680,666.

Personal.—Col. Dunning S. Wilson has been discharged from the Medical Corps, U. S. Army, and has returned to Louisville.—Dr. Randolph Dade, Jr., has succeeded Dr. John W. Harned, resigned, as health officer of Hopkinsville.—Dr. Daniel V. Bentley, Whitesburg, is reported to be critically ill with cerebrospinal meningitis.—Dr. Lester A. Crutcher, Louisville, has resigned to accept a position with the Kentucky State Board of Health, and has been succeeded by Dr. Louis A. Mehler, Louisville.—The Jefferson County court jury has refused to indict Dr. Christopher G. Schott, Louisville, who was charged with murdering his office assistant.

Nutrition Survey.—The big gray automobile known as the Child Welfare Special which the Children's Bureau of the United States Department of Labor is using to bring the welfare message to babies in villages and on farms, has been cooperating in the nutrition survey in one of the rural sections of Kentucky. The county selected was in the mountain district, 250 cases were studied, and it is hoped that the examinations will reveal the causes responsible for the malnutrition prevalent in this area. The information was obtained by a house-to-house canvass and the examinations were made by the staff of the Child Welfare Exhibit in an automobile truck fitted as a model well-baby clinic with a government physician and nurse in charge. The car is parked in a central location, usually near a court house, town hall, lodge hall or woman's club. One family at a time is received in the car, the health history of the family is secured, each child is examined, weighed, and measured, and advice is given to the mother in hygiene matters.

LOUISIANA

Ground Broken for Hospital.—Construction work on the new Presbyterian Hospital, New Orleans, has been begun. The new building will be three stories in height, but eventually other stories, up to ten, will be added.

Personal.—Dr. Joseph G. Stullb, New Orleans, visiting physician to the Isolation Hospital has resigned.—Dr. Mayer A. Newhauser, New Orleans, has succeeded Dr. G. C. Chandler as president of the board of health of Shreveport.

Laboratory Item.—Dr. Abraham L. Metz, city chemist, has tendered the use of his new chemical laboratory to the city of New Orleans, and it was formally dedicated to the city's use, February 1. The plant represents an outlay of \$15,000 and includes a library of 1,000 volumes.

New Officers.—At the annual meeting of the Rapides Parish Medical Society held at Alexandria, February 5, Dr. Paul K. Rand, Alexandria, was elected president and Dr. George Antony, Alexandria, secretary-treasurer.—Calcasieu Parish Medical Society at its annual meeting, Dec. 31, 1919, adopted a resolution authorizing appointment of a committee to enter into negotiations with the state board of health regarding the establishment of a public laboratory in Lake Charles. Dr. John G. Martin, Lake Charles, was elected president, Dr. Cecil R. Price, De Quincy, vice president, and Dr. Dempsey C. Iles, Lake Charles, secretary-treasurer.

MASSACHUSETTS

Personal.—Dr. Fred D. Jones, Springfield, has been appointed medical examiner (coroner) of the second Hampden, district, succeeding Dr. Edward J. Mahoney, Springfield, resigned.—Dr. Frederick R. Barnes, Jr., Fall River, has been appointed associate medical examiner (coroner) of the third Bristol district, succeeding Dr. John H. Gifford, resigned.—Dr. Llewellyn H. Rockwell has been appointed acting superintendent of the Long Island Hospital during the absence of Dr. Charles E. Donlan.—Dr. Samuel B. Woodward was reelected vice president of the Worcester Chamber of Commerce at its meeting, January 20.—Dr. William T. Sedgwick, senior professor in the Massachusetts Institute of Technology and head of the department of biology and public health, will be the first exchange professor with the universities of Cambridge and Leeds.—Dr. Oren M. Deems, Springfield, is reported to be seriously ill with pneumonia.

MICHIGAN

Personal.—Dr. Albert C. McLeod, Calumet, has just returned after five years' service in the Royal Army Medical Corps.—Dr. E. Charles Hughes, Armada, has been appointed superintendent of the Burley Hospital, Almont.

Industrial Earnings.—According to the published report made at the annual meeting of stockholders, Parke, Davis & Co. earned net profits of \$4,293,591 for 1919. The sales for the year were approximately \$25,000,000. The gross profits were \$6,604,702 and of this \$2,000,000 was reserved for excess profits and income taxes and \$194,845 for depreciation.

Venereal Disease Clinics.—Dr. Garner M. Byington, Charlotte, director of the bureau of venereal disease, announces that Battle Creek, Lansing, Kalamazoo, Jackson, Flint, Bay City, Saginaw, Detroit and Ann Arbor are operating venereal disease clinics in close cooperation with the bureau and that similar clinics will soon be established in Grand Rapids and Muskegon.

Cancer Publicity.—The entire December number of *Public Health*, the monthly news bulletin of the Michigan Department of Health, was devoted to cancer. The number was prepared in response to a belief that public sentiment must be thoroughly aroused and organized, and that scientific data on the cancer problem must be given to the public if results are to be obtained in the campaign for the eradication of cancer.

MINNESOTA

Personal.—Dr. Mabel S. Ulrich, Minneapolis, has been appointed health director of the northern division of the American Red Cross.

Decline in Mortality.—The division of public health of the board of public welfare, Minneapolis, in its last bulletin gives a résumé of the decline in the mortality from certain diseases since 1890. The deaths from typhoid fever per hundred thousand of population between 1891 and 1900 numbered 49; and in 1919, about 4; the deaths from diphtheria per hundred thousand of population from 1890 to 1899 averaged 0.43, compared to 0.165 in 1919; the deaths from tuberculosis per thousand population from 1890 to 1899 were 1.28, and in 1919, 0.97; and the death rate of infants under 1 year, which from 1900 to 1909 was 88.2 per hundred thousand, dropped in 1919 to 66.5.

MISSISSIPPI

Influenza.—On account of the spread of influenza all of the rural schools near Purvis, the town schools, and the Lamar County Agricultural School have suspended indefinitely and all public meetings have been interdicted.—The schools, churches and other public places of Hazlehurst and Wiggins have been closed for the same reason.

Home for Feeble-minded.—The Mississippi society for mental hygiene is urging the passage of a bill calling on the legislature for an appropriation of \$200,000 with which to prepare and maintain a home for feeble-minded for the next two years. There are at present 1,317 feeble-minded persons in the state, 205 of whom are in state insane hospitals, 90 in orphanages, 10 in the industrial training school, 14 in the state institution for deaf and dumb, 345 in county jails, 214 on county poor farms and 439 in the state penitentiary.

Mental Deficiency Survey.—The report of the Mississippi Mental Hygiene Commission to the governor, January 7, after an exhaustive report on present conditions regarding mental

deficiency in the state, recommends the establishment and organization of a state colony and training school for the feeble-minded; the organization of special opportunity schools as a part of the public school system, these schools to emphasize training of the nervous system through the hands; the organization of mental clinics; at the disposition of every school, court and social agency someone specially trained in medical and social service as related to mental deficiency; the complete divorce of hospitals of the insane and the colony for the feeble-minded from partisan politics and their organization under a state psychiatrist as director, and finally a system of state registration and state supervision of all mentally defective individuals.

MISSOURI

Graduate Instruction in Pediatrics.—Washington University, St. Louis, has established a course of graduate instruction in pediatrics to begin April 5. Particulars of this course may be obtained on addressing the dean of the school.

Semicentennial Ceremonies.—Jackson County Medical Society will honor with a dinner at the City Club, Kansas City, March 4, members who have practiced medicine a half century. Five members will be thus honored: Brig-Gen. Jefferson D. Griffith, Kansas City, who graduated from New York University Medical College in 1870; Dr. John C. Rogers, Kansas City, an alumnus of Washington University Medical School, St. Louis, in 1865; Dr. John Wilson, Kansas City, a graduate of the same school in 1866; Dr. John S. Mott, Kansas City, a graduate of the University of Michigan, Ann Arbor, 1867, and Dr. Thomas R. Thornton, Lees Summit, a graduate of Washington University, St. Louis, in 1868.

Personal.—Dr. Owen P. McPherson, Kansas City, has recently received the medal of the first order of St. Sava from the Serbian Government. Dr. McPherson was assigned to the American Military Red Cross Hospital, No. 5, in Serbia and afterward established two hospitals. —Dr. Robert Vinyard, St. Louis has been appointed assistant physician to the Frisco Hospital, Springfield. —Dr. George M. Boteler, St. Joseph, has been appointed assistant health officer of St. Joseph and placed in charge of the emergency and influenza hospital. —Dr. William D. Fulkerson, Clinton, for thirteen years local surgeon of the Rock Island System, has resigned and expects to retire to a farm near Catesville. —Dr. Fayette C. Ewing, Webster Groves, has moved to Alexandria, La., and has been appointed chief of the eye, ear, nose and throat department of the U. S. Public Health Hospital at that place.

MONTANA

Western Montana Physicians Elect Officers.—At the annual meeting of the Western Montana Medical Society held in Missoula, Dr. Harry B. Farnsworth, Missoula, was elected president; Dr. John P. Ritchey, Missoula, vice president, and Dr. James D. Hobson, Missoula, secretary-treasurer.

Personal.—Dr. Roscoe C. Main, formerly of Marquette, Mich., has succeeded Dr. Louis W. Allard, resigned, as health officer of Billings and Yellowstone County. —Dr. Frank D. Pease, Missoula, has been appointed full-time health officer of Missoula County and will assume his new duties, April 1.

Public Health Hospital for Mental Diseases.—A hospital for the treatment of mental diseases is being opened at Fort Harrison, Helena, by the United States Public Health Service. Dr. Arthur S. Pendleton is the officer in charge. The hospital will not be an insane asylum but is designed to care for men who have been mentally incapacitated in war service.

NEBRASKA

Meningitis at College.—Doane College and other schools in Crete have been closed and public gatherings prohibited because of an outbreak of cerebrospinal meningitis.

New Officers.—At the annual meeting of the Dodge County Medical Association, held in Fremont, January 1, Dr. Byron B. Hauser was elected president, Dr. James C. Agee, vice president and Dr. Grant S. Reeder, secretary-treasurer, all of Fremont.

Personal.—Dr. Jerome G. Pace, Lincoln, has been appointed superintendent of the Modern Woodmen of America Sanatorium, Colorado Springs, succeeding Dr. James A. Rutledge, deceased. —Dr. Floyd C. Dean, Hastings, formerly superintendent of the sanatorium at Hastings, has been appointed superintendent of the Kansas Sanatorium, Wichita, succeeding Dr. Robert L. Stokes, resigned.

NEW JERSEY

Changes in Sanatorium Management.—Commissioner Burdette G. Lewis of the Department of Institutions and Agencies, has made the following recommendations to improve conditions at the New Jersey Sanatorium for Tuberculous Diseases, Glen Gardner: a roentgen-ray examination of every patient admitted to the institution; the purchase of strictly fresh eggs and more careful adherence to the dietaries suggested by this department and approved by the federal bureau of foods and drugs; the employment of a trained social worker; the enlargement of the institution to accommodate enough patients to reduce the per capita cost of medical, scientific and social work, and to provide home-like surroundings including sitting rooms and play rooms for children.

NEW YORK

Mental Clinic Established.—The American Red Cross and health department of Plattsburg have started a mental clinic in that city under the charge of Dr. John R. Ross, medical superintendent of the Dannemora State Hospital.

Tuberculosis Survey.—A summary of the clinics which have been held in Oneida County under the auspices of the state department of health, by the State Charities Aid Association, shows that 1,287 patients were examined, of whom 214, or 16.6 per cent., were found positive, 390, or 30 per cent., suspicious, and 683 negative.

Tuberculosis Association Bulletin.—The first issue of the *Bulletin of the New York Tuberculosis Association, Inc.*, has made its appearance. It is an eight-page periodical having for its purpose the dissemination of knowledge for the information of all those interested or engaged in the fight against tuberculosis in New York City and elsewhere. Mr. David Ryan is managing editor.

Personal.—Dr. Reeve B. Howland, Elmira, has been reappointed health officer of Elmira for a term of four years. —Dr. Frederick M. Meader, Albany, director of the division of communicable diseases in the state board of health, has been granted an indefinite leave of absence in order to accept an appointment as surgeon in the United States Public Health Service. Dr. Edward S. Godfrey, Jr., has been appointed acting director of the division in the place of Dr. Meader.

New Organization to Fight Quackery.—A national cooperative service, under the name of the Doctors Service Corps, and including physicians, surgeons and dentists, has been organized for the detection and punishment of "dead beats," and as an intelligence service to operate against frauds. The movement is endorsed by Prof. Irving Fisher of Yale, Major A. R. Crane, formerly chief dental surgeon to U. S. Army General Hospital No. 1, and Herbert D. Brown, chief of the Bureau of Efficiency, Washington, D. C.

New York City

Meeting in Memory of Sir William Osler.—A meeting in memory of Sir William Osler is scheduled to be held February 28, at 8:30 p. m., in the New York Academy of Medicine.

School Hygiene.—The bureau of public health education, department of health has instituted publication of a monthly pamphlet, *School Health News*, for the information of school teachers.

Personal.—Dr. T. Mitchell Prudden, who has been a member of the Public Health Council since its inception, was recently reappointed by Governor Smith for a term of six years. —Dr. Elbert M. Somers, Brooklyn, has been appointed deputy medical examiner of the bureau of deportation by the State Hospital Commission.

Seamen's Service Center.—The Seaman's Service Center, operating under the direction of the Surgeon-General of the United States Public Health Service in cooperation with the Red Cross and volunteer agencies, was recently established for the purpose of assisting merchant seamen entering the port of New York. The center will be conducted as a clearing house for the sick, disabled and needy sailors of the merchant fleets of the world.

OHIO

Verdict for Physician.—In the case of Ralph Meyers against Dr. Corwin T. Hill, Akron, in which the plaintiff sought to recover \$25,000 on claims that the defendant was

negligent in treating a fracture of the leg, a verdict in favor of the defendant was returned by the jury after a fifteen minute session.

County Health Commissioners.—Of the eighty-eight counties of the state, fifty have already organized under the Griswold act, and thirty-nine health commissioners have been appointed, twelve of whom are to serve full time. Twenty-five of the fifty counties have made provision for a public nurse, and thirty nurses have already been named.

Chiropractors Fined.—It is reported that Mike Klotz, a chiropractor residing at Akron, was fined \$200 and costs in the municipal court of Cleveland for practicing medicine without a license.—A report also states that A. M. Hoch, chiropractor at Cleveland, was fined \$500 and costs, and that M. Pottgeiser, a chiropractor of Cleveland, was fined \$100 and costs on a similar charge.

Prosecutions During 1919.—A letter received from Dr. Herbert M. Platter, secretary of the Ohio state medical board, states that during 1919 thirty-two individuals were convicted for the illegal practice of medicine and four for the illegal practice of midwifery, and the certificates of seven physicians were revoked and one certificate was suspended. Fifteen other individuals against whom cases were pending left the state and for that reason were not brought to trial.

Personal.—Dr. Benjamin I. Harrison, Cleveland, has been awarded a traveling fellowship for one year by Western Reserve University. Dr. Harrison saw service with both the British and American Expeditionary Forces during the world war. He will initiate his studies at the University of Oxford, England.—Dr. William S. Warren, Jacobsburg, was seriously injured by the overturning of his automobile near Businessburg, February 3.—Dr. Chester M. Peters, Canton, has been appointed health commissioner of Stark County.

Hospital Items.—Plans for the \$500,000 hospital to be erected at the Masonic Home have been approved by the trustees.—The plan, which has been under consideration for several years, for the erection of a joint tuberculosis hospital by the counties of Muskingum, Fairfield, Perry, Licking and Coshocton, has been abandoned so far as the Muskingum County commissioners are concerned.—The Massillon State Hospital has been granted an appropriation of \$130,000 for a new hospital building and an industrial building. The present industrial building will be converted into a cottage. The capacity of the hospital will thus be increased so that 130 additional patients can be accommodated.

PENNSYLVANIA

Conference of Industrial Physicians and Surgeons.—The state department of labor and industry will convene the tenth conference of industrial physicians and surgeons in the state capitol, Harrisburg, March 25.

Philadelphia

Drive for St. Agnes' Hospital.—For the first time in its thirty-two years of existence, St. Agnes' Hospital will appeal to the public for funds in a drive for \$500,000 to be inaugurated March 15.

Osteopaths Lose Test Case.—The first step in a test case brought to determine whether or not practitioners of osteopathy may prescribe and administer drugs to patients was lost by the osteopaths when Judge Martin in Quarter Session Court refused to grant a new trial to Philip S. Dailey and fined him \$50 and the costs of prosecution.

Personal.—Dr. Robert N. Keely has been appointed surgeon of the Philadelphia Nautical School's schoolship *Annapolis*.—Dr. Max R. Gabrio has been appointed chief resident physician at the Philadelphia Hospital for the Insane at Byberry to succeed Dr. James Allen Jackson, resigned.—Dr. Edgar Fahs Smith was unanimously offered the position of provost emeritus of the University of Pennsylvania by the board of trustees.—Dr. John F. X. Jones has been appointed a member of the surgical staff of St. Agnes' Hospital.

Influenza Fund.—The city council has passed a general appropriation bill by which \$50,000 will be available for combating influenza or for use in any other health emergency. The director of public health and charities will expend the money, subject to approval of the mayor, president of council and chairman of the finance committee. The latest report indicates that influenza is decreasing: the number of persons taken ill in the twenty-four hours ending at

noon February 19 was 176 as compared with 219 on the preceding day, with 100 deaths from influenza, pneumonia and complications.

CANADA

Medical Building for University.—The United States Consul at Calgary, Alta., reports that a new medical building to cost \$750,000 is to be erected for the University of Alberta. The plans have already been prepared and the construction will be commenced as soon as weather conditions permit.

Disease Record of Ontario.—There were almost 2,000 fewer deaths from communicable disease in Ontario during 1919 than in the previous year. Although more than 3,000 cases of smallpox were reported only nine deaths were recorded. Diphtheria caused 428 deaths and tuberculosis showed a slight increase, 2,234 cases and 1,722 deaths, as compared with 2,122 cases and 1,359 deaths in 1918.

Mental Hygiene Survey.—The Canadian National Committee for Mental Hygiene which was organized in April, 1918, has already conducted mental hygiene surveys in British Columbia, Manitoba, and Guelph, Ont. Governmental requests have been made for surveys during 1920 by the provinces of Alberta and New Brunswick, and the cities of Fort William and Port Arthur, Ont., while surveys are now in progress in Toronto and Ottawa, Ont., and Montreal, Que.

Postgraduate Course in Public Health Nursing.—In cooperation with the Victorian Order of Nurses and the public health, charitable and philanthropic organizations of Halifax and Dartmouth, Dalhousie University has inaugurated a course in public health nursing limited to graduate nurses. The Nova Scotia branch of the Canadian Red Cross Society has provided twenty scholarships of a value of \$200 each. Lectures will be given chiefly by members of the medical faculty, and will deal with every phase of public health nursing. These courses will be augmented by eighteen hours of field work each week in social service, prenatal hygiene, infant welfare and school medical inspection service, by attendance at public clinics and by visits to all hospitals, industrial schools and health and social centers in Halifax. Upon successful completion of the full course of six months, a certificate of proficiency will be awarded to candidates.

GENERAL

Duty on Scientific Apparatus.—The Senate Committee on Finance has approved the bill placing a duty of 45 per cent. on imports of surgical and scientific instruments and laboratory glassware. There was no opposition to this bill before the committee.

New England Medical Women Elect Officers.—At the annual reunion and banquet of the Medical Women of New England, held in Boston, January 17, Dr. Agnes C. Viator was reelected president; Dr. Margaret L. Noyes Kleinert, vice president; Dr. Alice H. Bigelow, secretary, and Dr. Isabel D. Kerr, treasurer, all of Boston.

Transportation for Railroad Surgeons.—Physicians who act in a professional capacity for railroads will continue to have the privilege of free railroad transportation. The clause in the railroad bill as it passed the House of Representatives, which would forbid free transportation to physicians, has been eliminated by the conference committee.

Hospital Society Enlarged.—The National Methodist Hospital Association at its meeting in Chicago, February 12, voted to include homes for aged and for dependent children in its organization. Plans for cooperation with the inter-church world movement were discussed, giving over an item of \$100,000,000 in the budget for Methodist hospitals. Mr. E. S. Gilmore, superintendent of the Wesley Memorial Hospital, Chicago, was reelected president, and M. C. England, Cleveland, vice president.

Board for Ophthalmic Examination.—The next examination of the American Board for Ophthalmic Examinations will be held in New Orleans, April 26, at the time of the meeting of the American Medical Association. Applications and necessary credentials of candidates who desire to take the examination and obtain the certificate of the board should be in the hands of the secretary, Dr. William H. Wilder, 25 East Washington Street, Chicago, at least sixty days before the time set for the examination.

Health Work in Colleges and Universities.—In connection with the annual Conference on Public Health and Legislation called by the Council on Health and Public Instruction of the American Medical Association at the Auditorium Hotel,

Chicago, on March 4, 1920, Dr. John Sundwall, university health officer for the University of Minnesota, and Dr. Warren E. Forsythe, director of the university health service of the University of Michigan, have issued a call for all persons interested in health work in colleges and universities to attend a special meeting to be held at some convenient time during the conference to discuss special features of such work and possibly to effect an organization and arrange for meetings in the future. The time and place of the meeting will be announced at the conference.

Appropriations for Public Health Service.—In the emergency deficiency bill which has just passed the Senate, there is an appropriation of \$3,000,000 for medical, surgical and hospital services for war risk insurance patients of the Public Health Service. The expenditure of this money is made immediately available to care for the work of the Public Health Service in behalf of former service men of the Army and Navy. There is also included in this bill provision for the final purchase of the Broadview Hospital—Speedway—at Chicago, Ill. This hospital will be used by the Public Health Service in the care and treatment of war risk insurance patients. Three million dollars has been appropriated heretofore for the purchase of this hospital and an additional sum of \$500,000 is necessary to complete the construction of the hospital and make it meet the needs and purposes of the Public Health Service.

Philippine News.—The municipal council of Manila has approved an appropriation of 25,000 pesos (about \$12,500) to furnish free of cost condensed milk to indigent children during the year 1920.—There has been held recently at Batangas, the capital of the province of the same name, the meeting of the physicians of the twentieth sanitary district. The district sanitary director, Dr. José M. Raymundo, presided, and the meeting was attended by some of the most prominent Filipino physicians, including the director of public health, Dr. V. de Jesús, Drs. P. Gabriel and J. B. Cabarrús.—Plans are being made for the construction of a municipal hospital at Tondo at an estimated cost of 1,000,000 pesos (about \$500,000).—The following appointments have been announced: Dr. José Avellana Basa to be physician in chief of the Culió leper colony; Dr. Guillermo S. Sisón to be president of the thirteenth sanitary district division of Pangas; Dr. Fernando Calderón to be member of the board of trustees of the University of the Philippines, and Drs. José P. Bantug, Otto Schobl and Proceso Gabriel to act as a committee to report on the convenience and mode of enforcing anticholera vaccination in the Philippines.

The Dye Industry Bill.—Physicians, as well as chemists, are interested in the action of the Senate Committee on Finance in favorably reporting the dye industry bill. This is due to the fact that the manufacture of synthetic drugs is directly connected with the dye industry. The bill places import duties on dyes and an embargo on their importation, in order to encourage American laboratories to build up an industry which will be able to compete with the German monopoly heretofore dominating in the manufacture of synthetic drugs. The bill has already passed the House of Representatives. It provides a tariff of 30 per cent. on acetanilid suitable for medicinal use, acetphenetidin, acetylsalicylic acid, antipyrin, benzaldehyd, benzoic acid, betanaphthol, phenolphthalein, resorcin, salicylic acid and its salts, salol and other medicinals. The subcommittee held extensive hearings covering a period of several weeks, and important statements on the subject of the development and production of synthetic drugs by American laboratories were made by Dr. Marston T. Bogert, professor of organic chemistry of Columbia University, New York, and Dr. Julius Stieglitz, chairman, department of chemistry, University of Chicago.

Decennial Pharmacopeial Convention.—The United States Pharmacopeial Convention has issued the call for its tenth decennial meeting at 10 a. m., May 11, in Washington, D. C., at the Hotel Willard. One of the first and most important activities of the convention will be the election of fifty delegates who will constitute a committee on revision, to which will be assigned the task of determining the general principles to be followed in compiling the tenth revision of the pharmacopeia. The United States Pharmacopeial Convention is a corporation constituted of delegates elected by a number of organizations associated for the purpose of revising the United States Pharmacopeia every ten years. The interests of practitioners of medicine are conserved by delegates from the American Medical Association, the state medical associations, the medical colleges and the medical

departments of the U. S. Army, U. S. Navy and U. S. Public Health Service. Each of these organizations should promptly select three qualified and competent delegates who will attend the convention and take active part in framing its policies. Because of the importance of the work and because of the great responsibility it entails, the medical profession should be properly represented. Forms for certifying the delegates to the convention are to be obtained by addressing Dr. Noble P. Barnes, Arlington Hotel, Washington, D. C. These forms should be properly executed and the delegates reported to Dr. Barnes at least six weeks before the date set for the convention.

Legislation for Physical Education.—A bill for the promotion of physical education through cooperation of the federal government with the states has been introduced by Congressman Fess of Ohio. It provides for the employment of supervisors and teachers of physical education, including medical examiners and nurses. The work is to be conducted under the direction of the National Bureau of Education and the Public Health Service. The bill appropriates \$10,500,000 for 1921, and \$1 per year thereafter for each child of school age, the money to be apportioned to those states which shall appropriate an equal amount. Its provisions include a comprehensive course of physical activities, periodical physical examination, health supervision of schools, and schoolchildren; practical instruction in the care of the body and in the principles of health. The bill also provides for the establishment in the Public Health Service of a division of child hygiene. This bureau is to be in the charge of a commissioned officer of the Public Health Service who shall select other employees to assist him in his duties. These duties shall be to study and investigate the problems of child hygiene, to cooperate with state boards of health in medical research and practical administrative demonstrations relating to the health of women, children and to child bearing, and shall cooperate with the children's bureau of the bureau of education in matters relating to health conservation of children and mothers. An elaborate plan for cooperation with state authorities is formulated in the measure.

FOREIGN

Lister Memorial Institute.—The project which originated before the war for the establishment in Edinburgh of a memorial to the late Lord Lister has been revived. The memorial is to take the form of a scientific teaching and research institute under the auspices of the University of Edinburgh, the Royal College of Physicians and the Royal College of Surgeons of Edinburgh.

Statistics on Venereal Diseases in Germany.—The minister of the interior sent a questionnaire to all the physicians in Germany asking for the number of cases of venereal diseases in their charge between Nov. 15 and Dec. 14, 1919. The names of the patients were to be written on a perforated slip accompanying the questionnaire, but this was to be torn off and retained for the writer's information if need arises later.

Insane Aliens in Switzerland.—At the recent semiannual meeting of the Société des médecins aliénistes suisses a resolution was adopted asking the authorities for regulation of conditions in regard to alien insane. It has been found that many of the interned who required psychiatric treatment and were repatriated at the proper time, have returned to Switzerland, instances being known in which their home authorities paid their transportation back to Switzerland.

Personal.—Dr. Swale Vincent, since 1904 professor of physiology at the University of Manitoba, Winnipeg, has been appointed professor of physiology in the University of London, Middlesex Hospital, and will probably take up his new duties early in May.—Dr. Harold Pringle, lecturer on histology and assistant in physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, succeeding the late Sir Henry Thompson.

The International Pneumothorax Association.—The *Poli-clinico* announces that now, after the interregnum of the war, the international association entitled Pneumothorax Artificialis is to resume its work. The association intends to revive the international review, *Pneumothorax Thérapeutique*, founded by Forlanini, but for the present has made arrangements with *Tuberculosis*, published at Rome, which has agreed to summarize all the works on artificial pneumothorax as they appear in 1920. The secretary of the association is Prof. U. Carpi, Lugano, Italy.

French Children and the World War.—The effect of the war on the children of France is shown in a recent report submitted by the American Red Cross headquarters at Lille, based on the figures of the municipal bureau of hygiene. Before the war the city had a population of 200,000. The birth rate has shrunk from nearly 4,900 in 1913 to only 600 in 1918, and the figures by years indicate a loss of 15,000 births during the war. Since the armistice a survey has been made in all public and private schools to determine the number of children whose development has been retarded, and to place those with signs of tuberculosis in the care of institutions and welfare organizations. Of 18,000 children in the schools of Lille at the time of the armistice, over 6,000 had to be sent to hospitals or convalescent centers, 60 per cent. showed signs of arrested development, while about 40 per cent. gave evidence of glandular or pulmonary tuberculosis. In one typical school, out of 210 examined only one child was in normal health.

Deaths in the Profession Abroad.—Dr. W. Schallmeyer of Munich, whose work, "The Threatened Physical Degeneration of Civilized Races," won the Krupp prize in 1903, aged 62.—Dr. Schottelius, director of the Institute of Hygiene at Freiburg for many years, aged 70, has been missing since last September. He was visiting a lake resort when last seen.—Dr. R. Stierlin, professor of surgery at the University of Munich.—Dr. A. Knoblauch, aged 56, whose atlas of chronic diseases of the nervous system appeared in 1919. He was the constantly reelected president of the Senckenberg Society for Scientific Research at Frankfurt.—Dr. Hoffmann of Heidelberg, author of various works on neurology, aged 62.—The cable brings word of the death of Dr. E. Wertheim, professor of gynecology and obstetrics at the University of Vienna, whose name is associated with operations for uterine cancer.—Dr. Calatraveño, a leading pediatricist, hygienist and medical editor at Madrid and honorary member of numerous scientific societies at home and abroad, aged 58.

LATIN AMERICA

Foot and Mouth Disease in Bolivia.—According to a cablegram received from Bolivia, foot and mouth disease is prevalent among the cattle of the department of Cochabamba.

Plague in Uruguay.—During the recent outbreak of the plague in Uruguay there were seventeen cases with two deaths, all of which occurred at Santa Rosa, department of Canelones, in October and November, 1919.

New Members of the Uruguayan Public Health Council.—Drs. Alfredo Vidal y Fuentes, José Mainginou and José Infanzozzi have been appointed president and members, respectively, of the National Council of Hygiene of Uruguay.

Influenza in Mexico.—A cablegram from Mexico states that the epidemic of influenza continues to spread. In the Military School classes were suspended, and public business is suffering because of the absence of employees. The disease is of a mild type.

New Hospital for Panama.—Construction work on the new national hospital for Panama has been begun at El Hatillo, a high point facing the Pacific in a suburb of Panama. The hospital will cover a site of fourteen acres, and will be composed of eleven reinforced concrete buildings arranged in rectangular form, with accommodations for 600 patients. The construction is in charge of Major Edgar A. Bock, M. C., U. S. Army, at present superintendent of the Santo Tomas Hospital, Panama.

Panama Nurses' Graduation.—At the graduating exercises of the Santo Tomas Hospital Training School for Nurses, January 31, diplomas were presented to the seven graduates by Major Edgar A. Bock, M. C., U. S. Army, superintendent and director of the training school. Thirty-five selected pupils of Panamanian nationality form the school and during its three years of operation twenty-nine diplomas have been awarded to successful graduates, who are now found in several hospitals of South America.

International Sanitary Conference.—The sixth International Sanitary Conference of the American Republics will convene at Montevideo, Uruguay, Dec. 12-20, 1920. The invitations for the conference will soon be sent by the Uruguayan government, and the program will be issued by the International Sanitary Bureau in Washington, of which Dr. Rupert Blue, U. S. Public Health Service, is acting chairman. As indicated by Dr. E. Fernandez Espiro, the chairman of the organization committee, the chief subject for discussion will be the improvement of sanitary conditions in American countries.

Government Services

Health of the Army

For the week ending February 13, influenza continued to be reported from almost all the camps in decreasing numbers. The number of new cases of pneumonia following influenza is also decreasing. The death rate for disease is lower than for the previous week. Among the American forces in Germany, influenza and measles continued about the same, while pneumonia showed a slight increase. Among the American forces in Siberia, influenza and pneumonia were also prevalent.

Eighty-Ninth Division Medical Association

The officers who served with the Eighty-Ninth Division have formed an organization to be known as the Eighty-Ninth Division Medical Association of which Dr. Czar C. Johnson, Lincoln, Neb., is acting organization secretary. The purpose of the organization is to perpetuate the association of the 260 medical officers who at some time served with the division, by keeping a roster of membership and by a reunion at some central place each year for a professional and social meeting. The first reunion will be held in Kansas City, Mo., during the summer or early fall.

Medical Officers Over Fifty May Remain in Service

Senate Bill No. 3668 provides for the retention in service of certain "persons under the age of fifty years," who shall have served as officers of the medical, dental or veterinary corps in the United States Army, the National Guard in the service of the United States or in the National Army between April 6, 1917, and Nov. 11, 1918. It is suggested that, should the Senate do justice to the small number of officers now holding temporary commissions, who will be barred from entering the Medical Corps by reason of having attained the age of fifty years, an amendment be offered to the bill inserting after the words "fifty years" "or complete twenty or more years of commissioned service with regular troops before reaching the age of 64 years," etc. Under the present bill many valuable officers over fifty years of age will be eliminated from the Army.

Foreign Correspondence

LONDON

Feb. 7, 1920.

Medical Secrecy in Venereal Cases

Unlike the conditions in other countries, the English law recognizes the inviolability of the medical secret. The question has just arisen in a new form. During the hearing of an undefended suit for divorce brought by the wife, a physician was called on to give evidence that he had treated her for venereal disease. Adultery was proved, but in this country a woman suing for divorce must prove cruelty also. In this case the charge of cruelty was based on the communication of syphilis to her by the husband. A physician from the Westminster Hospital was called to prove that she was suffering from syphilis. Before giving evidence he handed the judge a letter from the chairman of the house committee stating that the hospital had adopted the national scheme for dealing with venereal disease and enclosing a copy of the statutory regulations, one of which enjoined absolute secrecy on the physician who attended the patient. The judge (Justice McCardie) said that the physician was one of those who were desirous of assisting the scheme for treating venereal diseases in every way, and for that purpose he wished loyally to maintain the secrecy which rightly rested on him. But in a court of justice there were even higher considerations than those that prevailed with regard to the professional position of physicians. Apart from the obligation that might be imposed on physicians by the judge, it was desirable that there should be a loyal observance of the confidence that was reposed in them by patients. He then ordered the physician to give evidence, which the latter did, showing the woman was suffering from syphilis. This ruling has not been received without criticism by the profession. Mr. H. W. Bayly, honorary secretary of the Society for the Preven-

tion of Venereal Disease, stated that he felt confident that his committee would agree that physicians should be protected from compulsion to "give away" their patients. There would never be an effective use of the clinics now provided unless the patients had complete confidence that their secrets would not be revealed. If he found himself in the same position, he would refuse to give evidence. This would make him liable to imprisonment for contempt of court but it is doubtful whether any judge would press the matter, as public sympathy would be against him. The *Lancet* also points out the detrimental effect of the ruling on the working of the venereal clinics.

The Influenza Epidemic

The most comprehensive account of the great influenza epidemic has been issued as a government report by Dr. Carnwith. He gives evidence to show that the epidemic originated in China and spread to America and thence to Europe. Glasgow in May, 1918, was the seat of the first outbreak among the civilian population. In June the disease reached England, and the summit of the first wave occurred in the week ending July 13. The early cases were slight, the late ones severe. This was again seen in the autumn wave, the most terrible of all. The ports of Portsmouth, Southampton and Liverpool, which were affected first, suffered lightly. Inland towns suffered later and more severely. The subjoined table gives a comparison of the deaths in London with those in American towns from influenza and pneumonia (all forms) during eight weeks of the epidemic.

DEATHS IN LONDON AND IN AMERICAN CITIES

City	No. of Deaths	Rate 8 Weeks per 100,000 of Population
London	13,744	341
New York	20,681	360
Chicago	8,785	343
Philadelphia	12,806	749
Boston	4,211	548

The number of weeks intervening between the highest points of the summer and autumn epidemics were: London, 15; Liverpool, 14; Manchester, 20; Stockholm, 9; Copenhagen, 12; Chicago, 28. The age incidence showed curious changes. During the summer wave the ages most affected were 15 to 45. In the winter wave there was a considerable shifting toward the extremes of life and particularly toward the younger years. The susceptibility of young children was the subject of a special inquiry in London. Though the attack rate was below the average, the chances of recovery were less than in other age groups. Of breast-fed infants, 30 per cent. contracted the disease; of artificially fed, 54 per cent. The opposite, however, occurred in lying-in homes. An inquiry in Cheshire revealed that 25.4 per cent. of expectant mothers affected died, and of 118 expectant lives only fifty-seven survived. It does not appear that one attack was invariably powerful in protecting against others. The results are contradictory, but may be reconciled by the hypothesis that there are several strains of the influenza virus, and that these vary in virulence and antigenic potency. On this explanation, infection with one strain confers little or no protection against infection with others. Each wave seemed to have its peculiar dominant strain producing a certain wave individually.

The Fellowship of Medicine

At a meeting of the executive committee of the Fellowship of Medicine and Post-Graduate Association, at which Sir Humphrey Rolleston presided, a resolution was passed in silence recording the profound sorrow of the association at the loss of their president, Sir William Osler, without whose guidance and support success would have been impossible. A plan for the establishment of postgraduate courses was submitted by a special subcommittee and approved. Three series of courses are contemplated: 1. Postgraduate courses for general practitioners. A series of courses dealing with the various clinical subjects from the general practitioner's point of view, each lasting a fortnight or more, should be arranged by single institutions or by groups of institutions. These institutions would be of two kinds: (a) those, such as the existing postgraduate institutions, providing postgraduate instruction through the greater part of the year, and (b) those undergraduate schools which are willing to provide short courses from time to time. 2. Postgraduate advanced and special courses. Consecutive series of advanced courses, each series dealing with one clinical subject from the spe-

cialist or advanced point of view, should be arranged by educational subcommittees to be elected annually by separate meetings of London teachers, including the councils of the corresponding sections of the Royal Society of Medicine. 3. Postgraduate students preparing for special examinations. Courses for special examinations should be arranged by individual schools, as has been done in the past.

Increase of Women Physicians

The great increase in the number of women physicians in this country since the war began has been pointed out in previous letters to THE JOURNAL. It is now foreseen that by 1925 there will be a very large number, for nearly 3,000 woman students are taking up medicine today. The Women's School of Medicine is quite full. There are many reasons for this. First, there was a scarcity of men physicians brought about by the war. Then, a large number of openings arose, owing to the progressive public attitude toward social welfare and child life. These appointments will increase from year to year as it is realized what great factors the clinic and the medical inspector are in the educational and industrial worlds. The girls who are training to become physicians are mostly from the middle professional class, some are the daughters of rich merchants, who are determined to be independent, and others are from the families of the once leisured class, now described as the "new poor" (people made poor by the rise in the cost of living with no counter-balance).

Criticism of the Insurance Act

Dr. Addison, minister of health, received a deputation from the British Federation of Medical and Allied Societies with regard to the national insurance act. Dr. Arthur Latham said that the deputation came to emphasize the fact that national health insurance did not permit the insured persons to receive all that the science of medicine had to give, and under the regulations the physician was not able to do the effective work he was willing and anxious to do. They had the lessons of five years' experience during the war of the most gigantic experiment in health services the world ever saw. The insured public asked for bread and were given a stone. They asked for health and were given regulations which seemed to be chiefly designed to catch the erring physician in some fault. The tendency of the regulations was to impair the efficiency of the health services. At the end of the war the medical arrangements were far more effective than at the beginning, and under the compelling force of great events, modern methods were able to push their way through regulations. There must be regulations; but if they were not to hamper efficiency, they must be elastic. None of the lessons of the war had been incorporated in the regulations of the insurance act. The deputation suggested a public inquiry into the working of the act.

Dr. Addison said he was grateful for the efforts of the federation to focus trained medical opinion on the question how the medical services of the country could best serve the public. He invited its help in devising a scheme whereby a strongly individualistic profession, such as the medical, could be brought with good will to devote its services commonly to the public necessity. The type of service he was aiming at had been remitted to the consultative council, and as soon as he received the report it would be made public. Should a wider inquiry be found necessary it could be undertaken.

The St. Andrews Institute for Clinical Research

On retiring from practice in London, Sir James Mackenzie took up his residence in the small Scotch town of St. Andrews, where he has founded an institute for clinical research of a new type to carry out methods of investigation which he has long advocated. He considers that the methods of physiology and bacteriology which have helped some sections of medicine are not applicable by themselves to the wider fields of clinical medicine. What is necessary is a much more profound and systematic study of symptoms than has been accomplished in the past. Disease is made manifest only by symptoms. Therefore, the first step is to understand the nature and significance of symptoms. The structural stage of disease when it has caused structural damage has been fairly well studied, but not so the early stages before the occurrence of physical signs, and the causes which predispose to disease. St. Andrews has a population of only 10,000, but this is considered an advantage, as the inhabitants are less migratory than in larger towns and it is therefore easier to keep in touch with them. The

object is to study not the rarer forms of disease but the most common. Arrangements have been made with the physicians on the insurance panel by which their patients will attend the institute at regular hours. Each physician will have at his disposal a separate room and all the facilities of the institute. A chemist has been appointed on the staff, and it is intended to appoint a bacteriologist. The professors of anatomy and physiology of St. Andrews University will give help and also—a peculiar innovation—the assistant professor of logic.

Ventilation of Places of Amusement

The Public Health Committee of the London County Council is recommending the enforcement of regulations for the more effectual ventilation of places of amusement, and the exclusion of children, as precautionary measures against the spread of infectious diseases. The theaters and music halls committee of the council has already expressed the opinion that the only efficient means of securing satisfactory atmospheric conditions in a place of entertainment and thereby preventing as far as possible the spread of infection is the installation of an adequate system of mechanical ventilation combined with a system of heating under which fresh air is warmed before it enters the building. Experience has shown that unless incoming air is warmed, the mechanical ventilation system is not fully utilized, owing to the cold draft caused. Such a combined system is required in all new places of entertainment and, as opportunity offers, in existing places. A similar policy has been pursued with regard to the provision of means of natural lighting, so that daylight may be freely admitted into halls when not in use for cinematograph displays.

PARIS

Jan. 22, 1920.

A Confederation of French Scientific Societies

In my letter of January 15 (*THE JOURNAL*, Feb. 21, 1920, p. 538) I mentioned the circumstances that had led certain societies to form federations. The chemical societies were the first to take such action. Soon afterward the societies of natural science followed their example, and now a federation of the societies of physical science is about to be organized. On the initiative of M. Moureu, professor in the Ecole supérieure de pharmacie de Paris, and member of the Academy of Medicine and the Academy of Science, a meeting of the representatives of these various federations has been called to discuss the feasibility of forming a general confederation of federated scientific societies. About forty scientific societies were represented at this meeting, and it was unanimously decided to form such an organization. The purpose of this confederation will be to establish intimate relations between the groups of the different branches of pure and applied science; to coordinate their efforts from a scientific, technical and economic standpoint, and to further the development of all movements destined to contribute to the progress of pure and applied science, with a view to promoting the economic welfare of the country, and to increasing the general prosperity.

Difficulties That Scientific Publications Are Facing

Everything pertaining to printing and publishing is associated with difficulties nowadays. First, there is the shortage of paper to contend with; then there is the scarcity of labor, the lack of suitable buildings, transportation difficulties, the deficiency of coal, etc. This state of affairs not only retards the publication of scientific journals, but threatens their very existence. Some publications whose fine general appearance justifies a considerable increase in price or whose subscription list is growing rapidly can endure all these inconveniences, but with scientific publications it is different, for their patronage is necessarily limited. This condition of things is beginning to attract considerable attention in scientific circles, and, quite recently, M. Henneguy, professor in the Collège de France, took the initiative and called a meeting of the managing directors and secretaries of the scientific publications, and representatives of the federations of societies of learning. Ways and means of remedying the unfavorable conditions were discussed. A proposal to establish a cooperative society to handle the printing and publishing of scientific journals was considered, reference being made to the university press idea as carried out in England and America (Oxford University Press, and many others), but it was thought to be impossible or impracticable to adopt the university press plan in toto, although it was admitted that certain commercial

features on which it is based may well be imitated. Any cooperative plan would have to be based, above all, on a complete inventory of French scientific publications, and would necessitate as wide a curtailment as possible. This implies, of course, the necessity of raising considerable funds; state aid would have to be secured; private contributions would need to be solicited, and an issue of stock would have to be made. In short, as a cooperative society could not be established over night, it was thought best to face the immediate needs of the scientific publications.

After this exchange of opinions, in which many men well known in the scientific world took part, M. Henneguy moved that a committee be appointed to study into the matter. His motion was unanimously adopted. Accordingly, the Comité d'étude de la presse scientifique was chosen to investigate the question and to report on these three matters pertaining thereto: 1. What plan can be adopted to print and publish works needed for scientific documentation, journals of pure and applied science, and works on pure science, so that they can be sold at a reasonable price, authors and writers be paid a just remuneration, and a maximal output be secured? 2. What journals already in existence or about to be founded could be so associated as to make possible eventually the plan of a cooperative printing and publishing house? 3. How may, eventually, French scientific publications be grouped and classified so as to avoid duplication of effort, and favor, on the other hand, the founding of new journals, if such should seem needed?

Medical Science and Aeronautics

The sixth Salon de l'Aéronautique, recently held in Paris, gave abundant evidence of the progress that medical science as applied to aerial navigation has made during the past six years, since the last Salon de l'Aéronautique was held in 1913. The physiologic section of military aviation was especially interesting. It covered six display booths. The first booth comprised everything that pertains to the general examination of the would-be aviator, including means of identification, height, weight, musculature, bones and joints. The second and third booths were devoted especially to the nervous system and the organs of sense: study of the functions involved in walking, the coordination of movements, the equilibration apparatus, and the examination of vision and audition. In the fourth booth, examinations of the circulation, blood pressure, and respiration were conducted. The fifth and sixth booths took up roentgenoscopy and the laboratory examination. The general impression that one gained at this exhibit was that medical science has made exceedingly important contributions to the progress of aeronautics, not only as regards the establishment of the standard which a candidate for the post of pilot must attain to in the medical examination, but also with respect to the limitation of the dangers of aviation in general. From the prophylactic point of view, the automatic oxygen inhaler may be mentioned particularly. The Garsaux inhaler is so constructed that oxygen to the extent of 35 liters an hour for each passenger is supplied automatically as soon as an altitude of 3,500 meters is reached. The amount of oxygen furnished increases gradually, until, at an altitude of 8,000 meters, 150 liters an hour are supplied.

Marriages

HENRY BLODGETT MCINTYRE, Lieut.-Col., M. C., U. S. Army, on duty at Fort McHenry, Md., to Miss Gladys E. Miller, at Mamaroneck, N. Y., January 31.

GEORGE LYLE VENABLE, New Sharon, Iowa, to Miss Georgia Jinks of North Manchester, Ind., in the chapel of St. Luke's Hospital, Chicago, February 3.

MATTHIAS HIGGINS, JR., Newport, Ky., to Mdle. Germaine Perillion of St. Etienne, France, in New York City, February 7.

WILLIAM H. MATCHETTE to Miss Nellie Turner, both of Greenville, Ohio, at Covington, Ky., Dec. 22, 1919.

ARTHUR LAWRENCE NIELSON, Kansas City, Mo., to Miss Katherine Krug of Washington, D. C., January 24.

RALPH HENRY DUNNING, Syracuse, N. Y., to Miss Georgia Malone of Lancaster, Ohio, January 27.

THOMAS CONROY ELEY, Plymouth, Ind., to Miss Gertrude Spiegel of Indianapolis, February 18.

Deaths

John Walton Ross ☉ Pasadena, Calif.; Tulane University, New Orleans, 1868; aged 77; medical director (captain), U. S. Navy, retired; who entered the Navy in 1870, and was retired Jan. 11, 1905, on attaining the age of 62 years, after ten years and one month of sea service; and who since his retirement had resided in California; an expert in yellow fever; chief of the department of charities and hospitals in Havana during the American occupation of Cuba, and director of the hospitals of the Canal Zone; a member of the Association of Military Surgeons of the United States; died, February 9.

Joseph Ashton Blanchard, Shreveport, La.; College of Physicians and Surgeons, Baltimore, 1897; aged 45; formerly city physician of Shreveport; a member of the Louisiana State Medical Association; captain and assistant surgeon, First Regiment, Louisiana Volunteers, during the war with Spain; was found dead in his room in a hotel in Memphis, February 4, from a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent.

Joseph Nelson Clark, Harrisburg, Pa.; Georgetown University, Washington, D. C., 1867; aged 80; for many years a druggist of Harrisburg; a veteran of the Civil War; president of the People's Savings Bank of Harrisburg; a school director for eleven years, and for one year secretary of the board; died, February 5, from bronchopneumonia.

James Jackson Johnson, Braggs, Okla.; University of Louisville, Ky., 1907; aged 35; sergeant first class, Medical Department, U. S. Army, for six years, and later attached to the American Red Cross Commission to Siberia; died, Dec. 13, 1919, from typhus fever, and was buried with military honors at Irkutsk, Dec. 16, 1919.

Harry John Tate, Pittsfield, Mass.; Georgetown University, Washington, D. C., 1914; aged 30; first lieutenant, M. C., U. S. Army, with service abroad; a member of the Massachusetts Medical Society; city physician of Pittsfield; died in the House of Mercy Hospital, Pittsfield, February 11, from pneumonia.

Hiram M. Day, Delaware, Ohio; Western Reserve University, Cleveland, 1881; aged 65; a member of the Ohio State Medical Association, and once president of the Delaware County Medical Society; formerly president of the Farmer's Bank, Pandora, Ohio; died, February 2, from heart disease.

George Henry Balleray ☉ Paterson, N. J.; College of Physicians and Surgeons in the City of New York, 1869; aged 71; a fellow of the New York Academy of Medicine, and of the British Gynecological Society; for ten years surgeon to the Woman's Hospital, Newark; died, February 11.

John Stevenson Tinker ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1908; aged 45; a member of the eye, ear, nose and throat staff of the Polyclinic Hospital and Bethany Dispensary, Philadelphia; died, February 8, in the Polyclinic Hospital, from pneumonia.

William Leckie Bain, Chicago; College of Physicians and Surgeons in the City of New York, 1884; aged 60; for several years a resident of Denver; a specialist in the electrolytic treatment of copper ores; died, January 30, from locomotor ataxia.

Michael Charles Dunnigan, Erie, Pa.; University of the City of New York, 1868; aged 80; formerly town clerk and treasurer of Erie; president of the Erie Board of Health in 1899; died, February 5, from cerebral hemorrhage.

Otto A. Hartwig, St. Louis; Missouri Medical College, St. Louis, 1880; aged 76; a member of the Missouri State Medical Association; for more than twenty-five years a pharmacist; died, February 3, from bronchitis.

James E. Cole, Hazelwood, N. C., formerly of Middleton, Ga.; Southern Medical College, Atlanta, Ga., 1890; aged 54; a member of the Elbert County Board of Education; died, February 3, from cerebral hemorrhage.

Alexander Samuel Harshberger ☉ Lewistown, Pa.; University of Pennsylvania, Philadelphia, 1870; aged 70; local surgeon for the Pennsylvania Railroad for thirty-two years; died, February 11, from pneumonia.

Joseph Patrick Deery, Fairfield, Conn.; Maryland Medical College, Baltimore, 1913; Kansas City (Mo.) College of Medicine and Surgery, 1917; aged 34; died at Bridgeport, Conn., February 2, from pneumonia.

Harvey Sturgeon Foringer, Wilksburg, Pa.; College of Physicians and Surgeons, Baltimore, 1896; aged 60; for the last fifteen years a representative of a pharmaceutical house; died, February 4, from pneumonia.

Howard L. McKinstry, Red Wing, Minn.; University of Pennsylvania, Philadelphia, 1870; aged 71; died at the home of his daughter in Granite Falls, Minn., February 7, from cerebral hemorrhage.

Edwin Howe, Los Angeles; Physio-Medical College, Cincinnati, 1851; aged 91; for more than sixty years a practitioner of St. Joseph, Mo.; died, Dec. 29, 1919, from cardio-renal disease.

William Thomas Vance, Bloomsburg, Pa.; University of Maryland, Baltimore, 1881; aged 68; a member of the Medical Society of the State of Pennsylvania; died, January 30, from heart disease.

John F. Taggart, New Washington, Ind.; Jefferson Medical College, 1860; aged 83; surgeon of the Fourth Indiana Volunteer Cavalry during the Civil War; died, Nov. 30, 1919, from epithelioma.

John Thomas Phillips, Newport, Wash.; Rush Medical College, 1897; aged 49; president of the Security State Bank of Newport; once mayor of Newport; died, February 11, from influenza.

Malcolm Munroe Campbell, Albany, Mo.; University of Michigan, Ann Arbor, 1871; Bellevue Hospital Medical College, 1875; aged 80; died in a hospital in St. Joseph, Mo., February 10.

William Frank Kistler, Minersville, Pa.; Hahnemann Medical College, Philadelphia, 1874; aged 68; died at his winter home in St. Petersburg, Fla., January 30, from cerebral hemorrhage.

Oscar Loehr, Milwaukee; University of Berlin, Germany, 1880; aged 65; died in Alexian Brothers Hospital, Chicago, February 9, from uremia following an operation for prostatic abscess.

Edward August Arnold, East Orange, N. J.; Cornell University, New York City, 1909; aged 32; house physician at the Orange Memorial Hospital; died, February 5, from pneumonia.

John Jasper Sewall, Newport, Me.; University of the City of New York, 1887; aged 62; a member of the Maine Medical Association; died, February 3, after a surgical operation.

George Philip Beutel, Louisville, Ky.; University of Louisville, 1880; aged 72; died in St. Anthony's Hospital, Louisville, February 7, from shock after a surgical operation.

Walter DeWolf Jones, Dierks, Ark.; Philadelphia University of Medicine and Surgery, 1867; aged 75; a veteran of the Civil War; city health officer of Dierks; died, February 4.

Daniel Henry Arendale, Mount Vernon, Ill.; University of Nashville, Tenn., 1884; aged 62; died at his farm, near Mount Vernon, January 30, from acute dilatation of the heart.

Henry Rudolph Widmer ☉ Newark, N. J.; College of Physicians and Surgeons in the City of New York, 1903; aged 38; died, February 1, from cerebral hemorrhage.

Joseph LeRoy Gross, Pittsburgh; Jefferson Medical College, 1919; a member of the house staff of Mercy Hospital, Pittsburgh; died, February 5, from pneumonia.

Clarence Homer Kemp, Elmwood, Ill.; Rush Medical College, 1896; aged 49; a member of the Illinois State Medical Society; died, January 30, from pneumonia.

Arthur G. Thome, Chicago; Chicago Homeopathic Medical College, 1883; aged 62; died in the Chicago Union Hospital, February 17, from heart disease.

William P. Van Sant, Brooklyn, Ind.; Columbus (Ohio) Medical College, 1880; aged 68; died in the Methodist Hospital, Indianapolis, Dec. 5, 1919.

George Washington Hart, Brooklyn; College of Physicians and Surgeons in the City of New York, 1901; aged 46; died, February 7, from pneumonia.

Caryl B. Storrs, Minneapolis; Michigan College of Medicine and Surgery, Detroit, 1892; aged 49; died, January 18, as the result of an accident.

George W. W. Walker, Roseville, Ohio; Zanesville (Ohio) Academy of Medicine, 1875; aged 73; died, February 6.

Correction.—Dr. James Jefferson Johnson, whose death was announced in THE JOURNAL of February 14, states that there must be an error in name as he is still alive and practicing at Sulphur Springs, Texas. The physician who died was Dr. James Jackson Johnson.

☉ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

ANTIPLASMA

J. J. Rudolph's Alleged Specific for Malaria

During the last few months THE JOURNAL has received a large number of inquiries from the South relative to a nostrum that is being sold in that part of the country under the name "Antiplasma" or "Rudolph's Malarial Specific." According to the advertising, the preparation was "developed by J. J. Rudolph, M.D." who, we are told is "one of the leading physicians in America." This, while an obvious enough joke to the medical profession, may be taken seriously by the general public and thus contribute duly to the sale of "Antiplasma." The story goes that Dr. Rudolph during the Boer War collaborated with "Dr. Kruger, the Chief Medical Officer of the Boer Army" and that, between them, they

Chinchora Daria, from which a name is obtained, in reducing fever. But neither Quinine or Arsenic are in reality Specifics. They do not cure; they effect temporary relief. In cases of malaria, Quinine may be taken.

Avoid mosquitos!! There is only one way to cure Malarial Fever. Take 15 drops of Rudolph's Malarial Specific on sugar, or in molasses, three times daily for six days!!

A remarkable remedy has just recently come to light, which will revolutionize the methods of treating this disease. During the time of the Boer War, Dr. Rudolph, one of the leading physicians in America, had occasion to collaborate with Dr. Kruger, the Chief Medical Officer of the Boer Army. These Doctors developed a specific for malaria, with the result that not a single death occurred among the Boers as a result of malarial infection.

Reproductions (reduced) from the circular which is wrapped around the bottle of "Antiplasma."

"developed a specific for malaria with the result that not a single death occurred among the Boers as a result of malarial infection."

In orthodox "patent medicine" style it is declared that quinin—universally recognized as one of the few specifics in medicine—is not in reality a specific at all:

"There is only one way to cure Malarial Fever. Take 15 drops of Rudolph's Malarial Specific on sugar or in molasses, three times daily for six days."

"In no instance has a case not yielded to treatment and a complete and lasting cure effected within seven days."

This marvel, it seems, after the close of the Boer War lay dormant for years and "has just recently come to light"; it "will revolutionize the methods of treating this disease." We are told that for eighteen years past "Dr. Rudolph has used this compound in his private practice in America and has proved its efficacy beyond question and to the complete satisfaction of a number of reputable scientists." Search of medical literature, however, fails to show that Dr. Rudolph has given the world, medical or otherwise, any information regarding his epoch making discovery. Apparently, this "leading physician" kept to himself the knowledge of his "specific" for one of the most widespread diseases known, until he decided that the time had come to commercialize it.

A number of original, sealed packages of Antiplasma were

turned over by THE JOURNAL'S Propaganda department to the A. M. A. Chemical Laboratory. Here is the chemist's report on the product:

"'Antiplasma' ('Rudolph's Malarial Specific') is a pale yellow, viscid liquid having an odor resembling a mixture of oil of turpentine and oil of wintergreen. Its taste is aromatic and bitter, somewhat like the resinous exudates from spruce. On heating, the substance burned with a smoky flame, leaving only a trace of ash. The specific gravity was found to be 0.97924 at 25 C. On distillation with steam, Antiplasma gave a volatile fraction and a non-volatile portion, the latter amounting to 52.9 per cent. of the weight taken. The non-volatile residue was a pale yellow solid which softened to a thick, viscous fluid at 100 C. The odor of the warmed substance was pine-like. It responded to the usual tests for rosin. The distillate appeared to be a mixture of oil of turpentine and methyl salicylate (oil of wintergreen). Quinin and arsenic, two remedies frequently used in the treatment of malaria, were absent. It was impossible to determine by the analysis whether the product had been made by warming a mixture of rosin, oil of turpentine and methyl salicylate or by 'thinning' some natural turpentine-like product with methyl salicylate.

"A mixture of 53 parts of bleached rosin, 41 parts of oil of turpentine and 6 parts of methyl salicylate would probably have whatever anti-malarial properties Antiplasma possesses."

Correspondence

STATUS OF ARSPHENAMIN PATENTS

To the Editor:—In response to requests from a number of physicians concerning the status of the arspenamin patents, I submit data on the subject in the hope that they will interest the readers of THE JOURNAL.

During the recent war, Congress passed a law, known as the "Trading with the Enemy Act," which, among other things, conferred on the President the authority to license American citizens to operate enemy-owned patents. This power was by executive order delegated to the Federal Trade Commission, which granted, after due consideration, licenses to certain applicants. Licensees under this law were to pay 5 per cent. of their gross receipts to the alien property custodian, who was to deposit the same in the United States Treasury. Within a year after the declaration of peace, the foreign owners of the patents were given the right to sue in a court of equity for the payment of a reasonable royalty (presumably the said 5 per cent.) and also to petition the court for a termination of the license granted.

These provisions of the Trading with the Enemy Act have been to a large extent nullified by certain clauses in the treaty of peace, bearing on seized property. An amendment to the Trading with the Enemy Act permitted the alien property custodian to regard patents as property and to seize and sell such property as was owned by enemy aliens. The alien property custodian thereupon seized the 4,500 German chemical patents in the United States, including those covering drugs, dyestuffs and the like. These were sold to the Chemical Foundation for \$250,000.

The purposes of this corporation have been misunderstood in certain quarters. The Chemical Foundation is to be conducted *pro bono publico* and its by-laws exclude the possibility of private gain. Its object is to protect the struggling dye industries of this country and to stimulate and aid scientific research in industrial and medical chemistry; the profits accruing from the royalties paid to it on patents are, after redemption of the preferred stock, to be utilized in grants for these purposes. Its trustees are prominent men of known public spirit and of unimpeachable honor.

The title of the Chemical Foundation to the patents appears to be absolute and irrevocable. Congress specifically limited any claim on the part of the former foreign owners to the proceeds of the sale and not to a recovery of the patents. The peace treaty, in Article 297, validates and confirms the acts of the alien property custodian, and Germany

thus acquiesces in the loss of these patents. The treaty further provides that the German owners of seized patents cannot seek financial redress from the American licensees, but shall look to the German government, which shall indemnify her citizens to the extent of the claims due. The German owner of patents granted before the war is no longer entitled to manufacture in the United States, or to import his products into the United States.

The arsphenamin patents now being the property of the Chemical Foundation, the German manufacturer cannot export the drug to this country without infringing the patent ownership. The laboratories in the United States now manufacturing arsphenamin will enjoy this privilege for the duration of the patent, which on this particular drug extends to 1928. Royalties must, of course, be paid by them to the Chemical Foundation, which may, in its judgment, license additional laboratories to produce this compound and other similar compounds. As to new patents in the future, Germany will be protected as she was in the days before the war. The licensing of persons to furnish arsphenamin and neo-arsphenamin throughout the United States was in the beginning carried out by the Federal Trade Commission under regulations formulated by the United States Public Health Laboratories. It may be safely asserted that in no country in the world is the distribution of these products so thoroughly controlled and regulated as in the United States. Compounds must contain a definite percentage of arsenic within narrow limitations, and must pass rigorous toxicity tests in animals. In Germany the original product was tested by subcutaneous injections in mice. The laboratories referred to above have wisely substituted intravenous injections in rats.

Great credit is due to Dr. G. W. McCoy, director of the United States Public Health Laboratories, for the manner in which he has organized the scientific supervision over the arsenical products, and to Prof. Julius Stieglitz of the University of Chicago, who has acted as the government's expert on arsphenamin throughout the entire period of the war, and who has made many personal sacrifices in the interests of the country.

JAY FRANK SCHAMBERG, M.D., Philadelphia.

AMERICANIZATION OF THE MEDICAL PROFESSION

To the Editor:—Would not this be a propitious time for the various states to enact laws requiring full citizenship of all physicians, etc., who may hereafter apply for a license to practice? Educational institutions should be open to all, irrespective of nationality or citizenship, but medical societies, clubs, and similar organizations might aid considerably in the work of Americanization were they to require citizenship as an essential qualification for membership. Honorary memberships could be extended to nonresident foreigners of eminence.

WILLIAM H. HOLMES, M.D., Chicago.

"A MODIFIED TECHNIC IN OPERATION FOR OBLIQUE INGUINAL HERNIA"

To the Editor:—I have read, with no little interest, Dr. Angwin's article (*THE JOURNAL*, Feb. 14, 1920, p. 437) on the subject of a modified technic in the operation for oblique inguinal hernia. Having served at the Naval Hospital at Great Lakes during Dr. Angwin's duty there, I had a chance to observe some of his methods of both herniotomy and varicocele operations, both of which vary somewhat from the classical. One of the main advantages in his technic in herniotomy, which is not emphasized in the article, is the lessening of traumatism to the cord structures. This small factor not only relieves the patient of postoperative distress, but also lessens the dangers to the veins and vas in the cord.

On the other hand, the principle of anchoring the peritoneum to a structure outside the abdomen, however strong, does not appear desirable. Intra-abdominal structures resemble the caged lion, continually moving about seeking a weak place in the cage. To anchor the peritoneum, at or

very near the point of a previous hernia, necessarily leaves a predisposing point for subsequent trouble. Closure of the clean peritoneum will, I think, give the best results when not securely anchored, but allowed to heal as it is normally found, free, movable and smooth.

B. V. McCLANAHAN, M.D., Galesburg, Ill.

"COMMERCIAL DOMINATION OF BIOLOGIC THERAPEUTICS"

To the Editor:—I wish to express appreciation of your editorial on the "Effects of Quinin on the Tissues," in *THE JOURNAL*, February 14, and to congratulate you on the splendid article on "Commercial Domination of Biologic Therapeutics," in Current Comment in the same issue. The latter subject is a suitable one for an editorial, in which you should place the matter even stronger than you did in this article. In fact, I think this subject is one that justifies repeated editorials from time to time.

C. C. BASS, M.D., New Orleans.

RESPIRATORY SOUNDS HEARD ON THE HEAD

To the Editor:—Apropos of the letter of Dr. Myerson in *THE JOURNAL*, Feb. 14, 1920, regarding respiratory sounds heard on the head, I should like to call attention to the difference in degree of sound transmission between a healthy and a diseased mastoid. Both the respiratory sounds and sound such as that produced by tapping on the central incisors are transmitted better to a bell stethoscope on the diseased side. In mastoiditis this fact becomes of diagnostic importance.

ARTHUR C. JACOBSON, M.D., Brooklyn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PHYSICIANS AND THE PROHIBITION LAW

To the Editor:—Please advise me whether or not it will be necessary for me to execute a bond for \$1,000 to the federal government in order to get a permit to purchase 6 quarts of whisky to be used in emergency cases that may occur in my regular practice during any one year, the whisky to be furnished with no charge whatsoever. I have been told that the bond is necessary, but I do not so understand from the article on "The Physician and the Prohibition Law" (*THE JOURNAL*, Jan. 31, 1920, p. 342).

G. P. ZIRKLE, M.D., Kingston, Tenn.

ANSWER.—Treasury Decision 2940, issued Nov. 6, 1919, provided that all persons holding permits to purchase whisky or alcohol must give bond to the minimum amount of \$1,000. Internal Revenue Regulations 60, issued late in January, 1920, superseded previous regulations and modified this rule by providing, as stated in the article mentioned, that unless otherwise required by the commissioner, bonds need not be filed by physicians, dentists or veterinarians. This means that except in special cases in which the commissioner may see fit to require a bond, physicians do not need to file a bond to secure a permit.

VACCINATION WITHOUT SCAR

To the Editor:—Please describe the technic of vaccination without scar, referred to in *THE JOURNAL*, Jan. 24, 1920. What is the best variety of vaccine to use, how is it diluted, what is the size of the dose, is it given endermically or hypodermically, and how far should the needle be introduced? In children should the site of injection be anesthetized with a toothpick dipped in pure phenol?

HENRY F. HOYT, M.D., Long Beach, Calif.

ANSWER.—The subcutaneous method of vaccination was described by J. R. Goodall (*Am. J. M. Sc.* 158:721 [Nov.] 1919), who employs the following technic: Vaccine put up in capillary tubes is used. These are put in denatured alcohol for a few minutes, then dried with aseptic absorbent cotton,

the ends broken off, and the vaccine blown into a beaker by means of a sterile rubber bulb fixed to the end of the tube. From one half to three quarters of a tube of vaccine is allowed for each person, and sufficient sterile water is added to make the individual injection 1 c.c. The arm is sterilized with iodine and the vaccine injected with a fine hypodermic needle and syringe diagonally into the subcutaneous tissues. In a few cases in which the injection was made intradermically, the typical reactions of ordinary vaccination developed without complications. In the others the local reaction was much like that after antityphoid inoculation and usually set in between the second and fourth days, but in a few cases was considerably delayed even for from twelve to fifteen days. Everything should be done with surgical cleanliness, and the needle should be changed for each injection. Children undergo hypodermic vaccination without any difficulty by this comparatively painless procedure. If only one or two persons are to be vaccinated, the vaccine may be prepared as for ordinary hypodermic injection. It should be understood that the method is not yet generally accepted.

"PROCAIN"—BOOKS ON GONORRHEA—SYPHILIS—MALARIA

To the Editor:—1. What is the difference between novocain and procain?

2. Which is the least toxic?
3. What percentage of each should be used on all parts of the body with the exception of the gums?
4. What percentage is safe for extraction of teeth?
5. What is the maximum amount in grains or fractions that is safe for use in one operation?
6. Please refer me to a good book on (a) the treatment of syphilis of all types; (b) the treatment of gonorrhea and its sequelae; (c) malaria and its treatment.

I note what THE JOURNAL has to say about apothesine. I am glad that there is such a publication to speak out boldly against all pretenses.

W. B. PALMER, M.D., Furman, Ala.

ANSWER.—1. None. The term "procain" was adopted by the Federal Trade Commission and the Council on Pharmacy and Chemistry for use in place of novocain, which is the trade name for this product used by a single firm. "Procaine" is the term used by the American firms which have been licensed by the Federal Trade Commission to manufacture the drug.

2. See Answer 1.

3. According to New and Nonofficial Remedies, for infiltration anesthesia, solutions of 0.25 gm (4 grains) of procain in 100 or 50 c.c. (3.2 or 1.6 ounces) of physiologic sodium chlorid solution, with 0.3 or 0.6 c.c. (5 or 10 minims) of epinephrin solution (1:1,000); for instillations and injections, solutions of 0.1 gm. (1½ grains) procain in 10 or 5 c.c. (16 or 8 minims) physiologic sodium chlorid solution (1:1,000); in ophthalmology, 1 to 5 to 10 per cent. solution; in rhinolaryngology, 5 to 20 per cent. solutions are recommended, with the addition of 0.4 to 0.5 c.c. (6 to 8 minims) of epinephrin solution (1:1,000) to each cubic centimeter (16 minims).

4. See Answer 3.

5. Internally, owing to its feeble toxicity, it may be given in doses up to 8 grains. It might therefore be said that this is the maximum amount to be used in any operation.

6. (a) Thompson, Loyd: Syphilis, Philadelphia, Lea & Febiger, 1916, \$4.25.

White and Martin's Genito-Urinary Surgery and Venereal Diseases, Ed. 10, Philadelphia, J. P. Lippincott Company, 1917.

Hayden, J. R.: Venereal Diseases, Philadelphia, Lea & Febiger, 1916.

Manual of Treatment of the Venereal Diseases, published by the American Medical Association, price 25 cents.

(b) Lumb, N. P. L.: The Systematic Treatment of Gonorrhea, Philadelphia, Lea & Febiger, 1918.

Luys, Georges: A Text-Book on Gonorrhea and Its Treatment, translated from the French by Arthur Foerster, New York: William Wood & Co., 1913, \$6.

(c) Craig, C. F.: The Malarial Fevers, New York: William Wood & Co., 1909.

Deaderick, W. H.: A Practical Study of Malaria, Philadelphia: W. B. Saunders Company, 1909, \$4.50.

TSCHERNING

To the Editor:—I notice in Queries and Minor Notes (THE JOURNAL, Sept. 20, 1919, p. 930) an inquiry for biographic data concerning Dr. H. E. Tscherning.

Dr. Tscherning is at present, and has been for the last few years, professor of ophthalmology in the University of Copenhagen, and chief of the department of eye diseases in Copenhagen.

S. N. VENDEL, M.D., Brønderslev, Denmark.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

- ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.
- ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
- COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
- CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
- DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.
- FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
- IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
- ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.
- IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
- MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
- MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
- MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Loury Bldg., St. Paul.
- MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
- NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
- OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
- RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
- WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Washington July Examination

Dr. C. N. Suttner, secretary of the Washington Board of Medical Examiners, reports the written examination held at Seattle, July 1-4, 1919. The examination covered 13 subjects and included 143 questions. An average of 60 per cent. in each subject was required to pass. Of the 35 candidates who took the physician's and surgeon's examination, 34, including 2 osteopaths, passed, and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
College of Medical Evangelists	(1917)	1
George Washington University	(1912)	1
Bennett College of Eclectic Medicine and Surgery	(1897)	1
College of Phys. and Surgs., Chicago	(1903), (1910)	2
Loyola University	(1919)	1
Rush Medical College	(1878)	1
Baltimore Medical College	(1891)	1
Johns Hopkins University	(1913)	1
Harvard University	(1915)	1
Barnes Medical College	(1911)	1
Kansas City Medical College	(1901)	1
Kansas City University of Phys. and Surgs.	(1919, 2)	2
John A. Creighton Medical College	(1919)	1
Ohio-Miami Medical College	(1911)	1
University of Oregon	(1914), (1918), (1919)	3
Jefferson Medical College	(1918), (1919, 3)	4
University of Pennsylvania	(1892), (1916), (1918, 3)	5
Meharry Medical College	(1915)	1
McGill University	(1891), (1905)	2
Chiba Special Medical School	(1917)*	1

FAILED

University of Louisville	(1912)	1
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* Graduation not verified.

District of Columbia October Examination

Dr. Edgar P. Copeland, secretary of the District of Columbia Board of Medical Supervisors, reports the oral and written examination held at Washington, Oct. 14-16, 1919. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 21 passed and 2 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	(1919) 83.7, 84.5, 86.6, 87.1, 87.5, 87.6.		
George Washington University	(1917) 75.8, 83.6, 84.7, (1919) 82.8,		86
Howard University	.....(1918) 76.3, (1919)		79.1
Johns Hopkins University	.....(1913) 86.5, (1918)		85.6
University of Maryland	.....(1917)		76.6
Harvard University	.....(1919)		88.2
Columbia University	.....(1914)		87.6

Cornell University	(1917)	91.1
Med. Coll. of the State of South Carolina	(1917)	77.2
Dalhousie University	(1916)	85

FAILED

Coll. of Med. and Surg. (Physio-Medical) Chicago....	(1911)	58.6
Columbus Medical College	(1884)	66.2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University		(1904)	Maryland
Baltimore Medical College		(1906)	Maryland
Tufts College Medical School		(1905)	Maine
Ensworth Medical College		(1912)	Missouri
University of Nebraska		(1904)	Nebraska
Temple University		(1913)	Penn.
Medical College of Virginia		(1916)	Virginia
University of Aberdeen		(1901)	Virginia

Medicolegal

Sufficiency of Evidence of Typhoid Fever from Drinking Contaminated Water

(*Stubbs v. City of Rochester (N. Y.), 124 N. E. R. 137*)

The Court of Appeals of New York says that this action was brought by the plaintiff to recover damages alleged to have been sustained by him as the result of drinking contaminated water from the defendant's domestic service, in 1910. The trial resulted in a judgment for the defendant, which was affirmed by the appellate division of the supreme court, but that is here reversed, and a new trial granted, by this court, divided four to three. The important question in the case was, Did the plaintiff produce evidence from which inference might reasonably be drawn that the cause of illness was due to the use of contaminated water furnished by the defendant? Counsel for the defendant argued that, even assuming that the city might be held liable to the plaintiff for damages caused by its negligence in furnishing contaminated water for drinking purposes: (a) The evidence adduced by the plaintiff failed to disclose that he contracted typhoid fever by drinking contaminated water; (b) it was incumbent on him to establish that his illness was not due to any other cause to which typhoid fever might be attributed for which the defendant was not liable. Counsel asserted that there was a failure of proof on the part of the plaintiff, in that he did not establish that he contracted disease by drinking contaminated water, and in support of his argument cited a rule of law that when there are several possible causes of injury for one or more of which a defendant is not responsible, the plaintiff cannot recover without proving that the injury was sustained wholly or in part by a cause for which the defendant was responsible. If the argument should prevail, and the rule of law stated is not subject to any limitation, this case would illustrate the impossibility of a recovery in any case based on like facts.

One cause of typhoid fever was stated to be "personal contact with typhoid carriers or other persons suffering with the disease, whereby bacilli are received and accidentally transferred by the hands or some other portion of the person or clothes to the mouth." Concededly, a person is affected with typhoid some weeks before the disease develops. The plaintiff here resided three miles from his place of employment, and traveled to and from his work on the street car. To prove the time when he was attacked with typhoid, then find every individual who traveled on the same car with him, and establish by each one of them that he or she was free from the disease even to his or her clothing would be impossible. Again, the evidence disclosed that typhoid fever is caused by sources unknown to medical science. If the word of the rule stated were to prevail, the plaintiff would be required to eliminate sources which have not yet been determined or ascertained. This court does not believe the rule stated to be as inflexible as claimed for it. If two or more possible causes exist, for only one of which a defendant may be liable, and a party injured establishes facts from which it can be said with reasonable certainty that the direct cause of the injury was the one for which the defendant was liable, the party has complied with the spirit of the rule.

The plaintiff was employed in the immediate locality where the water was contaminated. He drank the water daily. The consumption of contaminated water is a very frequent cause of typhoid fever. In the locality there were a large number of cases of typhoid fever, and near to sixty persons who drank the water and had suffered from typhoid fever in that neighborhood appeared as witnesses on behalf of the plaintiff. The plaintiff gave evidence of his habits, his home surroundings, and his method of living, and the medical testimony indicated that his illness was caused by drinking contaminated water. Without reiteration of the facts disclosed on the trial, the court does not believe that the case on the part of the plaintiff was so lacking in proof as matter of law that his complaint should be dismissed. On the contrary, the most favorable inferences deducible from the evidence for the plaintiff were such as would justify a submission of the facts to a jury as to the reasonable inferences to be drawn therefrom, and a verdict rendered thereon for either party would rest, not in conjecture, but on reasonable possibilities

Unconstitutional Exemption Law Relative to Physicians' Bill

(*O'Leary v. Croghan (S. D.), 173 N. W. R. 844*)

The Supreme Court of South Dakota, without explaining the special nature of this case, says that the only question presented for determination on this appeal was the constitutionality of Chapter 150, Laws of 1911, which reads:

Nothing in this chapter shall be so construed as to exempt any personal property from mesne or final process for laborers' or mechanics' wages or physicians' bills, or for the necessities of life, including only food, clothing and fuel, provided for the debtor or his family, except property absolutely exempt Provided, that in case of physicians' bills or for necessities of life, there shall also be exempt household and kitchen furniture, including stoves, of the debtor, to an amount in value not exceeding \$400, and also two cows: provided, however, that the collection of physicians' bills shall not be enforced by legal process in less than six months from the accruing thereof except when the debtor is about to remove from the state.

Stated somewhat differently, under the provisions of this chapter, the amount of a debtor's exemptions depends on the nature of his debts. As against certain classes of claims he may not be allowed any exemptions at all, except such as are denominated as absolute exemptions, while as against other claims he may be allowed additional exemptions to the extent of \$750 worth of personal property, as provided by Section 2659, or the alternative exemptions enumerated in Section 2660, of the code. A corresponding discrimination is made as between different classes of creditors. A laborer or mechanic may satisfy his claim for wages out of any property of the debtor, except that made absolutely exempt, and may have immediate execution. A physician and one who has supplied the debtor with the necessities of life must leave the debtor \$400 worth of household and kitchen furniture, including stoves, and also two cows, in addition to his absolute exemptions; and the creditor who furnished the necessities of life may have immediate execution; but a physician cannot have execution until six months after accruing of his claim.

None of these discriminations are authorized by Section 4 of Article 21 of the state constitution, which provides that:

The right of the debtor to enjoy the comforts and necessities of life shall be recognized by wholesome laws exempting from forced sale a homestead, . . . and a reasonable amount of personal property, the kind and value of which shall be fixed by general laws.

On the contrary, such discriminations are expressly prohibited by the provisions of Section 18, Article 6, that "no law shall be passed granting to any citizen, class of citizens or corporation, privileges or immunities which upon the same terms shall not equally belong to all citizens or corporations. The discriminations that have been attempted by the legislature may be wise and in the interest of the public at large, but until the constitution has been changed the legislature is without authority to make them. The court is satisfied that, in enacting Chapter 150, Laws of 1911, the legislature exceeded its constitutional power, and that said law is void.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Urological Association, New York, March 23-25.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.

THE CHICAGO SOCIETY OF INTERNAL MEDICINE

Thirty-First Regular Meeting, Held Feb. 23, 1920

The President, DR. JOSEPH A. CAPPS, in the Chair

The Bacteriology of Epidemic Influenza

DRS. JAMES C. SMALL and FRED STANGL: *Bacillus influenzae* was found in 100 per cent. of our cases studied in our first series; pneumococcus Type I, none; Type II, one; Type II atypical, five; Type III, one; Type IV, nine; total positive for pneumococcus, sixteen, or 72.7 per cent. Hemolytic streptococci were found in two instances, or 9.1 per cent.

A second group comprises forty-five cases of acute influenza which were studied by the throat and sputum cultures only. These cultures were made on brown blood agar, and no attempt was made to identify organisms other than *B. influenzae*. This organism was obtained in forty-three of these cases, or 95.5 per cent. Six of this number had throat cultures only. The two cases negative for *B. influenzae* were in this group of six.

Among thirty controls, *B. influenzae* was demonstrated twenty-one times, or 70 per cent. The relative high incidence of *B. influenzae* in this group is comparable to the findings during the pandemic of 1918, and may be regarded as illustrating the wide dissemination of these organisms during epidemic periods.

In a second series, twenty-six patients in the tuberculosis hospital were studied. These patients were hospitalized before the epidemic. *B. influenzae* was found in nine instances, or 34.6 per cent. The findings in this group may be regarded as comparable to the incidence of *B. influenzae* during interepidemic times.

A group of thirty-two cases studied presents the bacteriology of the pneumonia of influenza, as it occurred among cases chosen at intervals throughout the course of the epidemic. The results of this study have been: Pneumococcus Type I, two; Type II, one; Type II atypical, six; Type III, five; Type IV, thirteen; total, twenty-seven, or 84.4 per cent. Hemolytic streptococci with pneumococci, one instance; with no pneumococci, five; total six, or 18.7 per cent. *B. influenzae*, twenty-four instances, or 75 per cent.

Those types of pneumococci occurring in the mouths of normal persons were found in practically 90 per cent. of the pneumococcus pneumonia of this group. The parasitic types I and II occurred infrequently: Type I only twice, and Type II once. These findings are in accord with those reported for the pneumonia of 1918. The hemolytic streptococcus occurred in approximately a fifth of the cases. It should be emphasized that in cases studied early in the epidemic this organism was not found. All instances in this group in which hemolytic streptococci were found appeared among the cases studied within the latter half of the period.

Ward surveys for hemolytic streptococci were made on three occasions at about ten-day intervals in several of the wards. These surveys were instituted to determine the

hemolytic streptococcus situation in the wards rather than to follow the bacteriology of individual patients. The sheet cubicle system and a definite plan for preventing contact infections within these wards was practiced.

One of the wards had a high incidence of hemolytic streptococci at the time of the first survey. Isolation of patients carrying hemolytic streptococci did not prevent its further dissemination within this ward, and on the third survey twelve of twenty-two patients, or 54.4 per cent., had hemolytic streptococci in their throats. Four empyemas (all due to hemolytic streptococci) developed in this ward. Some cases of otitis media and one case of frontal sinusitis also developed in this ward. The bacteriology of these was not determined.

The other ward had an incidence of hemolytic streptococcus carriers of 16.7 per cent. on the first survey. Ten days later, on the second survey, it had only 3.3 per cent. On a third survey, only four patients remained in this ward, and two of these were positive. Two empyemas appeared in this ward, neither due to the hemolytic streptococcus. Several cases of otitis developed here also, of undetermined bacteriology.

These studies are too incomplete to enable one to draw conclusions, but it is a striking circumstance that, in the ward in which hemolytic streptococci were most prevalent, only hemolytic streptococcus empyemas developed, while in the other ward, no hemolytic streptococcus empyemas developed.

Observations on Green-Producing Cocci of Influenza

DR. RUTH TUNNICLIFF: During the recent influenza epidemic the majority of observers have isolated green-producing diplococci from the sputum and from material obtained at necropsy. The organisms were generally classed as Type IV pneumococci on account of their being soluble in bile and not agglutinated by pneumococcus serums. Pneumococci of Types II, III and more rarely I were isolated also. *Streptococcus viridans* and nonhemolytic streptococci were isolated by Keegan, Nuzum, Blanton and Irons, and others; but the colonies were not described, so that it is not possible to identify them with the other strains of streptococci. Other workers, notably Mathers, MacDonald, Rosenow, Howel, Anderson and Jordan, isolated a peculiar green-producing streptococcus from the nasopharynx, sputum, blood and necropsy material. This streptococcus was isolated by the late Capt. George Mathers at Camp Meade at the very onset of the epidemic at the camp and during the first and second days of the disease. He isolated this streptococcus from the sputum in 87 per cent. of the 110 cases of influenza and the complicating bronchopneumonias. The Pfeiffer bacillus was isolated also in 58 per cent. of these cultures. The coccus was cultivated from necropsy material in the six cases examined, the Pfeiffer bacillus from five.

I made immunity experiments with the Mathers coccus to determine its relation to influenza and the complicating pneumonia. The serum was examined for opsonins, as this antibody is usually easily demonstrated in streptococcus infections. The serum of patients with acute influenza was examined daily for its opsonic power. On the first day of the disease the opsonic content was low. On the second or third day it rose well above normal, remaining high a day or two.

Severe cases of bronchopneumonia following influenza were also examined. The serum showed little or no opsonins for the Mathers coccus. The negative phase in these influenzal pneumonias for this green-producing streptococcus is much more pronounced than is generally observed in other acute infectious diseases. The serum of the patients that recovered showed, as the symptoms subsided, a high opsonic content.

These changes in opsonins in influenza and influenzal pneumonia were specific for the Mathers coccus, no fluctuations being observed with the Pfeiffer bacillus, *B. influenzae*, *Micrococcus catarrhalis* or *Streptococcus hemolyticus*. Agglutination experiments with this streptococcus were negative.

It does not seem possible to determine definitely the etiologic relation of the Mathers coccus to influenza and its complications. At Camp Meade, Md., it was the prevailing organism during the onset and height of the epidemic. It was the micro-organism which appeared with the onset of influenza, Pfeiffer's bacillus having been present in the respiratory diseases for several weeks previous. In Chicago, Dr. Jordan found this coccus present in a few more cases than the Pfeiffer bacillus. When present, the coccus was always found in the early stages of the attack and was more closely associated with the pneumonia cases than the Pfeiffer bacillus. However, Dr. Jordan found the Mathers coccus present in colds and tonsillitis infections in about the same proportion of cases as influenza, while the Pfeiffer bacillus was here found less frequently.

My experiments, and later those of Rosenow, Howell and Anderson, show that the serum of convalescent influenza and influenzal pneumonia patients shows definite specific opsonins, agglutinins and complement fixation bodies for the Mathers coccus, which indicates that it played at least some part in the reaction in the epidemic and was of wider distribution than has been commonly recognized.

Evidence for and Against the Use of Vaccines in the Treatment of Influenza With and Without Pneumonia

DR. ERNEST E. IRONS: Before a remedy, whether prophylactic or curative, is recommended for general use, its powers and limitations should be well determined: (1) It should be of itself harmless, and should be of proved value; (2) if not altogether harmless, its value should be such that the advantages far outweigh the risk involved in its use; (3) if harmless of itself, it may still be dangerous in that it gives a false sense of security, and thereby prevents the institution of other more effective measures of prevention or cure. A common example of the latter type is the fumigating of a house while the resident, a carrier of the disease, goes at large. In estimating the value of vaccines in the prevention and cure of respiratory disease, several factors are commonly neglected:

1. Controls: No one today would accept a report on a Wassermann test unless he were assured that in making it, all necessary controls were used. In estimating the value of vaccines in groups of patients inoculated with them, it is not sufficient to base conclusions on impressions. Statistics, to be available for safe conclusions, should be based on large series of cases with like numbers of controls under identical conditions. This has not usually been the case in reports available in the literature; and when these are carefully examined the fallacy in the argument is usually recognizable.

2. Results of Animal Experiments: Animal experimentation, while fundamental and a necessary preliminary in biologic investigation, does not afford the final proof of value of a remedy for man. Because an immune serum for example contains demonstrable antibodies and will protect a mouse from fatal infection in a dose of 5 c.c., it does not follow that this serum will be effective in man in the same or even fivefold dose. In the same way, because the injection of a relatively large quantity of bacteria into animals produces demonstrable antibodies, it does not follow that the injection into man of an allowable amount of the same bacteria will afford protection against the corresponding organisms; nor is the amount of demonstrable response the same for all organisms. Even in the often quoted example of typhoid vaccination, the immunity is only relative, and though usually sufficient, fails when large numbers of bacilli are ingested.

During the recent periods of influenza epidemics, it has been proposed to prevent influenza by the inoculation of vaccines containing streptococci, pneumococci and the Pfeiffer bacillus, and this method has been widely practiced. The amount of vaccines used in this way is enormous—usually under circumstances which preclude the drawing of any scientific conclusions from results obtained. In the first place, the evidence that the Pfeiffer bacillus is the cause

of influenza is extremely weak. It is true, that in recent weeks it has been found quite constantly in respiratory infections in Chicago. This prevalence was noted last year in some localities in the East, and in still other Eastern communities the same workers using the same methods were unable to find this bacillus. The Pfeiffer bacillus has also been found for years in diseases which have nothing to do with influenza, and at times when clinical influenza was not present. It is evident that the Pfeiffer bacilli in the vaccine cannot, therefore, be expected to contribute anything specific to the supposed protection from influenza.

The question then may be asked whether on clinical grounds any protection is afforded. Among the few adequately controlled reports available is that of McCoy, who inoculated a portion of the inmates of an institution and subsequently found an incidence of influenza among them equal to that in a like number of uninoculated controls.

If vaccines as used failed to protect against influenza, did they protect against the later pneumonia? The organisms of the secondary pneumonias varied greatly in different parts of the country, and in the same community at different periods of the epidemic, and so a vaccine prepared for use in one community might not have any specific relation to the prevalent type in another. To argue the importance of some unknown nonspecific elements in vaccines and other proteins in the treatment of disease is to cast aside one of the most important guides in the study of immunity. So far as I have been able to find, there is no conclusive evidence that previous vaccination had any effect on the incidence of pneumonia following influenza.

Of the other factors that had an enormous effect on the incidence of pneumonia, early hospitalization was the most important in the army and in civil practice. Patients already in hospital, such as those in surgical wards, frequently contracted influenza, but rarely pneumonia. Nurses who remained on duty after the onset of influenza developed pneumonia in twice as many cases as did nurses who went to bed at the first symptoms.

As has been the practice in recent years, a variety of substances, such as peptones, vaccines, liquor formaldehydi and mercurial salts, were injected intravenously in patients suffering from pneumonia, usually without any attempt at comparison with control cases. Some of the discussions of events following the injections would be amusing if it were not for the serious import to the patients. When in an occasional case the chill and thready pulse resulting from the administration of the vaccine is followed by a permanent defervescence, the event is described with as much detail as if sudden defervescence were not of almost daily occurrence in other groups of pneumonias not under such treatment. The effect of these administrations in hastening the fatal issue is not usually discussed.

In view of the very doubtful efficacy of vaccines in prophylaxis of influenza and its subsequent pneumonia, it is believed that further popularization of this method of control of influenza is undesirable. The use of vaccines and other proteins intravenously is dangerous, as well as being of extremely doubtful value.

DISCUSSION

DR. E. O. JORDAN: My own work in regard to influenza is incomplete, and my opinions are somewhat unformed at the present time. As regards the Pfeiffer bacillus, we made some observations both in the 1918 epidemic and in the epidemic just passing. I got the impression in 1918 that there was undoubtedly a good deal of variation in the frequency of the finding of the Pfeiffer bacillus according to the group that was examined.

We had several groups under observation in our laboratory work and we found a good deal of difference both in the frequency of occurrence of the Pfeiffer bacillus in individual cases and as regards actual numbers of Pfeiffer bacilli in different cases. That observation has been confirmed by our findings in the present epidemic. The frequency of occurrence of the Pfeiffer bacillus in cases of acute respiratory infection is by no means very convincing as to the rôle this organism plays in the primary infection. I confess to

being very much impressed by the work done by Park's laboratory on the lack of unity in the different strains. In one case, for instance, he describes his findings with six strains isolated from six members of one family, all coming down with typical influenza at about the same time, and these six strains from six different members of the family were all different immunologically. The serum of one strain would not agglutinate any of the others. This observation has been confirmed independently by Fleming in England, and those who have worked with the agglutinated serums have found considerable diversity in the reactions obtained.

There are different kinds of Pfeiffer-like organisms in the throat, both in normal persons and in different kinds of respiratory infection, and it may be that we shall have to sort out the different kind of bacteria. I do not believe the criteria usually employed for the identification of the Pfeiffer bacillus are sufficient to permit us to place these organisms in one group. We have certainly different kinds of organisms that have gone under the name of Pfeiffer bacilli, and it will take some time to sort them out.

In the last twenty-five years quite a number of cases have been put on record of meningitis in which the Pfeiffer bacillus has been found in pure culture, and these cases have been regarded as due to this bacillus. If the Pfeiffer bacillus was the cause of meningitis in the 1918 epidemic, we might suppose there would be, in all events, some increase in the number of cases of meningitis due to the Pfeiffer bacillus; but there has not been anything of that sort. Again, attempts made to produce influenza in human beings with injections of pure cultures of Pfeiffer bacillus have been unsuccessful in the vast majority of cases.

A word about the very interesting organism Dr. Tunncliffe has described. In the 1918 epidemic we found the Mathers organism, which had an extraordinary degree of virulence. It killed mice and sometimes guinea-pigs more rapidly than any other bacteria I ever got out of the respiratory tract. We have been examining the flora of ordinary colds and have not found the Mathers cocci in these cases; so when the first case of influenza appeared last month we looked with great interest to see whether the Mathers coccus was present, and much to my surprise we did not find it. We have not found Mathers' cocci in anything like the number we did in 1918.

With reference to vaccination or vaccines, in connection with the commission, financed by the Metropolitan Life Insurance Company, on respiratory diseases, of which I am a member, some observations and experiments are being carried on at the present time with a mixed vaccine, and it is hoped that before long we shall be able to give you the results of the work of this commission.

DR. DAVID J. DAVIS: The work that has been going on in the last year or two emphasizes the fact that the hemophilic organisms and the so-called influenzal bacillus are very widely distributed. In normal individuals the percentage varies anywhere from 10 to 40 or 50 per cent., which means that one person out of every three, four or five normally harbors these bacteria, and this percentage persists in epidemic times as well as in interepidemic times, as shown by the work of Lord and a number of other investigators. This organism is more widely distributed and more frequently the cause in all sorts of respiratory diseases, both acute and chronic, than any other. We have known for a long time that the bacillus occurred in practically 100 per cent. of whooping cough cases, and these organisms are not more dangerous, although they are distinctly different. It occurs commonly in measles cases, in various kinds of pneumonias, in meningitis cases, meningococcic infections, and in bronchiectases, pulmonary tuberculosis, and so on; consequently, the mere fact of the occurrence of the organism in a high percentage of cases, taken by itself, is not a criterion of any great value in considering it as an organism of etiologic importance in connection with this disease or any other disease. Pfeiffer, for instance, nearly forty years ago found the organism known by his name in practically 100 per cent. of cases, yet in the last year or two in Germany they have had great difficulty in finding the organism in a small number of cases. Pfeiffer's early work was supported gen-

erally by German investigators, yet in the 1918 epidemic, generally speaking, these German investigators had not been able to find the organism and had generally taken a stand against it as the cause of influenza.

As to the presence of hemolytic streptococci in the throat, I should like to call attention to the point that an error may creep in in making cultures from throats. Hemolytic streptococci are virtually constant in all throats in which tonsils are present. They can be found deep in crypts of the tonsils, and unless this fact is considered, reports of throat cultures in which hemolytic streptococci are found may be misinterpreted. These organisms are developing in the crypts from time to time and are passing out into the throat. They are quite virulent for animals, and they are obtained from empyema cases or from the blood in fatal cases.

DR. A. M. MOODY: I had occasion to examine material from many cases of influenza in France during the epidemic of 1918. The first cases occurred the latter part of August, 1918. It was impossible to differentiate those cases clinically from the cases we saw later. We made a bacteriologic examination of the material from the lungs, trachea, bronchi and sputum, and in nearly every case we found hemolytic streptococci in pure culture. About the middle of September the bacteriologic findings seemed to change and we began to find more influenza bacilli and green-producing streptococci similar to the organism described by Dr. Tunncliffe. In the first part of October we began to get patients from the states. During the epidemic we found more and more influenza bacilli. In November we found a mixture of all sorts of organisms, particularly influenza bacilli, and streptococci in the fatal cases. In the fatal cases we found large numbers of streptococci in the alveoli, so that none of these organisms can be put down as the cause of the disease. I do not believe we are any nearer the solution of the cause of the disease today than we were quite a while ago.

DR. JOSEPH A. CAPPS: In visiting the different base hospitals in France it was interesting to see the difference of opinion among bacteriologists as to the different organisms they found. In a group of hospitals having the same type of cases clinically one bacteriologist would find influenza bacilli, another pneumococci, and another streptococci. There were many places in which influenza bacilli were not found, and it was thought by some of the chief surgeons that the bacteriologists did not know how to find them; yet many of these bacteriologists were experts, and the reason they did not find influenza bacilli more frequently was that they were not there.

Does one attack of influenza confer immunity? I have seen several cases recently which lead me to believe that it does not. One patient in particular had leukopenia, respiratory symptoms, great prostration, and other symptoms associated with influenza, and recovered. This patient went to Florida and again developed a fresh attack. Another patient, after having recovered from the primary attack of influenza, went to California, and several weeks after the first attack had a second one. I presume that one can say this was a recurrence or perhaps a relapse, such as we have in typhoid fever cases.

DR. THEODORE TIEKEN: I have a strong conviction that vaccines are absolutely useless. I find that practitioners are using them for both prophylactic and curative purposes. They are using two or three different varieties of vaccines in the same cases so as to have what they call a polyvalent vaccine. In a town in an adjoining state I found one practitioner who was using Sherman's, Parke, Davis & Company's and Mulford's vaccines in the same case. When this patient developed pneumonia he switched to No. 38 or to No. 36. By the time I got there the patient developed marked tympanites and diarrhea, so that the practitioner had a colon vaccine ready to use. This is merely an example of what is going on and as showing the indiscriminate use of vaccines.

DR. ELLIS KIRK KERR: In connection with immunity, we were struck by the epidemic, Sept. 20, 1918, which ran for about six weeks. During that time we had about 6,000

cases of influenza in our camp of 35,000 or 40,000 men. About two days before the armistice, a troop movement started from the rural districts in Minnesota. The men were collected in Minneapolis and sent to Chattanooga. The men who were attacked with influenza were dropped off the train at different places. They had the same type of influenza that was prevailing in the camps. While the original epidemic was on, the ward attendants, nurses and physicians were coming down with the disease in the same proportion as the men in the camps. When this batch of men came in from Minnesota there was practically no extension of the disease. This group was isolated in camp, and the very ill patients were sent to the hospital, but there was practically no spread in the hospital from this group of cases. It would seem as if the disease had gone through the camp and picked out all the susceptible men.

DR. BERNARD FANTUS: Last year I had quite a number of patients who, two or three months after the primary attack, developed another attack. In the meantime, they had been entirely well. I have had a few patients that have developed a third attack about two months after the second attack. I think all practitioners have noticed the fact that in this year's epidemic many individuals were taken sick who were sick with influenza last year. Again, some patients who had severe attacks last year have had mild attacks this year, and vice versa.

So far as the vaccine treatment is concerned, vaccines cannot be of great value because we do not know what particular organisms are concerned in the causation of the disease.

Miscellany

PROCESS OF CANNING RIPE OLIVES

Because of the number of cases of botulism lately reported after the eating of canned ripe olives, there is naturally some speculation as to the processes involved in preserving this fruit. From a recent summary (*Am. Food J.* 15:26 [Feb.] 1920) it is learned that while practices vary slightly certain procedures have been generally adopted by olive packers. The fruit is permitted to ripen on the trees, care being exercised to start picking before the olives are overripe. After the olives have been gathered by hand, they are transported to the packing plant, there first to be sorted by sizes, then put through repeated washings and conditionings for variable periods depending on the quality and condition of the fruit, the seasonal temperature and the technical details in vogue at the particular plant. In some plants the olives are kept in agitation during these procedures by means of the ordinary hand paddle, while compressed air jets serve the same purpose under more modern practices. The olives are first immersed in clear water in cement or wooden vats for two or three weeks, in order to prepare the skins for the subsequent steps in the process. They are then subjected for from eight to twelve hours to the action of a solution of caustic soda, 2½ ounces to the gallon of water. After exposure to the air until their coloring is uniform, the olives are again immersed in a solution of caustic soda, 1¼ ounce to the gallon of water, for a period of from eight to twelve hours. The second caustic treatment is to abstract the bitter properties of the fruit and is followed by washing in clear water until all traces of the lye have been removed. The olives are next immersed for one or two days in a brine solution testing 9 or 10 points on the salometer, after which they are deposited in bins in the canning room. Women operators then pack them in cans, rejecting at this time all imperfect or soft fruit. The cans are filled with brine testing about 12 points on the salometer at a temperature of 175-180 F. and are subjected to an exhaust process of 185 F. before sealing. The fruit is next cooked at 224 F. for from twelve to thirty minutes depending on the size of the containers, and is permitted to cool naturally. No effort is made by any of the canners to control accurately the temperature of the solutions in the various processes.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

Jan. 15, 1920, 26, No. 3

- *Origin, Growth and Fate of Osteoclasts and their Relation to Bone Resorption. L. A. Arey, Chicago.—p. 315.
Glandular Cells of Frogs Pancreas. S. Saguchi, Kanazawa, Japan.—p. 347.
Course of Wolffian Tubules in Mammalian Embryos. F. T. Lewis, Boston.—p. 423.
*Histologic Study of Spleen of Rabbit Under Heightened Phagocytic Activity. W. H. F. Addison, Philadelphia.—p. 437.

Nature of Osteoclasts.—The observations recorded by Arey were made on developing membrane bone of human and pig embryos. He concludes that the multinucleated giant cells known as "osteoclasts" probably include several morphologically similar but developmentally distinct elements. In the earliest stages of bone development, and to a certain extent in later stages, osteoclasts apparently arise from the confluence of the mesenchymal cells and connective tissue of the marrow. The chief source of osteoclasts, however, is from old osteoblasts and bone cells. Depleted, basophilic osteoblasts coalesce to form multinucleate masses. These syncytial elements become typical osteoclasts when their cytoplasm assumes an oxyphilic stainability. All intermediate tinctorial stages are demonstrable. True oxyphilic osteoclasts also exist in cytoplasmic continuity with basophilic osteoblasts. Increase in size and nuclear content results from the engulfing of osteoblasts met in the path of resorption and from bone cells which are ingested as the bone matrix is resorbed. Osteoclasts undergo retrograde changes and ultimately disappear through extreme degeneration. Only indirect and insufficient evidence points to the osteoclasts as the active, specific agents of bone resorption. That they are merely degenerating, fused osteoblasts, in Arey's opinion accords better with the known facts.

Spleen and Phagocytic Activity.—The cycle of changes associated with the phagocytic activity of the splenocytes of the rabbit was followed by Addison. He noted that when washed pigeon corpuscles are injected intravenously, they are rapidly hemolyzed. The hemolysis of the pigeon blood results in the liberation of great numbers of bone marrow cells, mature and immature. These are caught within the spleen, and quickly begin to be ingested by the splenocytes. The splenocytes grow with their increased contents, until at the sixteen hour stage they reach a very large size. As many as twenty cells are visible in a 4 microns section of a splenocyte, measuring 55 by 23.4 microns. As digestion proceeds, the splenocytes become smaller, and at the forty-eight hour stage they are much reduced in sizes some being not much larger than normal. Of the products of hemolysis of the pigeon blood after a single injection, little remains within sixteen hours. In the spleen, the splenocytes have an increased amount of iron containing substances, while the endothelial cells show, for the most part, very little. The comparatively small results seen within the phagocytic cells follow from the rapid reduction of the foreign blood corpuscles to particles of a very small size, and from the short time in which these fragments remain within the blood stream. In this special experimental procedure, where cells and cell fragments are the stimulus to phagocytosis, the splenocytes are the first to act, and they continue to act as the main phagocytic agents.

American Journal of Ophthalmology, Chicago

January, 1920, 3, No. 1

- Syphilitic Neuroretinitis. H. V. Wuerdemann, Seattle.—p. 1.
Test Objections for Illiterate. A. E. Ewing, St. Louis.—p. 5.
Venesection as Preventive for Explosive Hemorrhage. E. E. Maddox, Bournemouth, England.—p. 23.
Experiments on Eye with Gas Mantles of Different Compositions. C. E. Ferree and G. Rand, Bryn Mawr College.—p. 24.
Rôle of Focal Infections in Sympathetic Ophthalmia. C. T. Cooke, Seattle.—p. 33.

- Visual Defects of West Point Cadets. K. A. Phelps, Minneapolis.—p. 39.
 Cyclodialysis. H. S. Gradle, Chicago.—p. 41.
 Occlusion of Central Artery of Retina by Paracentesis of Cornea. L. W. Callan, New York City.—p. 48.
 Simple and Practical Tonometer. E. J. Brown, Minneapolis.—p. 48.
 New Perimetric Chart. A. Cowan, Philadelphia.—p. 49.
 Visual Disturbances from Damage to the Centers. G. A. Veasey, Spokane.—p. 51.
 Standardization of Ophthalmology and the Ethical Attitude of its Members. J. H. Burleson, San Antonio.—p. 52.

American Journal of Physiology, Baltimore

Jan. 1, 1920, 50, No. 4

- *Cardiovascular Reaction in Valsalva Experiment and in Lifting; Note on Parturition. P. M. Dawson and P. C. Hodges, Madison, Wis.—p. 481.
 Some Aspects of Neuromuscular Respiratory Mechanism in Chelonians. H. C. Coombs, New York.—p. 511.
 Protective Action of Some Organic Substances on Catalase in Acid Medium. M. Takeda, Tokyo.—p. 520.
 *Gastrin Studies. II. Distribution and Extraction of Gastrin Bodies. A. B. Luckhardt, R. W. Kecton, F. C. Koch and V. La Mer, Chicago.—p. 527.
 Physicochemical Studies on Bioluminescence. 1. Luciferine and Luciferine of Cypridina Hilgendorffii. S. Kanda, Fukuoka, Japan.—p. 544.
 Id. II. Production of Light by Cypridina Hilgendorffii is not an Oxidation. S. Kanda, Fukuoka, Japan.—p. 561.
 Preparation of Adenine Nucleotide by Hydrolysis of Yeast Nucleic Acid with Ammonia. A. Jones, Baltimore.—p. 574.
 *Changes in Hydrogen Ion Concentration of Urine, as Result of Work and Heat. G. A. Talbert, Baltimore.—p. 579.

Effect of Strain on Heart Rate and Blood Pressure.—

Dawson and Hodges report the results of their experiments to determine the immediate effect on the heart rate and blood pressures of exercises of strain. By "exercises of strain" is meant those muscular efforts which are performed with the glottis closed and which tend to compress the chest, thereby causing a rise in intrathoracic pressure. The two forms of strain studied were the Valsalva experiment and lifting. In the Valsalva experiment, the systolic pressure rose rapidly, primary rise. This was followed by an extensive fall. On cessation of the Valsalva effort there was a moderate rise of the systolic pressure. Lifting was characterized by changes in systolic blood pressure essentially similar to those which occurred in the Valsalva experiment. When the Valsalva or lift was modified, the usual picture was somewhat changed. The effect on the heart rate of greatly prolonging the Valsalva experiment was to decrease the intensity of the effort and with this the extent of the changes in the heart rate. When the Valsalva experiment experienced a series of interruptions, consisting of a single gasp each, the systolic blood pressure rose with each gasp from 10 to 20 mm. above normal. When a lifting experiment experienced similar interruptions, the changes of heart rate were less in extent than would otherwise occur even when the weight lifted was greater in amount. Observations were also made during parturition. During a labor pain in the anesthetized and tracheotomized rabbit, the mean blood pressure experienced changes (rise followed by fall) which are attributable to the changes in peripheral resistance due to uterine contraction and subsequent relaxation. The respiration also changed, decreasing in amplitude to a standstill in the inspiratory phase and then gradually returning to normal.

Cause of Gastric Secretion.—The existence of two classes of bodies causing gastric secretion is suggested by the authors. Whether these bodies are extractives from special tissues or hydrolytic cleavage products has not been determined. The investigation in the distribution of gastrin bodies has been temporarily abandoned for the more promising studies into the chemical nature of the product derived from the gastric mucosa.

Hydrogen Ion Concentration of Urine.—Talbert claims that intense exercise from fifteen to twenty minutes' duration increases the hydrogen ion concentration of the urine. A man subjected to the heat of a sweat cabinet for fifteen or twenty minutes will, in a large majority of cases, void a urine of higher hydrogen ion concentration. If muscular exercise follows immediately on subjection to heat, or vice versa, it is impossible to interpret the results.

Annals of Otology, Rhinology and Laryngology, St. Louis

September, 1919, 28, No. 3

- Otolaryngology in War. H. P. Mosher, Boston.—p. 673.
 Delayed Secondary Hemorrhage Complicating Tonsillectomy. V. Dabney, Washington.—p. 697.
 Otologic Work in U. S. A. General Hospital for Head Surgery. J. M. Ingersoll, Cleveland.—p. 700.
 Case of Brain Abscess Dependent on Empyema of Frontal Sinus. T. J. Harris, St. Louis.—p. 721.
 Experiences in Surgery of Thyroid. J. C. Beck, Chicago.—p. 728.
 Open Safety Pin in Trachea. R. McKinney, Memphis.—p. 777.
 Case of Chronic Bilateral Abductor Paralysis of Vocal Cords (Cricothyroideus Posticus) Result of Goiter Operation. A. W. Corwin, Chicago.—p. 781.
 Unusual Nasal Manifestation (Condyloma) of Syphilis. C. W. Richardson, Washington, D. C.—p. 786.
 Retrobulbar Neuritis from Posterior Accessory Sinus Disease: Report of Seventeen Cases. L. E. White, Boston.—p. 793.
 Tonsillectomy Under Local Anesthesia. G. B. Johnson, Franklin.—p. 819.
 Gangrene of Right Temporoparietal Lobe of Otic Origin; Extensive Excision of Lobe; Recovery. J. F. McCaw, Watertown.—p. 823.
 Case of Sarcoma of Pharynx. W. C. Bane, Denver.—p. 828.
 Digest of American and English Otologic Literature for the Year 1918. O. M. Rott, Spokane.—p. 831.
 Study of One Hundred Cases of Suspected Chronic Nasal Accessory Sinus Disease. Report of the X-Ray Findings. H. C. Ballenger, Chicago.—p. 894.

Boston Medical and Surgical Journal

Feb. 5, 1920, 182, No. 6

- Surgical Treatment of Peptic Ulcer. Report of Cases. P. E. Truesdale, Fall River, Mass.—p. 135.
 *Treatment of Back Injuries; Spinal Fractures That Are Not Associated with Cord Symptoms. H. W. Marshall, Boston.—p. 140.
 Some Incidents in the Life and Military Campaigns of Baron Larrey (1766-1843). W. P. Coues, Boston.—p. 146.
 Technic of Citrated Blood Transfusion. H. C. Marble, Boston.—p. 153.

Treatment of Back Injuries.—From the study of thirty cases of vertebral fractures without cord symptoms and from a much larger series of simple back strains, Marshall concludes that spinal bone grafts are suited best for well-to-do patients who will be considerably benefited by slight or moderate improvements in their physical conditions. Results of surgical methods are not beneficial enough uniformly, and chances of fair or excellent recoveries are so good in healthy young adults without operation, that spinal bone grafts are not warranted in the majority of workmen's cases. Spinal grafts reinforce the posterior group of spinal ligaments and usually strengthen spines, at least to slight degrees. There are some dangers that unavoidable injuries to muscles and ligaments which result from surgical procedures may weaken backs more than inlaid grafts strengthen them. Mechanical appliances are required very commonly for considerable periods of time even after successful grafts; and results of this combination are presumably better often than either single method of treatment alone. Slight degrees of bony fracture in healthy young subjects are fairly well recovered from without operation in six months or less at times; and severer grades of bony impactions occasionally are followed by complete restorations of back functions without operations several years after dates of injuries. Treatments of back injuries, perhaps, should be directed primarily toward restoring strengths in muscular and ligamentous tissues because these are phases of treatment which are usually overlooked and neglected; but pathologic conditions in crushed vertebrae should be appropriately treated by immobilization and protection in ways universally approved in treatment of fractures. Treatments of musculoligamentous defects should include use of various therapeutic agents, according to physiologic requirements of the tissues in question. There should be use of mechanical braces to reinforce muscles and to offset temporarily the extra mechanical strains due to faulty postures or anatomic deformities. Physical therapeutic agents, massage manipulations, and exercises should be employed as well as internal medical measures. The latter rectify vascular defects and influence muscles and ligaments through the qualities of circulating blood. Continuous exclusive use of any one of these methods is unjustifiable for very long periods, and they should be alternated and

combined with due regard to established physiologic principles of alternate rest and activity known to be best for muscles and ligaments.

Feb. 12, 1920, 182, No. 7

*Present Needs of Tuberculosis Campaign. J. B. Hawes, Boston.—p. 161.

*Diet Reduction with Retention of Protein to Relieve Glycosuria in Diabetes Mellitus. R. L. Fenlon, Iowa City.—p. 168.

Pathology of "Influenzal Pneumonia." F. P. McNamara, New Haven, Conn.—p. 171.

Possibilities of Carrel-Dakin Technic in Civil Life. A. G. Rice, Springfield.—p. 174.

*Treatment of Chronic Ulcers. F. E. Stowell, Worcester.—p. 176.

Case of Metacarpal Fracture. S. S. Dearborn, Nashua, N. H.—p. 178.

Present Needs of Tuberculosis Campaign.—Hawes does not believe that more laws in regard to tuberculosis are needed. Overzealousness on the part of local health boards, he says, has done harm to many patients and prejudiced their physicians strongly against reporting future cases. Education as to the need of reporting tuberculosis, on the one hand, and tact on the part of the local authorities, on the other, are what will solve this problem. Nor does he believe that antispitting laws accomplish much. Here again education as to habits of cleanliness and decent living and not more legislation is what is needed. The harm done by the careless spitter and the incorrigible consumptive, he says, is, after all, very slight. What has been accomplished in reducing the mortality from consumption during the past twenty-five years, and what shall be accomplished in the future is not because by means of sanatoriums a number of patients have been cured, nor because the spread of infection has been prevented by providing beds for advanced consumptives, but because the gospel of right living has been spread. It is what is being done to solve the tenement and housing problem; it is the school and factory inspection and hygiene; the prevention of industrial diseases; it is a pure milk and water supply, thereby eliminating typhoid and other acute infectious diseases; open air schools, boy scouts, health crusaders—it is all this, and not efforts directed solely to the tubercle bacillus or the tuberculous individual that is ridding the world of tuberculosis.

Diet Reduction with Retention of Protein to Relieve Glycosuria in Diabetes Mellitus.—The theories underlying the diet reduction method are outlined by Fenlon. By keeping the protein intake of the diet at a necessary level, the tendency to a development of acidosis is decreased as the patient does not have to burn his own body fats. Protein is needed to replace that lost by the wear and tear on the tissues during the metabolic changes of the body. Chittenden's standard of 0.12 gm. of nitrogen per kilogram of body weight is necessary to the body during a diet reduction. This amount of protein is increased in this method because of the altered metabolic changes in diabetes. With the protein intake maintained at a definite level the percentage of carbohydrate in the diet would be relatively decreased. Under preparatory treatment to fasting the protein and fat are both reduced, leaving the carbohydrates relatively high. The tolerance of the patient is more easily and quickly determined. There is less complaint of hunger on the part of the patient by this method of reducing diet. The protein in the diet, by maintaining the serum protein in the blood, possibly aids in the nutrition and functioning of the kidney during the diet reduction. Of fifteen patients treated according to this method, 100 per cent. were discharged sugar and ketone free.

Treatment of Chronic Ulcers.—After a preliminary washing of the ulcer with soapsuds, 1:2,000 mercuric chlorid and alcohol, as much dead material as possible is removed with forceps and the base of the ulcer is very gently curetted to remove slough and exudate. The ulcer is then cleaned again with alcohol and painted with a 50 per cent. tincture of iodine. The patient is then connected with the negative pole of the static machine, the positive pole being grounded, and the static breeze and sparks thoroughly applied to ulcer and surrounding areas. According to Stowell, this usually relieves all pain at the first treatment and can be so regulated as not to be unpleasant. The object of all this is to

remove stasis and stimulate healing. A dry dressing or, occasionally, in the judgment of the operator, a boric ointment dressing is applied and then the leg is bandaged. This Stowell considers is a most important part of the treatment and he says it must be done correctly. The method is described in detail.

Bulletin of Johns Hopkins Hospital, Baltimore

January, 1920, 31, No. 347

*Effect of Pyloric Obstruction in Relation to Gastric Tetany. W. G. MacCallum, J. Lintz, H. N. Vermilye, T. H. Leggett and E. Boas, Baltimore.—p. 1.

*Acute Cholecystitis in Children as a Complication of Typhoid Fever. M. R. Reid and J. C. Montgomery, Baltimore.—p. 7.

*Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia after Urethrosopic Infection of Ejaculatory Ducts with Thorium; New Diagnostic Method. H. H. Young and C. A. Waters, Baltimore.—p. 12.

*Self-Eventration of Large Abdominal Hygroma through Scalpel Prick of Peritoneum. W. S. Halsted, Baltimore.—p. 13.

*Upturned Edge of Liver Acutely Distended Emphyematous Gallbladders. W. S. Halsted, Baltimore.—p. 14.

*Fate of Bacteria Introduced into Upper Air Passages. A. L. Bloomfield, Baltimore.—p. 14.

*Case of Nonparasitic Hematochyluria. H. H. Hampton, Baltimore.—p. 20.

*Myoma of Uterus Showing Unusual Degenerative Changes. L. Brady, Baltimore.—p. 24.

Pyloric Obstruction and Gastric Tetany.—The authors point out that when the pylorus is obstructed and the gastric juice with its hydrochloric acid is constantly removed, there ensues a decrease in the chlorin of the plasma. There is a consequent increase in the alkali reserve which becomes extreme. The electrical excitability of the nerves is, in general, heightened and there are spontaneous twitchings and in most cases violent convulsions which lead to death. All of this can be prevented by constantly furnishing a large supply of chlorids. The authors injected from 50 to 100 c.c. of a 2 M (117 gm. in a liter) sodium chlorid solution intravenously. It is less easy to cure the condition by the administration of chlorids. The convulsive movements are not exactly like the twitchings of the tetany of parathyroidectomy in which they found no heightened alkali reserve, but they can be produced by the injection of sodium carbonate or bicarbonate. Since these convulsions can be stopped or prevented by sodium chlorid, it remains a problem as to what becomes of the excessive base sodium and as to the specific need of the chlorin ion. Further experiments are contemplated to settle these points.

Acute Cholecystitis Complicating Typhoid.—Reid and Montgomery report a case of a large typhoidal empyema of the gallbladder in a girl, aged 8 years, and review eighteen cases of typhoid fever in persons less than 15 years of age who either died from or who were operated on for complications arising in the gallbladder. The authors believe that the low operative mortality (only one of these patients died) justifies operation when there is grave doubt as to the nature of the condition of the gallbladder. Acute typhoidal suppurative cholecystitis should receive immediate surgical treatment, for in such cases rupture of the gallbladder may occur and thus lessen many times the chances of recovery. The best treatment is said to be cholecystectomy.

Roentgen-Ray Studies of Seminal Vesicles and Vasa Deferentia.—Young and Waters believe that they have demonstrated that catheterization of the ejaculatory ducts and radiographic study of the canal system above may be carried out with ease, and that it furnishes a ready and satisfactory method of determining the condition of these structures. The process is apparently without danger. In about fifty cases in which the instruments and thorium solution have been introduced for varying distances into the vasa deferentia and seminal vesicles, they have never encountered an epididymitis or any other deleterious sequels. The method is described in detail.

Self-Eventration of Large Abdominal Hygroma.—A child, 2 years old, was brought to Halsted to be tapped for ascites. The child's abdomen presented the typical ascitic picture. In making a short incision in the midline, the peritoneum

was accidentally pricked. Immediately there protruded through the prickhole a vesicle hardly larger than a mustard seed. The little bladder, slowly increasing in size, soon covered the abdomen, and finally in saddlebag fashion fell over the child's flanks, a broad, flat isthmus of sac-contained fluid stretching across the now scaphoid belly from one great bag of water to the other, both of these resting on the bed sheets. The wall of this great cyst was of filmy thinness. The midline incision was then lengthened and a search made for the pedicle, about which several small cysts were found to be grouped. All of these seemed to have their origin in the great omentum—embryologically, in the posterior mesogastrium. An independent cyst, about as large as an orange, seemed to be contained between the layers of the duodenal mesentery, the continuation of the stomach's mesentery or posterior mesogastrium. This cyst was so adherent to the mesenteric vessels that Halsted feared its removal might imperil the circulation of the bowel; hence he stitched its wall to the parietal peritoneum, and in a few days opened and drained it. The child made a prompt recovery. Twenty-two years later, examination of the abdomen revealed nothing abnormal, except, perhaps, a little tenderness in the region of the appendix.

Upturned Edge of Liver in Gallbladder Infections.—Halsted regards this as a diagnostic sign of some value. He has never noted this upturned or everted edge in the absence of signs of infection of the gallbladder, but is not sure that it may not occur with hydrops vesicae. More than once this sign has enabled Halsted in a debatable case to make the correct diagnosis.

Fate of Bacteria in Upper Air Passages.—Bloomfield found that *B. coli* and *Staphylococcus albus* swabbed on the tongue or nasal septum usually disappeared within twenty-four hours. *B. coli* and *S. albus*, introduced into tonsil crypts could be recovered after somewhat longer intervals. In no case was a permanent carrier state set up. Inert particles disappeared at about the same rate of speed as the bacteria. The organisms probably disappear because they are mechanically removed more rapidly than they multiply. The disposal of *B. coli* and *S. albus* illustrates a mechanism radically different from that effective in removing *Sarcina lutea*.

Nonparasitic Hematochyluria.—Hampton reports a case of nonparasitic chyluria that has persisted over a period of nine years in a young woman whose health was below par. She had a mitral stenosis that had given symptoms at intervals for more than ten years. Her chief complaint had been general weakness with frequent syncopal attacks. Just how much of her disability depended on one or other of these conditions, could not be determined. Apparently, her kidney function was unimpaired. There was no evidence of renal or pulmonary tuberculosis. The leak in the lymphatic system was located in the right kidney. On starvation or a fat-free diet, the urine became fat-free, blood cells and albumin persisting. Posture influences did not control the amount of lymph leakage. Increased water intake and urine output increased the "fat loss."

Myoma of Uterus with Degenerative Changes.—In Brady's case a large cystic mass extended out into the broad ligament, and arising from the posterior surface of the uterus and extending into the left side of the abdominal cavity there was a large myoma. The cyst was multilocular, heart shaped, had a bluish color and extended downward from the lower surface of the uterus. On the inner and lower side of the cyst, about 2 cm. from the external os of the uterus, there was in the vagina an opening about 2 mm. in diameter. A small probe was introduced into this opening and a definite canal dissected out. Brady says that such a canal is in exactly the correct location for one of the rather rare embryonic remains of Gaertner's duct. Cross sections of the duct showed a musculature resembling that found in an artery and no epithelial lining. The cyst was made up of several smaller cysts, each of which was filled with grumous material. In one of these smaller cysts was a well developed polyp. Sections from the cyst showed it was a myoma showing degenerative changes.

Journal of Laboratory and Clinical Medicine, St. Louis

January, 1920, 5, No. 4

- Relation of Common Bile Duct to Pancreatic Duct in Common Domestic and Laboratory Animals. F. C. Mann, J. P. Foster and S. D. Brimhall, Rochester, Minn.—p. 203.
A Second Model Illustrating Phases of Kidney Secretion. M. H. Fisher, Cincinnati.—p. 207.
*Report of Five Cases of Poisoning by Nicotin. W. D. McNally, Chicago.—p. 213.
*Ectopic Adenomyoma of Uterine Type. Report of Ten Cases. A. E. Mahle and W. C. MacCarty, Rochester, Minn.—p. 218.
Importance of Biologic Classifications in Epidemiology. L. C. Havens, Iowa City.—p. 229.
Icebox Fixation Method in Performance of Wassermann Reaction. R. G. Owen and F. A. Martin, Detroit.—p. 232.
Comparative Study of Wassermann Test and Hecht-Weinberg-Gradwohl Modification. A. J. Blaivas, Brooklyn.—p. 244.
Method for Preparing Bacteriologic Medium Containing Ascites Fluid. L. G. Gracc, Cleveland.—p. 253.
*Early Diagnosis of Typhoid and Paratyphoid Infections. H. J. Goeckel, Plainfield, N. J.—p. 255.
Hexamethylenamin Interferes with Test for Indoxyl in Urine. H. J. Goeckel, Plainfield, N. J.—p. 257.
Device for Withdrawing Blood from Veins. C. L. Cummer, Cleveland.—p. 257.
Traumatic Hemolysis and Wassermann Reaction. G. M. Olson, Minneapolis.—p. 259.

Poisoning by Nicotin.—The five cases of poisoning reported by McNally have occurred from taking insecticides containing nicotin by mistake for whisky.

Ectopic Adenomyoma of Uterine Type.—The ten cases reported by Mahle and MacCarty were extra-uterine and extratubal tumors diagnosed at the time of operation as adenomyomas. These growths contained glandular portions resembling typical uterine mucosa, surrounded by a fibrous connective tissue, and smooth muscle stroma, the latter in varying amounts. The distribution of the tumors was as follows: umbilicus, 1; abdominal wall, 2; sigmoid, 1; groin, 2, and rectovaginal septum, 4. Clinically these tumors gave no consistent group of symptoms on which an accurate diagnosis could be made. Of the ten patients, six gave a history of symptoms directly referable to the tumor.

Early Diagnosis of Typhoid and Paratyphoid Infections.—Goeckel claims that it is possible to obtain and identify typhoid and paratyphoid bacilli in the urine by agglutinins before the blood shows a positive Widal reaction or a typical cell count. By this means a prompt report may be given than if blood culture is resorted to. It is a more definite method of identification of the infection than is identifying agglutinins in the patient's blood serum. It is also more positive and eliminates reliance on the Widal reaction of blood serum. Goeckel suggests that it should be resorted to whenever possible in patients who may have a natural or acquired agglutinating capacity due to previous infection or through the use of vaccines.

Journal of Urology, Baltimore

October, 1919, 3, No. 5

- *Congenital Obstruction of Posterior Urethra. H. H. Young, W. A. Frontz and J. C. Baldwin, Baltimore.—p. 289.
Certain Relations Between Shell Fracture of Spine and Changes in Kidney and Bladder Function. H. W. Plaggemeyer, Detroit.—p. 367.
*Routine Examination of Bladder in Secondary Syphilis. E. L. Zimmermann and C. S. Levy, Baltimore.—p. 407.
*Effect of Prostate Feeding on Development of Tadpoles. D. I. Macht, Baltimore.—p. 411.
Toxicity of Pyelographic Mediums, Death Following Use of Thorium Nitrate. E. H. Weld, Rochester, Minn.—p. 415.

Congenital Obstruction of Posterior Urethra.—Twenty-four authenticated cases of congenital obstruction of the posterior urethra recorded in the literature are reviewed by Young and his associates, and twelve cases, admitted to the Johns Hopkins Hospital, are reported in detail. Three distinct types of congenital obstruction, all more or less valvular in construction, so placed that the concave surface of the valve is directed upward, thus bringing about an obstruction to the outflow of urine. In the great majority of cases, symptoms of the condition are manifest during infancy or early childhood. Symptoms of the condition are those arising from obstruction to the outflow of urine, together with the symptoms resulting from renal destruction, induced by back pressure and infection. The history of symptoms of urinary obstruction in male children in the authors' opinion should always suggest the possibility

of this condition. The presence of a distended bladder, and particularly of residual urine, is further indicative of obstruction. This possibility is further strengthened by obstruction in the posterior urethra to the passage of a catheter. Much information regarding the character and exact location of the valves and the renal damage resulting therefrom may be obtained by urethroscopy, the use of the roentgen ray, and renal function studies. The treatment of the condition is surgical, and consists of the removal of the obstruction. This may be accomplished in certain cases by the passage of a sound, with the forcible rupture of the valve; in certain other cases the obstruction may be removed by the urethrotome or by urethroscopic methods. Of the operative procedures, the selection of the suprapubic or perineal route will be governed by the personal preference of the operator. In infants and young children the suprapubic method has proved very satisfactory, the valvular obstruction being removed by its forcible rupture with a sound, its division with a rongeur, or its removal by scissors or cautery. In adults the condition is treated in most cases by intra-urethral methods.

Bladder in Secondary Syphilis.—Twenty-four male patients with active secondary syphilis were selected by Zimmermann and Levy for this investigation. Nine cases presented macular syphilides, twelve a papular eruption and in three the eruption was pustular. In eighteen there were lesions on the mucous membrane of the mouth and pharynx, or moist lesions about the anus or on the scrotum. In no case were urinary symptoms present, and examination of the urine was negative, except for a few shreds in the first glass in a few cases of chronic urethritis. No striking bladder changes were discovered. In ten cases slight vascular changes were noted in the region of the trigone in the form of a delicate ramifying network, and on the bladder wall itself as an increase in the caliber of the vessels. The vascular changes were not considered significant. None of these cases presented either papular or ulcerative lesions.

Effect of Feeding Prostate.—By feeding prostate gland to the larvae, the metabolism of the tadpoles was stimulated and their metamorphosis was hastened. In other words, the tadpoles developed legs earlier than normally and were soon transformed into frogs. At the same time the size of the tadpoles was not diminished and, indeed, in many cases the tadpoles also increased in size. This effect was produced by feeding the desiccated prostate of the ram of bulls and of human prostate. Macht believes that such a phenomenon speaks strongly in favor of an internal secretion of the prostate gland.

Medical Record, New York

Jan. 24, 1920, 97, No. 4

- *Empathic Index and Personality. A. A. Brill, New York.—p. 131.
- Modern Treatment of Obesity by Faradic Electricity; Bergonie Method. E. C. Titus, New York.—p. 134.
- Action of Electrical Currents on Ductless Glands and Other Tissues. F. DeKraft, New York.—p. 136.
- Diagnosis of Abdominal Tumors. A. McGlannan, Baltimore.—p. 138.
- Radium Treatment of Uterine Hemorrhage. T. C. and W. H. Kennedy, Indianapolis.—p. 141.
- Inhalation Treatment in Pulmonary Tuberculosis. B. Robinson, New York.—p. 143.
- *Administration of Arsphenamin by Retention Enema. J. L. Mandracchia, Brooklyn.—p. 144.

Empathic Index and Personality.—This term was coined by E. B. Titchener and deals with the idea of reading oneself into an animate or inanimate object. Brill regards this index as being a new and quick method of observing a person's mode of adjustment. He speaks of a racial, national and biologic empathic index and relates his experience in determining the index in different persons, on the basis of "Tell me your empathic index, and I will tell you who you are." For instance, Brill has found that a nickname given by classmates or friends usually shows the person's empathic index. The woman's empathic index always shows the type of man that appeals to her.

Administrations of Arsphenamin by Retention Enema.—Mandracchia describes a method by which arsphenamin is given in an enema. The solution of arsphenamin is prepared in the usual way, diluting it to between 200 and 250 c.c. The

apparatus consists of a glass cylinder of a capacity of about 300 c.c., connected at one end with a rubber tubing having a glass window and a stopcock, and a rectal tube of sufficient caliber so that the fluid can flow easily and swiftly. The solution having been prepared and placed in the cylinder, and the air having been expelled, the patient, if a male, is allowed to assume the genupectoral position, and if a female, the lateral or Sims position. After the rectal tube has been introduced into the rectum for 4 or 5 inches, the solution is allowed to flow into the rectum by gravity after the stopcock in the rubber tube has been opened. As a rule, the average patient can hold this enema from twenty to twenty-four hours. In exceptional cases, it has been held for four days. Arsphenamin seems to have a constipating effect on the intestinal tract. Where a patient cannot retain the enema, it has been the custom to give a dose of the tincture of opium or paregoric by mouth. In children this is a standing rule. The enema having been given, the patients are sent to bed and allowed to remain in bed for about four hours, instructing them to change their position at frequent intervals. Reverse persistalsis can be more readily facilitated when the foot of the bed is elevated. In adults, the initial dose is 0.3 gm. and every dose thereafter is 0.6 gm. The enema can be given either once or twice a week, all depending on the condition of the patient. By giving the enema twice a week it is believed that the spirochetes are kept in a constant arsenic saturation and thus the duration of the infection is materially shortened. The ideal time to give these enemas is in the evening. During the course of arsphenamin enemas, the patient should undergo a course of active mercurial treatment. No sequels, such as headaches, nausea, vomiting, fever, dizziness, or subsequent nitroid crises acting destructively on the eyes, kidneys and liver, or a fatal termination have been observed by Mandracchia.

Nebraska State Medical Journal, Norfolk

January, 1920, 5, No. 1

- Symptomatology of Diaphragmatic Pleurisy. A. D. Dunn, Omaha.—p. 1.
- Contaminated and Infected Wounds; Principles of Treatment with Antiseptics and Terminology. D. C. Hilton, Lincoln.—p. 5.
- Organotherapy in Gynecology. I. C. Munger, Lincoln.—p. 12.
- *Malignant Sarcoma. M. Emmert, Omaha.—p. 14.
- Amaurotic Idiocy; Report of Cases. F. Clarke, Omaha.—p. 17.
- Acriflavine in Gonorrhea. E. G. Davis, Omaha.—p. 19.
- *Surgical Problems of Pancreas, Report of Cases. C. E. Roeder and A. L. Nielson, Omaha.—p. 23.

Malignant Sarcomas.—Emmert reports a case of tumor on the posterior surface of the right thigh midway between the trochanter and the popliteal space, about the size of a large orange in which a clinical diagnosis of sarcoma was made and operation advised. The tumor was removed. The pathologic diagnosis was simple fibroma with large connective tissue cells. Six weeks after leaving the hospital a streptococcus infection started in the scar and spread over the entire leg and thigh. This subsided in two weeks. One week later there developed rapidly on the median surface of the left ankle a tender inflammatory mass which was thought to result from the recent infection. This persisted for several weeks and then the inflammatory condition subsided, leaving a firm mass which was recognized as a sarcoma. The mass was removed five months after the first one. The pathologic diagnosis was fibromyxosarcoma, spindle and round cells. The second patient was only 2 months old. At the time of birth, a mass the size of a pigeon's egg was noticed on the thoracic wall. The mass was excised later. The microscopic diagnosis was fibromyxosarcoma.

Surgical Problems of Pancreas.—Roeder and Nielsen report three cases: congenital pancreatic cyst; infectious pancreatic cyst and acute pancreatitis.

New York Medical Journal

Jan. 24, 1920, 111, No. 4

- Results of Fracture of Femur Caused by Gunshot Wounds. A. Bowlby, London.—p. 133.
- Uncorrected Factors Perpetuating Stomach Symptoms After Surgical Work. J. C. Wood, Cleveland.—p. 136.
- Essentials of Success in Prostatic Surgery. J. H. Cunningham, Boston.—p. 138.

- Eye in Pregnancy. L. C. Peter, Philadelphia.—p. 141.
 Value of Inhalation of Certain Gases in Prevention of Influenza. B. Robinson, New York.—p. 142.
 Roentgen Therapy in Gynecology. W. H. Meyer, New York.—p. 143.
 Some Extragastric Causes of Gastric Symptoms. M. B. Kunstler, New York.—p. 144.
 Clinical Analysis of Influenza Cases. A. S. Blumgarten, New York, and F. H. Voss, Gardner, N. J.—p. 146.

Jan. 31, 1920, **140**, No. 5

- *Wassermann Contradictions Considered from Clinician's Point of View. A. L. Wolbarst, New York.—p. 177.
 Extraction of Rifle Bullet from Bladder by Natural Route. G. Luys, Paris.—p. 181.
 *Dental Syphilitic Chancre. H. Goodman, New York.—p. 183.
 Coordination of Principles of Chemistry with Laws of Immunity in Treatment of Tuberculosis. B. S. Paschall, New York.—p. 184.
 Psychology of Conscientious Objector. D. E. Hoag, New York.—p. 187.
 Curing the Drug Addict. J. A. Hamilton, New York.—p. 192.
 Compulsory Health Insurance. C. H. Chetwood, New York.—p. 193.
 Shortening of Round Ligaments When Operating for Other Intrapelvic Conditions. S. Goldberg, Buffalo.—p. 197.

Wassermann Contradictions.—Wolbarst is of the opinion that the Wassermann test and the gonorrhea fixation test should be made by at least three serologists working independently; the serum should be taken simultaneously and sent to the different laboratories under identical conditions; one serologist is not to be depended on, however capable he may be. Three serologists will agree in approximately 53 per cent. of Wassermann tests and approximately 42 per cent. of gonorrhea fixation tests. That is, the chances are about fifty-three in a hundred that three serologist will agree on any given serum. They are more likely to agree in the negative cases than in the positive cases. At all events, it is well to devote more study to the clinical features of all cases and trust not quite so implicitly on laboratory workers for a diagnosis.

Dental Syphilitic Chancre.—Goodman reports a case of syphilitic infection contracted at the site of tooth extraction.

Philippine Journal of Science, Manila

August, 1919, **15**, No. 2

- Application of Generic Name Melodorum of Lourcero. E. D. Merrill, Manila.—p. 125.
 Jumping Plant Lice of Paleotropics and South Pacific Islands. D. L. Crawford, Honolulu.—p. 139.
 Genus Krisna (Jasside). C. F. Baker, Los Baños, P. I.—p. 209.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

January, 1920, **28**, No. 1

- University of Oklahoma School of Medicine. L. Long, Oklahoma.—p. 2.
 Chronic Progressive Cerebellar Tremor. G. M. Eckel, Hot Springs.—p. 4.
 *New Method of Inserting Bone Graft for Correction of Kyphosis. S. A. Grantham, Joplin.—p. 8.
 Fractures of Upper End of Humerus. M. E. Stout, Oklahoma City.—p. 10.
 Postbellum Morbidity. J. A. Roddy, Oklahoma City.—p. 13.

New Method of Inserting Bone Graft for Correction of Kyphosis.—The method which Grantham proposes is to make a transverse incision, 1 inch long, just below the posterior spinous process of the affected vertebrae, extending through the supraspinous ligament. A thin osteotome, made with a reverse curve, is introduced as far as the base of the spinous process; the process is sheared in a direction parallel with the spinal canal; the two processes above the vertebra are cross sectioned in the same manner without the withdrawal of the instrument. The osteotome is then withdrawn and inserted in the opposite direction, and two spinous processes below the affected vertebra are cross sectioned, in a similar manner; a graft of sufficient length, from one-half to three-quarters inch in width, is secured; the capsular layer of periosteum is removed in such manner as to leave as much of the intervening osteogenic layer of cells as possible on the graft. The graft is now introduced into the tunnel thus prepared for its reception; if the skin incision requires a suture, it is placed subcuticularly, with catgut armed with two needles, so that the needles pass from within outward in passing through the skin. Grantham claims for his method that the graft is placed in direct bony contact, the endosteal surface to the stumps of the cross sectioned posterior proc-

esses, near the laminae; the periosteal surface, its fibrous capsule removed and as much as possible of the osteogenic layer of cells preserved, is pressed firmly by the freed ends of the processes, held in situ by the uncut lumbodorsal fascia, and supported literally by the muscles of the back.

United States Naval Medical Bulletin, Washington

January, 1920, **14**, No. 1

- Comparative Anthropometric Study. L. S. Solhaug, M. C., U. S. Navy.—p. 1.
 Medical and Hygienic Aspects of Submarine Service. E. W. Brown, M. C., U. S. Navy.—p. 8.
 Queen's Hospital for Facial and Jaw Injuries, Frognal, Sidcup, Kent, England. L. W. Johnson, M. C., U. S. Navy.—p. 17.
 Military Orthopedic Hospitals in the British Isles. R. Hammond, Providence, R. I.—p. 65.
 Scuttle Butts on Board Ship. J. A. B. Sinclair, M. C., U. S. Navy.—p. 137.
 Bronchopulmonary Spirochetosis in An American. G. W. Lewis, M. C., U. S. Navy.—p. 149.
 Probable Case of Encephalitis Lethargica. A. F. Kuhlman, M. C., U. S. Navy.—p. 151.
 Defense of Open-Air Treatment of Pneumonia. D. Ferguson, Jr., M. C., U. S. Navy.—p. 153.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Jan. 24, 1920, No. 3082

- Clinical Research. J. MacKenzie.—p. 105.
 *Early Diagnosis of Pulmonary Tuberculosis. T. Beattie.—p. 111.
 *Routine Treatment of Malaria in Uganda. J. A. Taylor.—p. 113.
 *Comparison of Two Methods of Administering Arsenobenzol Compounds in Syphilis. H. E. Gibson.—p. 14.

Early Diagnosis of Pulmonary Tuberculosis.—Besides placing dependence on the family history, previous history, as of pleurisy and hemoptysis, subjective symptoms, such as gradual loss of flesh or of constantly increasing languor, lassitude, tiredness, inaptitude for work, indigestion, dyspepsia, retching, anemia, slight evening pyrexia, feeling dull and tired in the evenings, objective signs, such as deficient expansion, impaired resonance on percussion, cogwheel respiration, posttussive crepitations, and the roentgen ray, Beattie attaches much importance to the tuberculin diagnostic test. He prefers to use Koch's T. A.; 1:1,000 dilution, 1 c.c. hypodermically.

Treatment of Malaria.—Most of the cases of malaria met with in Uganda, Taylor says, are of the simple subtertian form without complications. The routine treatment adopted by him in these cases was, calomel, in an average dose for an adult of not less than 5 grains, followed in some hours by a saline. Quinin hydrochlorid, 5 grains by mouth, one hour after the saline. This was usually about 7 a. m., and between this time and noon three more doses of 5 grains each were given at more or less regular intervals. On subsequent days, until the temperature had remained normal for twenty-four hours, 20 grains were given daily in the same manner, the first dose at 6 a. m., or as soon as the patient was awake, and the last dose at noon. After the temperature had been normal for twenty-four hours, the quinin was reduced to 15 grains daily—5 grains before the morning, midday and evening meals. This was continued for one week and then reduced to 10 grains daily—5 grains morning and evening. Ten grains daily were continued for a fortnight, and then only 5 grains were given each evening for two months. Acetphenetidin, in 5 grain doses, up to 15 grains daily, for headache alone, or acetylsalicylic acid in the same doses, if complaint were also made of pains in the limbs and body. Under this treatment the temperature usually remained normal after the third day, but occasionally, especially if a first attack, after four or five days; no complications occurred in any cases from the effects of the quinin or malaria; there were no recurrences of the fever during the three months' treatment, and attacks only occurred later when some definite fresh infection had taken place.

Administration of Arsenic Compounds in Syphilis.—The two courses of treatment given by Gibson were a concen-

rated course, which was completed in five or six weeks, and a "prolonged course," which lasted about eight weeks. Advantage seems to lie with the prolonged course, partly owing to the lesser incidence and violence of reactions, and partly because the total results are better than with the concentrated course; this especially applies to secondary cases.

Indian Journal of Medical Research, Calcutta

October, 1918, 6, No. 2

Area Sown as Measure of Bacterial Growth. W. F. Harvey.—p. 127.
Yield by Weight of Bacterial Substance for Area Sown and Duration of Growth. W. F. Harvey.—p. 131.
Dried Bacterial Antigen. W. F. Harvey.—p. 137.
Report on Antiberiberi Vitamin Content of Ground Nut (Peanut) Meal Biscuits. E. D. W. Greig.—p. 143.
Preparation of Sterile Tryptic Extract from Pancreatic Glands of Herbivora. J. Cunningham.—p. 147.
Diagnosis of Acute Infections of Throat Occurring among Troops of Mesopotamian Expeditionary Force. II. W. Acton.—p. 152.
Significance of Charcot-Leyden Crystals in Feces As Indication of Amebic Colitis. H. W. Acton.—p. 157.
Leishmania Tropica Infections in Mesopotamia. C. P. Connor.—p. 162.
Culture Medium Suitable for Growth of Organism Used in Vaccines. D. Norris.—p. 174.
Twenty Years of Plague in India; Outbreak of 1917-18. F. N. White.—p. 190.

Yield of Bacterial Substance for Area Growth.—Harvey claims that yield of bacteria, as measured by surface growth, is a reasonably good approximation to moist bacterial weight and is very easily estimated. Weight of bacteria moist presents a considerable degree of direct relationship with weight dry. There is, however, a greater variability of weight moist for constant area of surface than there is of weight dry. The weight of bacteria in the dried condition would, therefore, appear to be the only satisfactorily accurate measure of quantity of bacterial antigen.

Dried Bacterial Antigen.—Not only can a dried antigen of bacterial substance be prepared easily, but it can be used with safety in animals by intravenous and intraperitoneal injection. Harvey found that such an antigen conserves its power of production of agglutinins for a long period. It is of extremely small bulk; is easily measured by weighing; and is capable of being dispensed in mixture with other similar antigens in any proportion desired.

Antiberiberi Vitamin Content of Peanut Meal Biscuits.—Greig's investigation shows that the ground nut (peanut) meal biscuit is as rich as the 15 per cent. atta biscuit in antiberiberi vitamins. Hence, the ground nut meal, whether in the form of bread or biscuit, would be suitable to form part of an "emergency" or other ration for issue to the troops.

Charcot-Leyden Crystals in Feces in Amebic Colitis.—After examining on an average about 500 stools a month, Acton has come to regard the presence of Charcot-Leyden crystals to be an almost certain indication of the existence of an amebic colitis and not to be associated with helminth infections. In the absence of amebas, he does not hesitate to diagnose the case as amebic dysentery when pus, mucus and Charcot-Leyden crystals are found, and the results obtained by treatment with emetin justified the conclusion.

Culture Medium Suitable for Growth of Organisms Used in Vaccines.—Various types of culture mediums were prepared and examined by Norris with a view to the determination of their nutritive value as regards the growth of *B. typhosus* for vaccine purposes. Of the various meat mediums at present in use, those prepared by means of a tryptic digestion appear to be much more nutritive than an ordinary beef peptone medium or than those prepared by acid hydrolysis. The addition of nutrose and casein appears to have no great influence on growth unless added to a particularly nonnutritive medium. The addition of a comparatively small amount of hydrolyzed nutrose to a poor medium increases the growing power to the level of an ordinary tryptic medium. Glucose seemed to inhibit growth. Mediums obtained by the tryptic hydrolysis of nutrose, press cake from ground nut, and casein give material equal in nutritive value to that obtained from meat. In examining the nutritive value of these mediums, concentration of substrate appeared, within limits, to be of greater importance than time of hydrolysis.

Japan Medical World, Tokyo

Jan. 3, 1920, No. 315.

Antigen for Wassermann Test. R. Kobayashi.—p. 17.
Treatment of Cystitis in Women by Injection of Colloidal Silver. E. I. Kito.—p. 17.
Clinical Applications of Solidified Carbonic Acid. T. Sato.—p. 17.
*Wassermann Reaction of Aqueous Humor. G. Okazaki.—p. 17.

Wassermann Reaction of Aqueous Humor.—In the aqueous humor of the eyes of syphilitics, except when inflammation of the eye existed, Okazaki succeeded in demonstrating a Wassermann reaction in the proportion of 1:200 or even 1:600 part of the blood contents. In the presence of inflammatory diseases of the eye, the antibodies appeared in an even higher concentration. The Wassermann reaction in the aqueous humor occurs just as soon as it does in the circulating blood.

Dublin Journal of Medical Science

January, 1920, 3, No. 577

*Pancreatic and Intestinal Infantilism. T. G. Moorhead.—p. 1.
The Criminal as a Patient. C. E. McQuade.—p. 11.

Pancreatic and Intestinal Infantilism.—In one case cited by Moorhead the apparently primary pathologic change was a catarrhal condition of the colon, and probably also of the small intestine, and, in consequence, the author regards the case as one of undoubted intestinal infantilism. Other changes present were probably secondary and resulted from the inanition produced by the bowel condition. The second case reported appears to be a further confirmation of Byron Bramwell's view, that pancreatic infantilism is a definite entity.

Journal of Laryngology, Rhinology and Otology, London

January, 1920, 35, No. 1

Intratracheal Tumor Removal by Peroral Tracheoscopy. H. Tilley.—p. 1.
Vincent's Angina of External Auditory Meatus; Two Cases. A. Cheate.—p. 6.
*Lupus of Upper Air Passage: Report on 128 Cases. R. Webber.—p. 7.
Sphenoidal Sinus Empyema in Cerebrospinal Meningitis. E. A. Peters.—p. 11.

Lupus of Upper Air Passages.—Webber believes that in the vast majority of cases of lupus, the condition first appears in the nose. This was the case in 113, or 88 per cent., of the 128 cases studied by him. The disease began either on the anterior part of the nasal septum, on the mucous membrane of the outer wall of the nose and close to its junction with the septum, or on the anterior end of the inferior turbinate. In a certain number of cases there was an extension of the disease to the mucosa of the hard and soft palate, the pharynx or larynx, without evidence of skin lesion, but in sixty-nine, or 52 per cent., of the cases, skin involvement was noted on the face. Glandular involvement occurred in forty-eight cases, the glands most frequently affected being those of the submaxillary chain. As worthy of note Webber calls attention to the fact that in twelve of these cases there were present scars following operations for old submaxillary gland trouble. He infers that at the time of such operation the disease within the nose causing the gland enlargement was present but overlooked. One of Webber's patients has been under treatment for his lupus for thirty-two years! In the treatment of lesions on the palate and alveolar process, the best results were obtained from curettage and the application of lactic acid (75 per cent. solution) or the electric cautery. For lupus of the nose, Pfannenstiel's treatment was distinctly helpful. This consists in curettage and packing the nasal cavities with gauze soaked in hydrogen peroxid, and sodium iodid internally. In lupus of the epiglottis and the laryngeal mucosa, removal of the diseased area with cutting forceps often has resulted in a cure, or, at least, arrest of the disease. The roentgen rays have been used largely in the past in the treatment of the associated skin condition, but at the present time they are used only in selected cases. Webber emphasizes that no matter what treatment is selected, only the closest cooperation between the patient and the person in charge of the case will produce the best results.

Journal of Tropical Medicine and Hygiene, LondonJan. 15, 1920, **23**, No. 2

Etiology of Thrush. A. Castellani.—p. 17.

*Case of Appendicitis in Native of Solomon Islands. N. Crichlow.—p. 22.

Appendicitis in Solomon Islands.—According to Crichlow, appendicitis is a rare disease among the natives of the Solomon Islands. During five years' experience among these natives he has seen only one case. The case in question was a young missionary girl, who after being "Christianized" and "Europeanized" left off eating native foodstuffs and used to eat European foodstuffs. Crichlow says he cannot help feeling that the European foodstuffs and her life in civilization played some part in the development of her attack of appendicitis, as appendicitis is unknown among the natives living solely on native foodstuffs.

Medical Journal of Australia, SydneyJan. 10, 1920, **1**, No. 2

Value of Cystoscope as Means of Diagnosis in Urology. A. S. Roe.—p. 25.

*Isolation of Organism Resembling Paratyphoid Group. A. Dean.—p. 27.

*Case of Septicemic Anthrax Successfully Treated by Intravenous Serum Therapy. E. N. Bateman, N. H. Fairley.—p. 32.

*Case of Rupture of Liver, with Recovery. L. Doyle.—p. 32.

Isolation of Organism Resembling Paratyphoid Group.—From the urine and feces of five cases, no two of the same disease, Dean isolated an organism of the coli-typhoid group, which gave unusual biochemical reactions in the sugars. The organism was smaller than *B. typhosus*, being more of a coccobacillus in appearance. It varies from 1 to 2 microns in length. It stained easily with the usual anilin dyes, but was gram-negative. The organism does not ferment dulcitol, lactose, inulin or adonite, while, on the other hand, it ferments saccharose, mannite, maltose, glucose, sorbite, raffinose and arabinose. Its gas producing powers are considerable, particularly on saccharose, glucose and sorbite. In arabinose and raffinose its action is changeable. New cultures give acid and slight gas formation. Some subcultures only give acid reaction. Its action on litmus milk differs widely from the usual nonlactose fermenters. For the first four days no change is noted, except that on the second day the alkalinity of the litmus milk is more exaggerated, the milk becoming intensely blue. On the fifth day, the milk assumes an acid reaction. This continues until the tenth day, when clotting of the milk occurs. On the fifteenth day, the milk clears, but still retains its acid reaction. In its agglutination reactions, this organism appears to be more closely linked to *B. paratyphosus* B, than *B. paratyphosus* A or *B. typhosus*.

Septicemic Anthrax Successfully Treated by Intravenous Serum Therapy.—In the case reported by Bateman and Fairley, anthrax bacilli were demonstrated in quantity in the seropurulent discharge from the excised pustule, and on the fifth day of the disease, blood culture yielded a positive result. The energetic administration of a large quantity of Sclavo's serum culminated within twenty-four hours in a critical fall of temperature, in a complete recovery from all toxic symptoms, and in a rapid amelioration of the local lesion itself.

Traumatic Rupture of Liver.—A boy, aged 8 years, sustained a rupture of the liver from being run over by an automobile. The outstanding features of the case were the thoracic type of breathing, the anxious expression of the child and the history of very severe trauma. Micturition occurred shortly afterward and perfectly normal urine was voided. A provisional diagnosis of a ruptured abdominal viscus was made by Doyle, and the evidence suggested that the lesion would be found in the spleen or the left lobe of the liver. The general appearance of the child was indicative of an injury much more serious than what was compatible with the physical signs, and it was felt that it would be safer to explore the abdomen immediately rather than to wait. Laparotomy was performed about two hours after admission. On opening the peritoneum, blood stained fluid was encountered, and on retracting the abdominal wall, blood gushed up in startling quantity and with great rapidity. The

issue was traced to the right lobe of the liver. There was a laceration on the anterior surface, commencing on the free edge, about 2.5 cm. lateral to the gallbladder and running vertically for about 5 cm. A long strip of iodoform gauze was packed as tightly as possible into the wound, and the end was brought out of the incision. Four large abdominal packs were inserted between the liver and the diaphragm over the tear. Transfusion of physiologic sodium chlorid solution and of the father's blood was done. About seventy hours after operation, under light ether anesthesia, the packs were removed, drains were inserted and the wound was closed again. No further hemorrhage occurred. The lesson Doyle draws from this is that when there is a possibility of a solid abdominal viscus being damaged, it is generally safer to explore at once rather than to await the classical symptoms of hemorrhage.

South African Medical Record, Cape TownNov. 8, 1919, **17**, No. 21*Syphilis in South Africa. A. Pijper.—p. 323.
Successful Treatment of Case of Sleeping Sickness. W. A. Murray.—p. 326.

Case of Urethral Hemorrhage. H. T. Mursell.—p. 328.

Syphilis in South Africa.—In order to determine the prevalence of syphilis among the population of South Africa, Pijper subjected the blood serum of fifty persons born in South Africa, and who apparently were healthy, to the Wassermann test. Five were found to have acquired syphilis at some period of their existence. In other words, according to these figures, 10 per cent. of people born in South Africa, while apparently healthy, are infected with syphilis. As none of these persons presented any symptoms, Pijper assumes that the disease was in the latent stage at the time of their examination. It is a well known fact that only about 50 per cent. of syphilitics will exhibit a positive Wassermann reaction, while in the latent stage. Consequently, 20 per cent. of the population of South Africa are infected with syphilis while seemingly enjoying good health. If the percentage of latent cases is 20 per cent. it may safely be assumed that the total percentage of persons infected with syphilis is somewhere between 20 and 25 per cent.

Archives des Mal. du Cœur, etc., ParisSeptember, 1919, **12**, No. 9

*Diagnosis of Different Forms of Slow Pulse. L. Bard.—p. 385.

*Phono-Phlebograms. J. de Meyer and V. Gallemaerts (Brussels).—p. 395.

*Digitalis in Tuberculosis with Low Blood Pressure. R. Burnand.—p. 419.

Diagnosis of Slow Pulse by Inspection of Veins.—Bard states that the diagnosis of the nature of bradysphygmia is usually made from the pulse tracings, but that this is possible merely from inspection of the jugular pulse wave. He explains how the characteristics of the pulse wave permit the false bradycardias from coupled rhythm of the ventricles to be distinguished from true ventricular bradycardia, and further distinguish between the three varieties of the latter. Thus in the majority of cases simple inspection of the venous pulse serves to differentiate the six different forms of slow pulse with regular rhythm.

Phonophlebogram.—De Meyer and Gallemaerts have continued their research published in 1914 on the graphic recording of the sounds that accompany the venous pulse, or at least those sounds which are perceptible on auscultation of the bulb of the jugular vein. They use the Einthoven apparatus as for cardiography, and record a whole series of complex sounds from the auricle and ventricle systoles and the duration of the silences.

Digitalis in Pulmonary Tuberculosis.—Burnand is medical director of the Sanatorium populaire at Leysin, and he here expatiates on the advantages of prolonged administration of digitalis in pulmonary tuberculosis with abnormally low blood pressure. He gives it irregularly, three days out of every ten, and has been convinced of the benefit therefrom in cases in which the myocardium still retains some of its vitality. In the advanced stages the heart is unable to respond.

Archives de Médecine des Enfants, ParisJanuary, 1920, **23**, No. 1

- Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin.—p. 5.
Children's Asylums, etc., Should Be in the Country.—J. Camescasse.—p. 37.
Present Status of Nephritis in Children. J. Comby.—p. 41.

Inherited Syphilis and Dystrophies.—Hutinel and Stévenin review the whole field of special and general dystrophies from inherited syphilis, and emphasize its predilection for the liver, spleen, brain and glands. Its effect on the endocrine glands may be responsible for the development of such opposite conditions as dwarfism and giantism, obesity and extreme leanness, severe rachitis, chronic rheumatism, etc. Treatment requires not only measures against syphilis but also the specific organotherapy for the endocrine gland involved. They discuss the anatomic lesions for which the inherited syphilis is responsible, commenting in particular on the constant abnormal changes in the bone marrow, lungs and heart. The latter is very rarely directly affected by the syphilis; it seems to pass by the larger blood vessels and heart in children, and act merely on the smaller vessels. They cite some cases of genital infantilism in which the development of the organs had not only been arrested but sclerosis had invaded them and crushed out the noble elements. In other cases the organs undergo actual retrogression; this is particularly likely in the pluriglandular cases, especially those in which pituitary or thyroid disturbances predominate. This clinical picture may be traced to other chronic infections and intoxications besides syphilis, but is more common with the latter, as the morbid process is more apt to act on several of these glands at once. This is not inevitable, however, as some of the glands may become pathologic only secondarily to the first ones involved.

Nephritis in Children.—Comby reproduces nearly the whole of Hill's article on this subject in the *American Journal of Diseases of Children*, April, 1919. Comby comments on it that it "mirrors his own experience and ideas." . . . "Dr. Hill," he adds, "has observed large numbers of cases and has observed them well. His descriptions bear the stamp of truth."

Bulletin Médical, ParisJan. 3, 1920, **34**, No. 1

- Is Influenza an Autonomous Disease or an Epidemic of Pyosepticemia? M. Sacorrafos.—p. 5.
Treatment of Acute Appendicitis. A. Gauchoix.—p. 7.

Treatment of Acute Appendicitis.—There has been considerable discussion lately of this subject in France, apparently going over the ground that the surgeons of America traversed and left behind them, twenty years ago.

Jan. 10, 1920, **34**, No. 2

- Medical Treatment of Acute Amebic Disease of the Liver. F. Françon.—p. 21.
False Tuberculosis. A. Jacquemin and M. Dubreuil.—p. 23.

Medical Treatment of Acute Amebic Disease of the Liver.—Françon emphasizes that the differential diagnosis of acute amebic hepatitis may be puzzling when there is associated malaria or the clinical picture resembles typhoid, pleurisy, gastro-enteritis or cholecystitis. Instances of each have been published. Radioscopy is useful when the ameba cannot be detected in the stools, as happened in 15 of his 28 cases, and in 16 of Ravaut's 21. Medical treatment is necessary even when an operation is contemplated. In the 88 cases Françon has compiled, emetin was given in 72 cases; neo-arsphenamin in 2, and both in 12. He regards the combination as most promising. When exploratory puncture shows a young focus, with creamy, reddish pus, with well preserved leukocytes and no fatty degeneration, the focus can usually become resorbed under medical measures alone. But with lead pus and associated infection, resorption is practically impossible and the focus will have to be mechanically cleared out; secondary infection is not amenable to emetin treatment. Medical measures are liable to fail also if the abscess is larger than a mandarin orange. Recurrences can be treated with the medical measures anew. The results in the 88 cases

he has compiled fully confirm the efficacy of emetin in amebic disease of any kind. It seems to be even more effectual when the focus is in the liver rather than in the bowel, as is easily explained by the fact that the encysted forms of the ameba seldom get into the liver, and superposed infection is the rule in the intestines.

False Tuberculosis.—Jacquemin and Dubreuil review their four years of sanatorium experiences in respect to false and factitious pulmonary tuberculosis. They warn of the danger of incriminating tuberculosis when the patient has merely a bronchitis of nasal origin or exhibits the lung phenomena of mitral stenosis or the respiratory disturbances common in certain forms of liver disease, or has interlobar pleurisy with a fistula into a bronchus. There may be frequently recurring or continuous bronchitis when the nose is more or less stopped up. "Beware," they say, "of mouth breathers; examine the nose before the chest." Stones in the gall-bladder may induce a pleural reaction, pains in the shoulder, tendency to hemorrhages, and occasional waves of fever and general depression that may be mistaken for pulmonary tuberculosis, especially when there is a cough. The liver cough may deceptively simulate a lung cough, and the right tracheobronchial glands may enlarge under the influence of the cholecystitis. The laboratory findings may be the only clue in such cases. An old interlobar pleurisy with a fistula into a bronchus is almost certain to be mistaken for pulmonary tuberculosis unless it is noticed that the fever occurs in the morning instead of the evening. Another sign is a tendency to hippocratic fingers. This, they declare, is always the expression of a pleural lesion. It is a synonym, they say, for interlobar pleurisy when it occurs early. With pulmonary tuberculosis it is exceptional and tardy.

As the demobilized men know that a sputum containing tubercle bacilli is like a government bond in insuring a certain income from the state, all kinds of tricks are practiced to impose the diagnosis of pulmonary tuberculosis. To avoid fraud, the man is examined on waking. He is given two or three swallows of tea, and is told to expectorate in the sterilized spit-cup given him for the purpose. His hands are carefully washed beforehand. This method averts fraud, but it is tedious and makes a number of examinations necessary. Among the tricks described is the effort to show a rapid loss of weight; the man at the first weighing artificially increases his weight.

Bulletins de la Société Médicale des Hôpitaux, ParisDec. 12, 1919, **43**, No. 36

- *Edematous Rash from Neo-Arsphenamin. G. Milian.—p. 1055.
Epidemic of Probable Dengue in Troops in Near East. Pagnier and O. Couffon.—p. 1059.
*The Blood in Typhoid after Vaccination. P. Armand-Delille and others.—p. 1063.
*Senile Wrinkled Skin in Children. A. Souques.—p. 1074.
*Injection of Air for Radioscopy. P. Emile-Weil and Loiseleur.—p. 1077.
*Spirochetal Jaundice. Lortat-Jacob and Deglaire.—p. 1077.
Pott's Disease in Woman of Seventy. P. Merklen and H. Schaeffer.—p. 1079.
*Gas Gangrene in Typhoid. Weinberg and Françon.—p. 1084.

Rash with Edema and Desquamation After Arsphenamin.—The man in Milian's case developed the rash, with edema of the eyelids, etc., resembling that with Bright's disease, after he had been taking a long course of neo-arsphenamin. The urine was constantly normal, except for urobilinuria. Ramond has encountered a similar case, the scarlatiniform eruption developing after the sixth injection. The syphilis was of only a few weeks' standing. The edema in face, arms, and legs was extreme, but there was no fever and the general condition and appetite kept good. The man became transiently deaf in one ear, probably from extension of the edema to the eustachian tube. This edematous rash persisted for about two months, the pruritus keeping up to the last. Ramond remarks that this toxic eruption with edema is not so rare as might be imagined from the literature, but instances of it are not published as a rule.

Blood Findings in Typhoid and Paratyphoid After Vaccination.—The findings in 350 cases in soldiers and civilians

in the near East are given. They suggest that paratyphoid bacilli seem to acquire greater virulence in subjects vaccinated against typhoid. The authors comment that this seems to confirm the wisdom of polyvalent vaccination.

Geroderma in Children.—Souques recalls another case of loose, flabby, corrugated, senile skin in a child. Variot says that he has also encountered two cases of the kind.

Roentgenography After Injection of Air.—Weil and Loiseleur comment on the double advantage from injection of air after an effusion is evacuated. It not only has a therapeutic action but aids materially in the diagnosis by rendering much more distinct the outlines of the pleura, peritoneum or joint involved in the process.

Spirochetal Jaundice.—The case was typical in the robust young man, but there was in addition intense diffuse pruritus throughout the three weeks of the disease, and the urine contained bile salts; there was also bradycardia—all testifying, Lortat-Jacob says, to retention of the products elaborated by the kidney cells.

Typhoid Gangrene.—The typhoid in the young man ran a rather severe course without intestinal complications. Two days after defervescence, symmetrical patches of gangrene developed on the thigh; they were arrested by a gas gangrene antiserum, but the patient died the third day. Weinberg and Françon remark that if the stools or blood had been examined for anaerobes, the antiserum could have been used earlier, and the patient might have been saved.

Paris Médical

Dec. 27, 1919, 9, No. 52

*The Mental Stomach. Chavigny.—p. 497.

*Treatment of Scoliosis. Joland.—p. 499.

*Treatment of Deafmutism. G. de Parrel.—p. 504.

Diagnosis of Height of Lesion Causing Spinal Paraplegia. J. A. Barré.—p. 507.

Mental Dyspepsia.—Chavigny declares that we digest with our brains as well as with our stomachs. Gastric digestion is cerebral in large part, and cases of uncontrollable vomiting should be classed as mental dyspepsia, and be treated by psychiatrists after gastro-intestinal specialists have diagnosed the case. He remarks that psychiatrists will realize their finest successes in the *rééducation psychique de ces petits mentaux*. Most of the patients who seek the stomach specialists cherish special fads in regard to eating whole wheat bread or other special diet, or going barefoot, or they have other odd hobbies. It is remarkable, he exclaims, how persons in this category often do well on a diet that a normal person might have difficulty in digesting. He adds that the surgeon must beware of the operative adventures to which this class of patients often seek to entice him. The recent tragic death of Pozzi and of Guinard should warn to refuse to these *petits aliénés* with *troubles cénesthésiques* the operations for which they sometimes clamor. Soldiers with this "mental dyspepsia" should be given rapid mental retraining, with gymnastic exercises and military discipline. In one of the typical cases related, the relapse under emotional stress or extra responsibility confirmed the psychic element involved. The lack of any modification after a useless appendectomy, and the practically normal gastric chemistry testified that the uncontrollable vomiting in the previously healthy officer of 33 was of this nervous dyspepsia type, but more psychic than anatomically nervous.

Abbott's Method of Treating Scoliosis.—Joland insists that Abbott's method for treatment of scoliosis is difficult and dangerous, and should not be attempted except by the few specialists who know the exact indications for it. "The general practitioner should realize that the great majority of scoliotics should not be abbotted."

Treatment of Deafmutism.—De Parrel emphasizes that much can be done by physicians and parents to prepare deaf-mutes for the training in special institutions when they reach the age of 6 or 7. The young child should be given the benefit of hygiene, and of physiologic and surgical measures as the case demands to enable him to profit to the full from the specialist training later. He declares, "absolute deafness

is extremely rare, and if the vestiges of hearing are trained, this is an inestimable gain when specialist treatment is begun." Vision should also be trained to the utmost, as lip reading depends on the visual acuity. De Parrel stresses the importance likewise of preparing the child for *réceptivité pédagogique* so that it will be ready to learn. This is the mother's task, but the physician is the indispensable technical adviser in this, and he should be well posted on what to advise. De Parrel gives minute details of all these preliminary measures, especially those seeking to train in attention, in imitation, and in tactile perception.

Jan. 3, 1920, 10, No. 1

*Recent Progress in Tuberculosis. P. Lereboullet and L. Petit.—p. 1.

*Menstrual Equivalents in the Tuberculous. C. Sabourin.—p. 11.

*Miliary Forms of Pulmonary Tuberculosis. A. Pissavy.—p. 19.

Influenza and Tuberculosis. R. Debré and P. Jacquet.—p. 24.

*Diagnosis of Pulmonary Tuberculosis. P. Ameuille.—p. 28.

*Sunlight as Factor in Sterilization of Tuberculous Sputum Expectored on the Street. H. Tecon.—p. 33.

Tuberculosis in 1920.—Lereboullet and Petit say that the prophylaxis and hygiene rather than the medical aspect of tuberculosis engrossed attention during 1919. Among the few communications on the medical features were those on the detection of the falsely labeled tuberculous. Compulsory declaration of tuberculosis seems to have been postponed to the day when the declaration will ensure care and assistance for the tuberculous and his family. Until this can be realized, notification serves merely to pile up statistics. E. Sergent has recently presented evidence that even tubercle bacilli in the sputum do not necessarily prove that the lesions are in process of evolution, and also that the absence of tubercle bacilli is not unfailing testimony as to the nonactivity of the lesions. Radiography throws no light on the age and evolution of the lesions, but a low arterial pressure is the rule in progressing cases. A rise in temperature after muscular exercise does not necessarily mean tuberculosis, as unstable temperature may be observed under various other conditions, digestive, cardiac, etc. They agree with Sergent's dictum that there is no absolutely certain sign which tells whether the tuberculous process in a well appearing person is progressing or not. He may have had hemoptysis on one occasion or a disquieting pleurisy, but has been in apparent health since. Repeated examination, the fixity of the stethoscopic and radiosopic findings, the character of the physical signs, the attenuation of the myotonic reaction, the disappearance of the tenderness at the apex, the normal blood pressure, the intensity of the tuberculin reaction, stability of the temperature, and the repeatedly verified absence of tubercle bacilli from the sputum, form a bundle of proofs on which the diagnosis can be based. The whole secret lies in repeating the examinations and comparing the findings. About 25 per cent. of the tuberculous show roentgen shadows in the fissures between the lobes, but few physicians ever examine for these *localisations scissurales*, and yet they are an important factor in recurring pleurisy. The stethoscope reveals small and inconstant foci of dry rattling, or friction râles, which, associated with intercostal neuralgia and cough, aid in detecting these frequent and benign tuberculous lesions.

Roger demonstrated ten years ago that the absence of albumin from the sputum excluded tuberculosis. A positive albumin reaction is found in many other diseases, but Krongold has recently published evidence to the effect that the presence of peptone in the sputum is a reliable sign of tuberculosis, as the tubercle bacilli belong to the small group of micro-organisms which by their proteolytic ferments split albumin into albumoses and peptones. Jousset insists that tuberculosis, as we know it, is merely the nodular form of infection by the tubercle bacillus. The latter may induce a wide range of reactions and symptoms, and in both there is first an acute, curable, congestive stage, in which serotherapy is promising. (His method was described in these columns, Aug. 17, 1918, p. 605.) The most important work on artificial pneumothorax during 1919 is stated to be that by Morelli of Montevideo. (One of his recent communications was summarized here, July 19, 1919, p. 235.) He draws the balance sheet with a most favorable balance to the credit of the

procedure in appropriate cases. Lalesque's review of his thirty years of treatment of tuberculosis at a seashore sanatorium is said to be another instructive contribution. He emphasizes the importance of the moisture of the sea air in preventing congestion and hemoptysis.

Menstrual Equivalents in the Tuberculous.—Sabourin describes how the organism seeks to throw off the excess of endocrine secretions that accompany ovarian functioning and which have to be got rid of, unless fecundation occurs. They usually pass off in the menstrual hemorrhage, but in the tuberculous they are liable to make their influence felt first on the points of lesser resistance, inducing congestion and possibly hemorrhage. There may be fever, congestion of the lungs, with hemoptysis, epistaxis, bleeding from hemorrhoids, diarrhea, excessive secretion in nose or bronchi, or there may be menstrual vomiting of bile or transient congestion of the liver, or several of these combined.

The Miliary Form of Pulmonary Tuberculosis.—Pissavy explains why and how we must distinguish between the four forms of pulmonary tuberculosis, the miliary, the nodular, the pneumonic, and the bronchitic or emphysematous form.

Bacteriologic and Radiologic Tests in Pulmonary Tuberculosis.—Ameuille says that he writes this article to convert the few physicians still left who fail to realize the paramount importance of bacteriologic and radiologic examination in every case of disease of the air passages.

Sterilization by the Sun of Tubercle Bacilli in the Street.—Tecon reports research from Lausanne, Switzerland, the results of which demonstrate that sputa expectorated on the roadway under the usual conditions even when exposed to the sun in summer for from two to fifty-two hours, that is, during nine successive days, induced the development of tuberculosis when guinea-pigs were inoculated from them. All the inoculations gave positive results, in one instance after eleven days of insolation. When the sputa had been deposited on snow beaten down in the driveway, the inoculations were all negative except in one instance in which the insolation had been only for thirteen hours. The sterilizing action of the sunshine is thus practically negligible for clumps of sputum such as the tuberculous expectorate.

Presse Médicale, Paris

Jan. 10, 1920, 28, No. 3

*Volvulus of Sigmoid Flexure. E. Forgue.—p. 21.

*Electric Accidents with House Electric Current. A. Zimmern.—p. 25.

*Protecting Coating for the Stomach. F. Ramond.—p. 27.

Volvulus of Sigmoid Flexure.—Forgue emphasizes that the onset is not so sudden with volvulus as with ileus of other cause, and the symptoms are not so violent from the first. There is no vomiting, at least at first, and it is not fecaloid, while urine excretion continues almost normal—all testifying to the low location of the obstacle. The twisted loop becomes distended with gases, and percussion elicits a metallic resonance. The segment of the colon involved, ballooned by the local meteorism, shows an asymmetrical protrusion of the abdomen without peristaltic movements, but these findings are soon masked by the general distention of the intestines. He insists on the tendency to recurrence; the volvulus returned in 10 per cent. of Kuhn's ninety-five cases, and in nearly 16 per cent. of Filipowicz' thirty-two cases. Resection of the twisted loop has given a high mortality, up to 40 per cent., and the technic is difficult. Hence Forgue concludes this comprehensive study with the advice to be content with palliative measures such as colopexy, simple exclusion of the loop by entero-anastomosis, or enterostomy when the obstruction creates a pressing danger.

Mishaps from Domestic Electric Currents.—Zimmern remarks that the lamentable accident which recently cost the life of a colleague has called attention anew to the dangers of electricity even with low-power currents. Electrocution has occurred with a current of only 110 volts or even less. Conditions in a bath are especially favorable for this, the wet hands and the water clinging to the surface of the body provide exceptionally favorable conditions for conduction of the current if an electric light, or electric

heater, or bell handle, is touched. Jellinek, Lutaud and Fleury have reported cases of this kind, young women being found dead in the bathtub with the metal chain or bulb in their hand. He urges that electric appliances should not be allowed, in bath rooms, within reach of a person in the bathtub. Weiss has reported a case in which a woman was killed in her kitchen as she was holding an electric light in one wet hand and turning on the water faucet with the other. Another woman was killed as she was dusting with a wet cloth the current-distributing apparatus for the electric heating appliances. A man was given an almost fatal shock when he took hold of the chandelier while holding in the other hand an electric light suspended by a wire. Few realize the danger they incur in changing a bulb when the hands or the floor are wet. If there should be some defect in the insulation a serious accident might result. He adds that although he has never heard of an accident of the kind, beyond slight shocks, yet it is well to be warned of the danger, in operating rooms, from manipulating electric lights, cautery, etc., and touching at the same time the water faucet, especially if the floor or walls are moist. The danger from the electric current is for the heart, and the effect is more pronounced when there is an element of surprise. Sleep and general anesthesia attenuate the effect. Rabbits in general anesthesia survive a current that kills at once normal rabbits. Zimmern adds that a number of fatalities have been reported in Germany during the application of Kauffmann's method of treating neuroses, giving a sudden, sharp shock to the patient; he forgets his previous ailments when thus "torpedoed." No explanation could be found in many of the cases for the fatality.

Protecting Coating for the Stomach.—Ramond gives, instead of bismuth, gelose, made from agar and medicated at will, with or without a mixture of gelatin. It is taken like bismuth for the "gastric dressing," one large dose fasting, or half an hour before meals and before retiring. As the dissolved gelose attracts molds, he sometimes used pulverized gelose, 0.10 gm., or a mixture of the same with 0.40 gm. crushed gelatin. This is thrown into a cup of boiling water flavored with peppermint or anise. The boiling is continued for four or five minutes, occasionally agitating; then the fluid is filtered and it is drunk while still hot, before it can coagulate. Or 5 gm. gelose can be boiled gently in a liter of water for twenty or thirty minutes, then passed through fine gauze, and before it cools 200 gm. of some aromatic syrup are added. A tablespoonful of the resulting jelly is dissolved in a cup of very hot water. The patient must change his position to bring this fluid into contact with the inflamed parts of the stomach. This gastric dressing answers the purpose almost if not quite as well as bismuth, and sometimes surpasses it while it has none of the drawbacks of bismuth. Ramond prefers to combine the two, giving bismuth for ten days and then the gelose the rest of the month, or mixing one twelfth of bismuth with the gelose for continuous use.

Progrès Médical, Paris

Dec. 20, 1919, 34, No. 51

*Injection of Oxygen to Aid Roentgenography. L. Mallet and H. Baud.—p. 507.

*Cancer of Uterine Cervix. Potherat.—p. 508.

Treatment of Scabies. L. Bory.—p. 509.

Oxygen as Aid in Roentgenography.—Mallet and Baud expatiate on the harmlessness of intraperitoneal insufflation of oxygen, and on the instructive roentgen findings when this is done. The oxygen is harmlessly resorbed in a day or two; acute peritonitis seems to be the only contraindication.

Cancer of Uterine Cervix.—Potherat remarks that cancer on the vaginal aspect of the cervix resembles an epithelioma of the skin in many respects, as the structure of the mucosa of the vagina is more like skin than the mucosa lining the uterus proper. When operative removal was out of the question, he has known of survivals for five, seven and fourteen years after excision of the cancerous tissues down to the hard zone, where the sharp curet was arrested, and then the lesion was cauterized vigorously with a large nummular thermocautery.

Schweizerische medizinische Wochenschrift, Basel

Jan. 1, 1920, 50, No. 1

*Pulse Findings with "Volume Bolometry." H. Sahli.—p. 2.

*Operations for Goiter. G. Hotz.—p. 6.

*Parallel Skin Tests with Human and Bovine Tuberculins. Bernheim-Karrer.—p. 10.

*Laws Regulating the Multiformity of Symptoms. De Montet.—p. 12.

Research on the Pulse.—Sahli has long insisted that determination of the blood pressure may be misleading unless it is accompanied by a knowledge of the volume of the pulse at the same time. This he estimates by what he calls volume bolometry, and he here describes with illustrations his simple apparatus for the purpose and the numerous instructive findings with it.

Goiter Operations.—Hotz applies on both sides Kocher's method of resecting one half of the thyroid, leaving behind only a small piece. Hotz resects at one sitting nearly the whole of both halves leaving only enough on each side for physiologic purposes. In his 400 operations of the kind, one young man died and necropsy revealed influenza. There was only one other death in the series; this was in a woman of 72, and necropsy disclosed degeneration of the heart. In three cases after-hemorrhage required opening of the wound. The only deficiency symptoms observed afterward were in a young pregnant woman, which subsided under parathyroid tablets, and one case of mild symptoms of hypothyroidism. The recurrent nerves were injured during the operation in 5 per cent. of the first 200 cases; it is not known whether the resulting paralysis has subsided or not, to date. The upper parathyroids are not molested with this technic, but the lower ones are endangered. Other technics sparing more of the gland expose to the danger of recurrence, especially in the quite young. Hotz' operation takes about an hour, but the patient leaves the hospital in about eleven days as the average. He operates under local anesthesia, ligating the four thyroid arteries. Over 12 per cent. of the subjects were only 16 or less. The goiter tissue removed in children averaged 103 gm. He aims to remove all of the thyroid that he can, including the whole of the isthmus. The rectus muscles are severed, and from 60 to 120 ligatures are applied, and sometimes up to half are left in the wound.

Multiformity of Symptoms in Response to Single Stimulus.—De Montet argues that the relations between the various organs and functions are much more extensive than has hitherto been appreciated. The multiformity of the symptoms from a uniform stimulation of the sole, for instance, is evidence of this, he says, as he shows by the findings in a young infant, and in 184 adults, seeking to deduce a general comprehensive law.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 23, 1919, 40, No. 94

*Hemostatic Band in Surgery. U. Nobili.—p. 1019.

Hemostatic Band in Surgery.—Nobili explains the advantages of partly blocking the circulation in the limb or fingers before operating on phlegmons, etc. The aim is more to prevent infectious material being swept into the general circulation during the operation than to avert hemorrhage. In addition to this precaution, Nobili makes a circular incision in the cellular tissue, all in sound tissue, some distance above, in operating on a phlegmon. This cuts off the spread of infectious material by way of the lymphatics, while leaving the arteries intact.

Revista Clínica, Medellín, Colombia

November, 1919, 2, No. 14

The Human Body in Art. Montoya y Florez.—p. 49.

*Permanent Slow Pulse. L. E. Arango.—p. 84.

*Cure of Skin Disease by Intercurrent Acute Infection. J. Restrepo A.—p. 86.

*Code of Ethics.—p. 90.

Slow Pulse.—The pulse of 36 and the physical signs in the young man whose case is described by Arango, suggested mitral insufficiency with stenosis of the aorta. Considerable improvement was observed under 1 gm. of sodium iodid daily, and sodium cacodylate, with small doses of diuretics and laxatives.

Cure of Dermatitis by Intercurrent Acute Infectious Disease.—Restrepo relates that the ulcerating lesions on the legs had persisted for over three years, rebellious to all measures, but they disappeared completely during an attack of erysipelas. The patient was a woman of 44, otherwise healthy. In a second case of chronic dermatitis of the leg in a young man, it subsided likewise during intercurrent measles.

Code of Ethics.—This is a code presented by the Bogotá Sociedad de Pediatría for consideration at the recent national medical congress. Its special points have been summarized in these columns when published elsewhere.

Revista Médica del Rosario

December, 1919, 9, No. 5

*Angioneurotic Edema; Two Cases. D. Staffieri.—p. 293.

*Case of Erythromelalgia. A. Boden.—p. 299.

*Chronic Arsenic Poisoning from Drinking Water. C. Alvarez.—p. 311.

Angioneurotic Edema.—Staffieri summarizes the prevailing views in regard to Quincke's edema, in the statement that it is characterized by abnormally exaggerated excitability of certain nerves which have control of the secretion and circulation of lymph. This hyperexcitability is almost always constitutional, the result of "dysendocrinia" (defective functioning of the endocrine glands), with thyroid insufficiency predominating. This excitability is rendered manifest by influences of different kinds, including some which behave like antigens, inducing anaphylaxis. In the first of his two cases, one side of the throat was affected but there was no inflammation. The young man showed signs of thyroid insufficiency and hypogenitalism, and under thyroid treatment there has been no recurrence of the acute edema of the throat. Atropin and a saline purge relieved the immediate symptoms; it was the first and only attack to date. In the other case there had been fleeting edema at various points during seven years. In this latest attack the face alone was involved, and the edema was so extreme that the eyelids could not be closed. As usual, the edema subsided completely in a few days. The patient was a healthy married woman of 35 with two healthy children and negative Wassermann reaction, and there are no signs of derangement of any of the glands of internal secretion.

Erythromelalgia.—Boden describes what he says is the fourth case of Weir Mitchell's disease to be published in Argentina. His patient is a bachelor of 34 with regular habits, healthy until the development of the erythromelalgia fourteen years ago. Four years later symptoms of Raynaud's disease became superposed on the Weir Mitchell set of symptoms, and the man wandered from hospital to hospital in search of a cure or at least some relief. The left big toe had to be amputated about two years ago, and the wound took seven months to heal. Boden cites the three other cases of erythromelalgia in Argentina, and mentions some still unpublished cases and one reported from Santiago de Chile in 1914. The redness and neuralgic pains are not necessarily restricted to the foot. In Cassirer's compilation of 67 cases both feet were affected in 24, both hands in 2, both hands and feet in 17, one foot in 9, and one hand in 4. Auché has published a case in which there was congestion also in the eyes and testicles during the attacks. No acute or chronic infection or intoxication could be discovered to account for the disease in Boden's case, the patient being apparently free from acquired or inherited taint. The only pathologic finding was atony and ptosis of the colon, and great improvement was realized with treatment addressed to the intestines, repose and dieting. One case is on record in which Raynaud's disease subsided completely after resection of the entire colon, and this confirms the close connection between production of toxins in the sagging bowel and the vasomotor centers which regulate the circulation, especially the tropho-secretory neurons and those regulating the peripheral circulation. If the intestinal disturbances do not yield to medical measures, colectomy should be considered. This would break up the sympathetic-medulla reflex arc and remove the source of the toxins, and it is now under consideration in this case. [In J. J. Ferro's 1919 inaugural thesis at the University of Lisbon, the recent international literature on

erythromelalgia is exhaustively cited. The thesis is reproduced in the *Medicina Contemporanea* 37:380, 1919.]

Chronic Arsenic Poisoning from Drinking Water.—Alvarez publishes two further cases of what he calls Bell-Ville disease, as the first cases of this chronic intoxication from arsenic-containing water were observed at Bell-Ville in northern Argentina. The new cases were in men of 25 and 62 and after abandoning the use of water from a certain well, both recovered completely from the severe clinical picture they presented at first. In the young man the liver was predominantly affected, and ascites required tapping twenty-one times. In both the skin showed dark pigmentation, with scattered white and black dots.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

Oct. 11, 1918, 20, No. 3, German Edition

*Auricular Flutter. S. Yamada.—p. 308.

*Carbohydrates and the Sugar Content of the Blood. K. Sakaguchi.—p. 345.

Auricular Flutter.—Yamada gives eight double-page tracings of the heart action in a man of 40 with nephritis and auricular flutter. This flutter was up to 230 per minute, and was not influenced by any measures, and it never changed to fibrillation, not even under digitalis. The ventricle could not keep pace with the auricle, and the ratio altered under epinephrin to 3:1, and under atropin to 2:1.

Carbohydrates and the Sugar Content of the Blood.—Sakaguchi publishes here the first report of his research on the nature of diabetes. He has been investigating the influence on the sugar in the blood of the amount, kind and time of ingestion of food. It is evident, he says, that the sugar content of the blood fluctuates even in normal conditions. The range, fasting, in the healthy Japanese was found to be between 0.067 and 0.107 per cent.; the average was 0.088 per cent. There was always distinct hyperglycemia after ingestion of from 70 to 100 gm. of glucose. The hyperglycemia reached its highest point in twenty or thirty minutes, and then subsided, with one or two recurring waves.

Berliner klinische Wochenschrift, Berlin

Oct. 20, 1919, 56, No. 42

*Gonorrheal Arthritis. H. Klose.—p. 985.

Antitoxin or Normal Horse Serum? M. Klotz.—p. 987; Idem. K. Dorn.—p. 988.

Effect on Rigor Mortis of the Lack of Postmortal Acid Production in the Muscles. F. Oppenheim and L. Wacker.—p. 990.

*Preservation of Erythrocytes After Death. G. Strassmann.—p. 994.

*Damage of the Eye from Methyl Alcohol Poisoning. W. Bab.—p. 995.

*Microsporia and Its Causative Agent. W. Fischer.—p. 996.

Proposed Reforms in Medical Teaching. O. Lubarsch.—p. 998. Cont'n.

Gonorrheal Arthritis.—During the war period Klose noted a woful increase in gonorrhea. Before the war only 2 per cent. of gonorrheal infections presented gonorrheal arthritis, whereas at present Klose estimates the percentage at 10 per cent. There are several causes: personal indifference, forced and improper treatment of the primary infection, and weakened physical condition of patients due to the effects of war. Since 1909, arthrotomy has been carried out systematically in the Universitätsklinik, Frankfurt-on-the-Main, in certain severe types of gonorrheal arthritis. Definite indications for operative intervention have been set up: In a gonorrheal articular effusion, arthrotomy is indicated if, after one puncture, there is a second effusion, accompanied by considerable stretching of the capsule, together with pain, and also when the condition of the joint indicates a beginning subluxation. In phlegmonous and mixed types, arthrotomy is performed: (1) early, in the course of the first few days of a severe phlegmon, if the patient is plainly losing ground on account of pain and loss of sleep; (2) in general gonorrheal infections that arise from a joint infection; (3) in severe primary infections, with genito-urinary complications, which render vigorous, conservative treatment of the joint infection more difficult; (4) in multiple joint infections that cannot all be treated at one time, after careful selection of the joint for the arthrotomy, and (5) as a routine measure, after three weeks, if during this time vigorous treatment has brought about no perceptible remission of the subjective symptoms; in which case a beginning contracture of the joint caused by

an effusion into the flexor tendons should be watched for and guarded against. By means of roentgenoscopy any beginning shrinking of the capsule, atrophy of parts of the joint, or obliteration of joint outlines can be controlled. The beneficial effects of arthrotomy are due to the getting rid of the toxic tissue fluid, and the relief from pressure afforded the tissues. The pain subsides promptly, and the general condition begins to improve at once. The case is thus shortened by many months. Two or three weeks after the operation the medicomechanic treatment may begin. However, in 14 per cent. of the knee joint infections thus treated by arthrotomy, the injuries that the knee had already suffered, proved to be irreparable, and ankylosis was unavoidable.

Preservation of Erythrocytes After Death.—Contrary to the usual view that red blood corpuscles disintegrate within a few days, or at the latest within twenty to twenty-five days after death of the organism, Strassmann found through examination of a blood effusion from the thoracic cavity of a cadaver exhumed seven months after death, that unchanged, well preserved red corpuscles were still present, whereas of the white corpuscles only lymphocytes were to be seen, and these were somewhat changed in appearance. It appears, then, that the white corpuscles do not resist decay as well as the erythrocytes.

Loss of Vision from Methyl Alcohol Poisoning.—In view of the increasing number of cases of methyl alcohol poisoning, Bab recommends that, in case it does not seem feasible to prohibit the manufacture of wood alcohol, it might be given a disagreeable taste by the addition of small quantities of some harmless substance. This would perhaps be the best way to lessen the danger of its continued use as a beverage. He describes four cases demonstrating the pronounced degenerative processes from the action of the methyl alcohol.

Microsporia and Its Causative Agent.—Fischer describes an epidemic of microsporia in Berlin children. It affected mainly schools, orphan asylums, and public institutions. The causative agent in similar epidemics in the past had been *Microsporon audouini*, but in the present epidemic it seemed to be *Microsporon depauperatum*, a representative of the human type of the microsporon group that had been hitherto unknown in Germany. The clinical aspects of the disease were somewhat different from the usual picture of microsporia in man, in that the inflammation was more pronounced. An abscess developed in four of the 200 cases.

Deutsche medizinische Wochenschrift, Berlin

Oct. 30, 1919, 45, No. 44

*Acute Puerperal Inversion of the Uterus. R. T. von Jaschke.—p. 1209.

*Atypical Erythema Nodosum. G. Denecke.—p. 1211.

Vacuolation in Leukocytes. H. Meyer-Estorf.—p. 1213.

*Treatment of Old Ulcerating Wounds. Dürig.—p. 1215.

A Peculiar Epidemic of Meningitis. Paetsch.—p. 1217.

*Effect of Epinephrin on Blood Pressure. J. Bauer.—p. 1217; Reply. K. Dresel.—p. 1218.

Prophylactic Injections of Friedmann's Tuberculosis Remedy. Brüncke.—p. 1218.

Glycerin as Vehicle for Certain Stains. Hollborn.—p. 1219.

Proposed Reforms in Medical Teaching. J. Schwalbe.—p. 1220. Cont'n.

Acute Puerperal Inversion of the Uterus.—Von Jaschke reiterates that although partial or complete inversion of the uterus is one of the most dangerous complications associated with childbirth, yet prompt and proper treatment materially lessens the danger. Although mismanagement is generally responsible, partial inversions might possibly be caused by traction or relaxation of circumscribed portions of the uterus wall and contraction of adjoining portions. He thinks that in England and America too much weight is attached to local relaxation and unequal contraction. Zangemeister found on examination of the literature that in 98 per cent. of the cases traction played a part. Traction occurs almost always through the medium of the placenta, part or all of which has remained in the uterus. Occasionally, however, a submucous myoma may be a contributing factor. If relaxation of the uterine wall is pronounced, the placenta may exert traction by the force of its own weight, or a short cord may cause a partial inversion during expulsion of the

child. Inversion is favored without doubt by the fundal site and partial adherence of the placenta. Pressure on the relaxed uterus from above, as is applied in Credé's maneuver, produces the same effect as downward traction. No matter how the inversion may have been caused, therapy demands that puerperal inversion of the uterus be reduced at once. Von Jaschke admits, however, that Zangemeister and others oppose this view, maintaining that the shock of reduction, added to the shock caused by inversion, may prove serious. Even in the presence of severe hemorrhage, Zangemeister will not admit of immediate reposition, but endeavors to stop the hemorrhage by means of an elastic bandage fastened about the inverted organ. Von Jaschke cannot accept this teaching, and thinks that the bandaging causes a much greater shock than reduction under profound anesthesia. He regards the danger from infection as so great that its avoidance must be considered the main issue. However, if infection has already set in, he agrees with Zangemeister that the reduction of the inversion is contraindicated and that extirpation of the inverted organ, together with drainage of the Douglas pouch, must be done. But in fresh or recent cases infection is rare, and radical treatment should not be considered unless the inversion has existed at least six hours. He finds that profound anesthesia reduces to a minimum the shock manifestations sometimes occurring during reposition of the uterus. As a prophylactic measure or as a means of combating an already present shock, 2 c.c. of camphor and from 0.01 to 0.02 gm. of morphin will prove beneficial. The technic of the reposition is a delicate one. Brusk procedure is out of place. There should be no forcing of the organ through Bandl's ring, spasm of which can practically always be suppressed under profound anesthesia, aided by the effect of the morphin. Any remaining portions of the placenta may easily be, and should be, removed before the uterus is reverted. The manual technic follows: With the thumb, middle finger and index held in a cone shape, with the tips of the fingers he endeavors very gently to make an upward indentation at the lowest point of the inverted uterus. Sometimes it may be necessary to try another spot near by. When such a dent is produced, the pressure is slowly increased and the finger tips are gradually spread apart so as to cover a larger area. Care must be exercised, however, not to make the indentation broader than Bandl's ring. If this caution is not heeded, failure will result, and operators will be inclined to err and to ascribe their failure to a persistent spasm of Bandl's ring. However, after the indented portion has been carried past the cervical ring, the fingers may be spread out wider. The balance of the operation is usually easy. The still inverted portions are gradually drawn up by the upward rise of the fundus. If a high degree of atony persists, this will make reinversion more difficult. Pressure of the fingers must then be all the more even and steady. In such cases it will be found helpful, as soon as the reinverted portion has been brought up to Bandl's ring, to push gauze into the uterus, alongside of the operating hand. Then, as the reinversion proceeds, the gauze tampon is increased, which will check the hemorrhage, incite contraction and prevent a renewed spontaneous inversion of the uterus. Tamponade of the vagina with wide gauze, inserted in separate layers and tightly pressed together (the Kussmaul tamponade), will insure better results. Von Jaschke admits that there are a few cases in which it may be necessary to resort to instruments, but advises that the manual method be tried first.

Atypical Erythema Nodosum.—Within a few weeks of each other, five young women, whose ages ranged from 16 to 22, presented themselves at the University Clinic in Greifswald with similar skin lesions. Denecke states that on the front and outer side of the lower third of the legs there were red and reddish blue spots just above the ankle. The skin was smooth and shiny. A handbreadth area was swollen. Suction caused the redness to disappear and leave a pale ground. The spots were irregular, clearly circumscribed, and presented a mottled appearance. The skin was firmly attached to the substratum and felt hard. Finger pressure was slightly painful and left no indentation. In fact, it was

difficult to make any impression on the skin. The skin when compressed into folds showed a very fine wrinkling. All five patients presented heart symptoms pointing to a pathologic condition of the endocardium, and all had rheumatic pains in the ankles and some in other joints. The differential diagnosis of the condition presented some difficulty. Denecke mentions half a dozen dermatoses that were considered and excluded before repeated palpation of the affected area led him to his final diagnosis of chronic, recurring erythema nodosum. The differentiation from erythema exudativum multiforme was not so difficult because the appearance of the dermatosis did not rapidly change from day to day; there were no outlying lesions, no patches with elevated edges, no tubercles, no blisters, no scales nor crusts. Sodium salicylate, 5 gm. daily, was the principal therapeutic agent. He comments on the coincidence of five cases, all in girls, and all localized in the same region, the area on the leg between the skirt and the shoe, which is most exposed to wind and weather, and the fact that all were in domestic service, obliged to be much on their feet.

Treatment of Old Ulcerating Wounds.—Wounds with extensive loss of tissue may refuse to heal, or, healing partially, they break down again and ulcerate. Dürig had found healing of such wounds difficult, and, after fruitless attempts to heal them, it became necessary to cover them with a transplant. The cause of the condition no doubt is that the central portions of the wound are not adequately supplied with blood. The scar tissue becomes more fibrous. The blood vessels grow smaller. The scar is deprived of fluid. It shrinks and is put on the stretch. The color changes from red to white, and finally in its center an ulcerous condition is set up. The indications are for an improvement in the blood supply. It occurred to Dürig that a procedure used years ago for the treatment of phagedenic ulcer would be helpful in treating ulcerating scar wounds, namely, lavage with a hot solution of potassium permanganate. Dürig uses for this purpose an irrigation apparatus at an elevation of 2 meters. The port wine red solution of potassium permanganate has a temperature of 40 C. The glass end-piece is fused, leaving only a pinhead opening, so that the wound may be sprayed with a fine, cutting stream. Two liters of the solution are needed for a ten minute lavage, which is done daily. After the lavage a dry dressing is applied. The viscous coating of the wound is often replaced in a few days by healthy granulations, and epithelization, beginning with the edge of the wound, soon covers the whole surface. Even though, because of the extent of the wound, a transplant should be necessary, Dürig finds this preliminary lavage treatment beneficial, as the wound is well cleansed and its size materially reduced.

Effect of Epinephrin on Blood Pressure.—Bauer has found that occasionally the subcutaneous administration of epinephrin in man causes a primary and not inconsiderable lowering of blood pressure that is not soon followed by a rise of pressure.

Münchener medizinische Wochenschrift, Munich

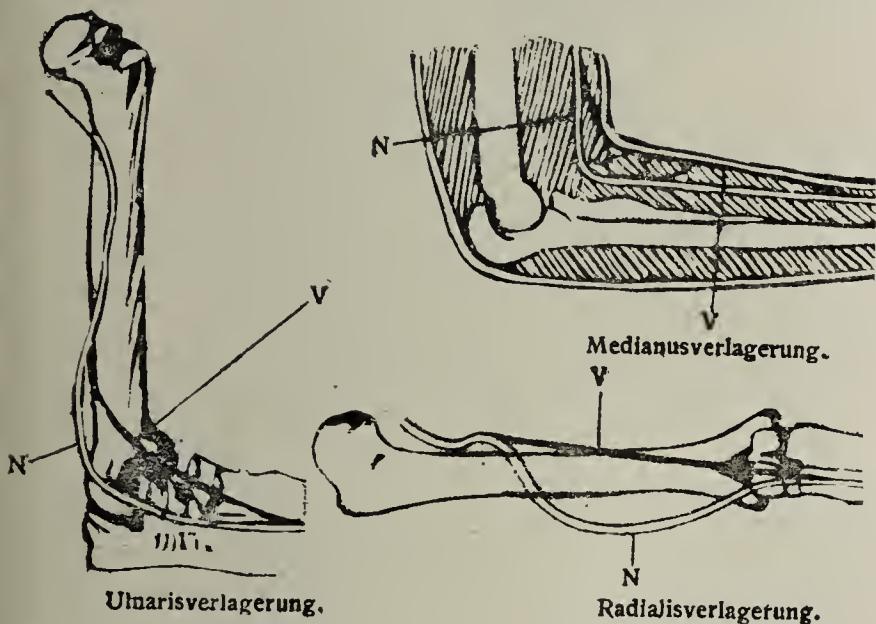
Oct. 31, 1919, 66, No. 44

- *Otogenous Pyemia and Sepsis. B. Heine.—p. 1251.
- *Nerve Shifting and Joint Adjustment in Relation to Primary Nerve Suturing. M. Brandes and C. Meyer.—p. 1256.
- Influence of Thermopenetration on Carcinomatous Tissue. A. Theilhaber.—p. 1260.
- Relations Between Influenza and Tuberculosis. Kayser-Petersen.—p. 1261.
- Treatment of Influenzal Empyema. Bettina Neuer.—p. 1264.
- Mortality from Tuberculosis During the War. G. B. Gruber.—p. 1266.
- Glaucoma in Relation to Exudative Diathesis. Rohr.—p. 1266.
- Nitrobenzene Poisoning. Wandel.—p. 1267.
- Therapy of Malignant Edema and Sepsis. W. Hancken.—p. 1268.

Otogenous Pyemia and Sepsis.—The pyemic and septic forms of otogenous infectious disease may sometimes be differentiated, although frequently, Heine states, they overlap. Remittent and intermittent fever (with or without chills) and metastases characterize the pyemic form. For the septic form, continuous fever, signs of poisoning (prostration, mental disturbance, delirium) and a stormy course are significant. In the septic form we may assume the

presence of increasing numbers of pyogenic bacteria in the blood (bacteremia) resulting in a poisoning of the organism by their toxins; or there may be a pure toxinemia. This toxinemia does not necessarily have its sole starting point in the original focus, as in diphtheria. Kümmler has shown that in other organs of the body (brain, kidneys) secondary bacterial foci may have formed, which maintain the supply of toxins. Heine admits that, exceptionally, this general infection may occur without involvement of the transverse or lateral sinus, but states that such cases are so rare that they may be safely left out of account, so far as indications for operative intervention are concerned. In one case he felt compelled to assume that the source of the pyemic fever was the suppuration in the mastoid process itself. He finds that most frequently the inflammatory process is conveyed to the sinus wall through contact with adjoining diseased bone. In some cases there is disintegration of bone tissue, and granulations form and shoot up along the sinus wall, resulting in an extradural abscess or suppuration around the sinus. He agrees with Haymann that mere inflammation of the sinus wall does not cause a thrombus in the sinus, and, with Lubarsch, that changes in the blood and retardation of the blood stream through the affected area are necessary accessory factors. The formation of a thrombus is gradual, and it arises ordinarily from a parietal coagulum. An obstructive thrombus is seldom formed at the start. Heine describes his mode of treatment in detail, but warns that every case must be considered on its own merits, and treated accordingly; for if one were to follow any single plan of treatment in all cases, more harm than good would often be done.

Nerve Shifting and Joint Adjustment in Relation to Primary Nerve Suturing.—The adjustment of joints so as to make a "cut-off" and save distance for nerve trunks, Bran-



N, normal position of nerve; V, position of nerve after shifting.

des and Meyer remark, has been done for some time, but the shifting of the position of nerves (nervenverlagerung) in order to accomplish a similar purpose dates back to Wrede, who in 1916 published in the *Zentralblatt für Chirurgie* his article on "Nervenverlagerung zur Erzwingung einer direkten Nerven-naht." The authors give an enthusiastic account of what Wrede has accomplished by his nerve shifting procedure. For example, in a 10.5 cm. defect of the median nerve the most that could be gained by adjustment of the elbow and wrist joints was 5 cm.; but, when the proximal nerve stump was removed from its bed in the pronator teres muscle and was embedded on this muscle and the bicipital fascia, as shown in the accompanying illustration, 5 cm. more were gained, so that the nerve could be sutured without any tension whatever. The authors, aroused by Wrede's success to make further research, have made extensive investigations on the cadaver and here publish their results. They have determined the maximal defects that various nerves may have and still permit the stumps to be brought together for primary suturing by means of joint adjustment and

nerve shifting. They also give details as to how various joints should be adjusted in order to provide for shortening the course of different nerve trunks.

Therapie der Gegenwart, Berlin

October, 1919, 60, No. 10

*Dilatation of the Heart with Thyroid Insufficiency. H. Zondek.—p. 361.

*Artificial Esophagus. C. Hirschmann.—p. 368.

Sycosis. M. Michael.—p. 373.

Testing for Eyeglasses. Fehr.—p. 377. Cont'n.

Treatment of Intestinal Disease. G. Klemperer and L. Dühner.—p. 382.

Vaccine Therapy of Furunculosis. H. Schirokauer.—p. 397.

Treatment of Tuberculosis with Living Turtle Tubercle Bacilli. F. Baum.—p. 398.

Dilatation of the Heart with Thyroid Insufficiency.—Zondek warns that dilatation of the heart with hypothyroidism is of common occurrence, and it does not yield to digitalis. Neither the size of the heart nor the diuresis, nor the tendency to cyanosis, shows any modification under the usual heart tonics, but a prompt change for the better is apparent when the deficit in thyroid secretion is made up by thyroid treatment. All the subjective and objective pathologic findings retrogress, he says, and in two months the outline of the heart usually has returned to normal, even when the dilatation had been extreme. The heart disturbances with thyroid insufficiency are characterized by sluggish action and by the relative insignificance of the disturbances in comparison with the degree of dilatation. Electrocardiography serves as a useful guide when to suspend the treatment. When the high thyroid peak has dropped back to normal, the treatment can be resumed.

An Artificial Esophagus.—Hirschmann reports that the outcome in his three cases was so excellent that he does not hesitate to commend his technic for the systematic relief of absolutely impermeable stenosis of the esophagus. One young woman is in the best of health now, a year and a half after the operation. The various steps are illustrated. A short loop of the jejunum is moved to a bed under the skin of the chest, and one end is implanted in the stomach. Then the skin is incised to the right and left of the median line, these parallel incisions 6 or 7 cm. apart. The inner lips of the two incisions are turned back and sutured together, thus forming a skin-lined tunnel from throat to stomach. The stump of the esophagus is brought out through the skin in the neck, and sutured to the upper end of the skin-lined tunnel. Then the lower end of the latter is sutured to the short segment of the bowel loop that has been brought up to bridge the gap between the skin tunnel and the stomach. In all the steps of the operation he is careful to leave sufficient blood supply for all parts concerned.

Zentralblatt für Chirurgie, Leipzig

Jan. 3, 1920, 47, No. 1

*Nearthrosis. A. Bier.—p. 2.

*Means to Facilitate Thyroidectomy. M. Claessen.—p. 9.

Extraperitoneal Laparotomy for Kidney Tumors. J. J. Stutzin.—p. 10.

Nearthrosis.—Bier tries to facilitate the formation of the new bursa in the new joint by injecting gelatin or sodium chlorid solution or inducing accumulation of serum in the joint cavity or leaving the extravasated blood. He gives case reports with each of these methods. None of the methods gives constantly good results, and infection is liable with each of them. In two cases the making of the new joint was followed by fatal infection; in one with an interposed flap of fascia, 250 c.c. of salt solution had been injected. The danger of infection is particularly great when the knee is flexed. He now fills the cavity after the resection with 5 per cent. tincture of iodine, and cleans it out again after a time and then sutures. He has thus treated fourteen joints, including twelve in which the ankylosis resulted from a suppurative process. The iodine induces an acute irritation which thus disinfects the cavity by the natural, biologic means. All healed by primary intention. The after-treatment is more difficult than the operation. He has found that the muscles may promptly recuperate function when they have long been useless on account of ankylosis. In one case the quadriceps rapidly recuperated after twenty years of

disuse from ankylosis due to a tuberculous process in the knee. The extensors are much more apt to atrophy than the flexors. He is convinced further that nervous and toxic influences may be responsible for the atrophy of muscles, more than any other factors. Active exercise is the best means to strengthen a weakened muscle. He only exceptionally applied force to mobilize a joint, but this is often very useful in correcting a nearthrosis that has developed ankylosis.

Thyroidectomy.—Claessen advises passing stout silk around behind the thyroid to lift it up with. He does not pass the silk through the thyroid tissue as this might entail hemorrhage. When these threads are to be left behind, as with partial thyroidectomy, he uses catgut instead of silk. Another use for these catgut encircling slings is to tie off and thus obliterate in time the remaining portion of the thyroid after partial removal. A series of catgut threads were thus tied around the stump, and it harmlessly shriveled up under them in one case described.

Zentralblatt für Gynäkologie, Leipzig

Jan. 3, 1920, 44, No. 1

*Prophylaxis of Thrombosis. H. Fehling.—p. 1.

*Dangers of Transfusion in Obstetrics. E. Opitz.—p. 6.

*Obstetric Hemostasis. E. Seht.—p. 8; Idem. C. J. Gauss.—p. 10.

*Treatment of Gonorrhea in the Female. H. Brauns.—p. 16.

Prophylaxis of Thrombosis.—Fehling declares that we are not so powerless as formerly supposed against thrombosis and embolism. Getting the patients up early after childbirth and operations is a great advance, and systematic exercising is also of great aid in prevention. Even more important is the systematic strengthening of the heart with tonics before and immediately afterward, and he cites figures showing the great improvement in his service since this has been done. He introduced this heart treatment in 1910. Before that he had had thrombosis in 5 per cent. and embolism in 1.25 per cent. in his myomectomy cases; 7.5 and 5.5 per cent., respectively, in his cancer cases, and 4 and 0.7 per cent. in his operations on the adnexa. The corresponding figures since 1910 have been 3.1 per cent. thrombosis and 0 embolism; 2.1 thrombosis and 1 embolism, and 1.4 per cent. thrombosis and 0.5 per cent. embolism. Other prophylactic measures are the bandaging of varicose veins before an operation. This prevents their becoming aggravated. Massage might aid in curing them, or compressed air massage, or obliteration of the varicose veins in the leg by injection of 1 or 2 c.c. of a 1 per cent. solution of mercuric chlorid with equal parts of a 1 per cent. sodium chlorid solution, injected into the vein, avoiding the most dilated portion and repeating as indicated. The patient can go about his business as usual, reclining only when there is a sensation of oppression. Zirn and Linser reported in 1919 that this procedure had been successfully applied in 800 cases without harm. Even with already developed ascending thrombosis, ligation of the vein and excision of the segment might be tried. Although embolism in the saphena is rare, yet this justifies the procedure. Haward has suggested intravenous injection of a 0.5 per cent. solution of citric acid to reduce the tendency to coagulation. Chantemesse for the same purpose has given 15 or 18 gm. citric acid in the course of two or three days before myomectomy. Fehling says that if this does not injure the stomach it seems promising. Riemann and Wolf recommend injection of 1 gm. herudin repeated in four hours, Kuhn injects sugar solution by the vein: experiments on rabbits seem to promise success with this. His formula is 4 gm. dextrose; 0.04 gm. sodium saccharate; 0.85 sodium chlorid and 100 c.c. distilled water, injecting 1 or 2 gm. by the vein. If there is already thrombosis before the laparotomy, or if the subject has previously had embolism, Fehling advises that some of these measures might be tried.

Dangers of Blood Transfusion in Obstetrics.—Opitz has had unfavorable experiences with reinfusion of the blood taken from the abdominal cavity after tubal abortion. In future he will simply leave the blood in the abdominal cavity unmolested. No harm from this was ever observed in the

numerous cases in which this was done in Olshausen's service. The blood seemed to be always rapidly resorbed. The disturbances from autolysis of the blood are fewer and less than those with reinfusion of the blood after it has been cleared out. In two cases in which citrated blood from another person was transfused, serious disturbances followed, fatal in one instance. It was afterwards found that the donor's blood had a strong agglutinating action on the other blood.

To Shut Off the Blood from the Lower Half of the Body.—THE JOURNAL described at the time Momburg's method of hemostasis by constricting the body at the waist line, winding a rubber tube around the abdomen. Seht describes here a contrivance which accomplishes this in a more scientific manner by pressure on the abdominal aorta alone. The instrument is something like a pair of compasses. It encircles the abdomen, and a square jog in one branch fits down over the aorta and presses it back against the spine, flattening it out and closing the lumen. The compression is regulated and maintained with a thumbscrew, and it can thus be very gently and gradually applied and removed, and the resulting ischemia is complete. The device can be applied with the left hand and without moving the patient, the straight branch being easily slipped under the back. The instrument is light and takes up very little space in the physician's bag, and the testimony on all sides is said to be favorable.

Gauss endorses the advantages of a device of the kind, and states that the resulting ischemia has always caused strong contractions in the uterus in his clinical experience with an instrument he devised for the purpose some years ago, with a pad device. He adds that Seht's instrument is



much lighter and simpler, and deserves the preference if it fulfils its promise. He even advises its prophylactic use when there is reason to anticipate too much hemorrhage, and

he has successfully applied it in eleven cases as he describes. He queries whether it might not be applied as a routine measure to ward off the natural loss of blood at childbirth.

Zentralblatt für innere Medizin, Leipzig

Jan. 3, 1920, 41, No. 1

*Vaccination Against Tuberculosis. A. Strubell.—p. 1.

Vaccination Against Tuberculosis.—Strubell says that Maragliano's experience with thousands of children whom he vaccinated against tuberculosis has proved the value of preventive vaccination, but his method of applying it by the Jenner scarification technic is behind the times, and exposes to the danger of secondary infection. Strubell is chief of the veterinary college, and he has been applying on a large scale a vaccine of his own preparation, for man and cattle, which he has patented.

Ugeskrift for Læger, Copenhagen

Jan. 15, 1920, 82, No. 3

*Influenzal Empyema. Anna Sabroe.—p. 63.

*Case of Lethargic Encephalitis. G. R. Ulrich.—p. 71.

Empyema.—Sabroe relates that 94 cases of empyema as a sequel of influenza were treated at the public hospital, with 17 deaths, but the general infection rather than the empyema was responsible for all but 7 of the fatalities. Operative treatment was necessary in 90 of the cases, aspirating and draining, requiring from thirty to 169 days of hospital care, with an average of sixty-seven days. The influenzal empyema was capricious in its course, and required constant oversight, the temperature running up at times, but the general condition kept surprisingly good throughout as a rule.

Lethargic Encephalitis.—Ulrich calls attention to the stormy onset and brief course of the disease in the young man and the total lack of paresis of any kind. Total unconsciousness and convulsions seemed to be the only manifestations of the disease, and recovery was complete in less than two weeks with no memory of the twelve days of the sickness.

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ACIDOSIS IN NEPHRITIS*

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AND

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NEW YORK

The subject of acidosis in nephritis is one of such practical importance that it deserves emphasis from a clinical standpoint. Many significant observations bearing on this general topic have accumulated during the last ten years. In the study of this question, Van Slyke's simple method¹ of determining the alkali reserve of the body with the aid of the carbon dioxid combining power of the blood has been of great assistance. We have utilized this method to excellent advantage since Van Syke's preliminary publication² in 1915.

The term acidosis, although originally coined by Naunyn to apply to the ketosis of diabetes, has come to be used in a much broader sense with the development of our knowledge of this subject. Obviously, acidosis may result either from an abnormal formation of acid substances or, as in nephritis, from a decreased elimination of normally formed substances. Under conditions of health, the blood is uniformly maintained at a constant slightly alkaline reaction through the influence of the bicarbonate, phosphate and proteins of the blood.

The carbonates of the blood have been called by L. J. Henderson the first line of defense. Increased pulmonary ventilation, as occurs with dyspnea or hyperpnea, serves to increase the excretion of carbon dioxid, thus keeping the reaction of the blood within normal limits. In conditions of acidosis, other acids may combine with the bicarbonate, robbing the body of its alkali reserve. Under ordinary conditions, however, the kidneys are able to secrete an acid urine from a nearly neutral blood through the medium of acid phosphate, constituting a second means of defense. From the investigations of Marriott and Howland³ it appears that it is just this factor which breaks down in the acidosis of nephritis. They have found the inorganic phosphates of the blood serum increased to many times the normal in nephritic acidosis, although nephritic cases without acidosis did not show this change. Other means of defense against acidosis are

the blood and body proteins, which are able to take up considerable amounts of acids without marked change in reaction, and the ability to form alkali, i. e., ammonia. The latter factor is of considerable importance in the acidosis of such conditions as diabetes and pernicious vomiting, but apparently of little significance in nephritis.⁴

DETERMINATION OF DEGREE OF ACIDOSIS

A number of different criteria have been suggested as a measure of the degree of acidosis: (1) lowered carbon dioxid combining power of the blood; (2) lowered alveolar carbon dioxid tension; (3) decreased affinity of hemoglobin for oxygen; (4) reduced alkalinity of the blood; (5) increased hydrogen ion concentration of the blood; (6) increased intensity of urinary acidity (hydrogen ion concentration), and (7) the retention of alkali by the body in cases in which the kidney is capable of rapidly excreting an excess of alkali.

All of these have furnished valuable information in the development of our knowledge of this subject, but the first, second and seventh have yielded information of special clinical value. Although the carbon dioxid tension of the alveolar air may readily be ascertained at the bedside with Marriott's simple apparatus,⁵ the information is not as reliable as the carbon dioxid combining power of the blood determined by the Van Slyke method. Nevertheless, the method of Marriott may be of great clinical assistance. That the bicarbonate depletion may roughly be determined by administration of sodium bicarbonate has been pointed out by Sellards,⁶ and by Palmer and Henderson,⁷ and this method has been in practical use for several years. Normally from 5 to 10 gm. of sodium bicarbonate are sufficient to change the reaction of the urine, but in the acidosis of advanced nephritis the deficiency may amount in exceptional instances to as much as 100 gm. of bicarbonate or more.

Palmer and Van Slyke⁸ have recently studied this question rather carefully in connection with the carbon dioxid combining power of the blood. They found that in most pathologic cases the urine did not become more alkaline than blood until a higher plasma bicarbonate had been reached than in normal individuals. This would result in the giving of unnecessary and

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4. Marriott, W. McK., and Howland, John: The Influence of Acid Phosphate on the Elimination of Ammonia in the Urine, *Arch. Int. Med.* **22**: 477 (Oct.) 1918.

5. Marriott, W. McK.: The Determination of Alveolar Carbon Dioxid Tension by a Simple Method, *J. A. M. A.* **66**: 1594 (May 20) 1916.

6. Sellards, A. W.: *Bull. Johns Hopkins Hosp.* **25**: 141, 1914.

7. Palmer, W. W., and Henderson, L. J.: Clinical Studies on Acid Base Equilibrium and the Nature of Acidosis, *Arch. Int. Med.* **12**: 153 (Aug.) 1913; A Study of the Several Factors of Acid Excretion in Nephritis, *ibid.* **16**: 109 (July) 1915.

8. Palmer, W. W., and Van Slyke, D. D.: *J. Biol. Chem.* **32**: 499 (Dec.) 1917.

possibly injurious amounts of bicarbonate, if the administration was continued until the urine turned alkaline, as has been the usual clinical procedure. The bicarbonate retention may therefore indicate a much more severe acidosis than actually exists. Palmer and Van Slyke advise carefully controlling the therapeutic use of sodium bicarbonate. They have calculated that taking 42 pounds as the unit of weight, 0.5 gm. of sodium bicarbonate will raise the plasma carbon dioxid

TABLE 1.—ACIDOSIS IN FATAL CASES OF NEPHRITIS WITH MARKED NITROGEN RETENTION

Case	Age	Sex*	CO ₂ Combin- ing Power,		Days before Death	Remarks	Sodium Bicarbonate Administration		Other Blood Analyses		Period of Observations before Death
			C.c.	per 100					Creat- inin, Mg. per 100 C.c.	Urea N, per 100 C.c.	
1. E. M.	39	♂	12	0		No alkali			28.6	186	3 weeks
2. A. C.	53	♂	29	9		No alkali			22.5	106	2 weeks
3. P. J.	43	♂	31	0		No alkali; operation			20.0	209	4 days
4. L. R.	25	♀	36	0		6 gm. for 8 days; pneumonia			20.0	108	3 weeks
5. E. D.	53	♀	27	14		Receiving alkali			19.8	114	2 weeks
6. N. W.	19	♀	31	9		No alkali until after test			19.2	164	2 weeks
7. E. L.	20	♀	34	1		No alkali			18.9	141	2 weeks
8. R. A.	30	♀	38	3		No alkali; operation			18.7	68	1 week
9. M. M.	40	♀	23	1		No alkali until after test			18.3	246	2 days
10. E. P.	34	♀	32	7		Little alkali; CO ₂ four days previously			17.6	85	2 weeks
11. A. N.	27	♀	12	3		No alkali until after test			17.0	148	2½ months
12. J. H.	29	♂	45	1		Alkali previous day			14.7	77	2 weeks
13. M. P.	25	♂	31	10		No alkali			14.4	141	2 weeks
14. A. M.	44	♂	32	60		Received alkali subsequently			13.5	147	2 months
15. E. P.	40	♀	38	24		Died outside hospital			12.7	116	3 months
16. A. L.	52	♀	32	4		No alkali			12.6	78	5 days
17. M. N.	46	♂	31	13		No alkali			12.5	210	3 months
18. W. W.	30	♂	22	60		Alkali discontinued for some time			12.5	76	5 months
19. J. B.	34	♂	32	240		Received 6 gm. daily for 10 days			12.5	110	11 months
20. F. R.	32	♂	39	6		Receiving colonic irrigation of 2% alkali			11.5	102	1 week

* In this column, ♂ indicates male, and ♀ female.

1 per cent. by volume. In view of this, it is possible to calculate the amount of alkali required to restore the plasma bicarbonate to normal.

The normal range for the carbon dioxid combining power of the blood in the adult, as shown by Van Slyke, Stillman and Cullen,⁹ is from 55 to 75 c.c. of carbon dioxid per hundred c.c. of plasma.

OBSERVATIONS ON ACIDOSIS IN NEPHRITIS

In Table 1 are given observations in twenty fatal cases of nephritis with marked nitrogen retention. These cases were the first twenty in a series of 100 having high figures for the blood creatinin¹⁰ in which observations of the plasma carbon dioxid had been obtained. It will be noted that without exception these cases show a pronounced acidosis, and in two instances, Cases 1 and 11 (compare also Table 2), this was sufficient to have been the immediate cause of death. Only in one case was the carbon dioxid found to be above 40, and here alkali had been given the day previous.

To emphasize the importance of acidosis in nephritis, three groups of two cases each are tabulated in Table 2. It is not believed that detailed case histories would aid especially in any deductions that might be drawn, and

they are therefore omitted. The first two patients suffered from severe chronic interstitial nephritis, showing marked nitrogen retention and acidosis. It is worthy of note that E. M. was up and about at the time of the first analyses, while A. N., after a short stay in the hospital, was at home for a period of seven weeks feeling improved. In both of these cases there was pronounced acidosis, and at the end the carbon dioxid dropped to such a low level as to be incompatible with life. The observations of Whitney¹¹ make it evident that such low figures may be the direct cause of death. As these patients did not receive alkali (until after the last recorded test), the carbon dioxid obviously fell to a lower level than would otherwise have been the case.

W. W. and J. McC. represent cases of chronic nephritis admitted to the hospital with pronounced symptoms of acidosis. Although both patients died about one month after leaving the hospital, they showed considerable clinical improvement, this being coincident with the rise in the carbon dioxid combining power of the blood.

The last two patients, M. McA. and W. C., men of 44 and 49 years, respectively, were cases of acute nephritis showing pronounced acidosis (very marked dyspnea), but ending in complete recovery. Although this type of case is apparently not frequently encountered, it furnishes an interesting contrast to the preceding two groups. W. C. was admitted supposedly in

TABLE 2.—ACIDOSIS IN CHRONIC AND ACUTE NEPHRITIS

Case	Date	CO ₂ Combin- ing Power		Creat- inin, Mg. per 100 C.c. Blood	Urea Nitrogen, Mg. per 100 C.c. Blood	Remarks
		C.c. per 100	per 100			
E. M.	11/30/15	24	17.5	97		Death in chronic nephritis apparently due to acidosis; no alkali given
	12/ 4/15	21	21.5	129		
	12/10/15	26	22.3	132		
	12/17/15	15	24.2	150		
	12/24/15	12	26.7	200		
A. N.	3/12/18	31	8.6	97		Acute exacerbation of chronic nephritis; clinical improvement coincident with rise in alkali reserve; alkali given for a time
	3/26/18	28	12.1	110		
	4/16/18	23	11.2	78		
	5/ 7/18	25	15.2	76		
	5/24/18	12	17.0	148		
W. W.	2/11/16	23	8.5	55		Severe acidosis in acute nephritis with complete recovery
	2/23/16	21	12.5	76		
	3/ 7/16	52	10.4	60		
	4/ 7/16	54	9.5	39		
	5/10/16	22	9.6	56		
J. McC.	12/28/15	20	5.1	64		
	1/ 8/16	56	4.5	39		
	1/11/16	58	5.4	39		
	2/ 4/16	40	4.8	36		
M. McA.	1/25/16	22	4.6	71		
	4/11/16	45	2.7	17		
	5/ 8/17	..	2.4	17		
W. C.	1/15/16	22	3.5	44		
	1/17/16	58	4.1	62		
	1/19/16	56	3.2	53		
	1/28/16	..	1.9	19		
	6/11/18	..	1.8	16		

“uremic” coma. On estimating the creatinin and urea in the blood, however, we were surprised at the comparatively slight nitrogen retention, but an examination of the carbon dioxid combining power disclosed the apparent difficulty. Two infusions of sodium bicarbonate, 12 gm. each, on the fifteenth and sixteenth, produced quite remarkable clinical results, and in less than two weeks the blood findings were normal.

9. Van Slyke, D. D.; Stillman, Edgar, and Cullen, G. E.: J. Biol. Chem. **30**: 401 (June) 1917.

10. Myers, V. C., and Killian, J. A.: Am. J. M. Sc. **157**: 674 (May) 1919.

11. Whitney, J. L.: Studies on Acidosis; The Immediate Cause of Death, and Remarks on the Acidosis of Nephritis, Arch. Int. Med. **20**: 931 (Dec.) 1917.

Several years ago, Peabody¹² stated that the development of acidosis bears little relation to the accumulation of nonprotein nitrogen in the blood or to the phenolsulphonephthalein output, although he pointed out that in the terminal stages of uremia there may be a high grade acidosis. Our experience likewise leads us to believe that there are many cases of nephritis with considerable nitrogen retention that show little acidosis; but this certainly is not true of the more advanced cases. From the data reported in Table 1, it would appear that all fatal cases of chronic nephritis with marked nitrogen retention show a severe acidosis, sufficient in some instances to be the actual cause of death.

What part acidosis plays in the clinical symptoms of so-called uremia is difficult to answer. Patients with pronounced acidosis present a somewhat different clinical picture; but until we possess additional information regarding the cause of uremic symptoms, whether they are due to a toxic base such as methylguanidin, to a deficiency in calcium, or to something else, it will not be possible to clear up this problem satisfactorily. Palmer and Henderson, Sellards, Peabody and Whitney, in the papers previously referred to, have given illuminating discussions of the acidosis problem in nephritis. So far as the acidosis goes, it is now possible to obtain very reliable information from the carbon dioxid combining power of the blood plasma with the relatively simple Van Slyke method; and furthermore, the administration of alkali can be particularly well controlled with this method. Acidosis is a fairly prominent feature of many cases of acute nephritis, and is present in severe form in all terminal cases with marked nitrogen retention.

CONCLUSIONS

All fatal cases of chronic nephritis with marked nitrogen retention show a severe acidosis, sufficient in many instances to be the actual cause of death.

In some cases of acute nephritis and acute exacerbation of chronic nephritis the distress is apparently due to the acidosis, since the judicious use of sodium bicarbonate results in general clinical improvement. With the rise in the carbon dioxid combining power of the blood, the dyspnea and hyperpnea disappear.

12. Peabody, F. W.: Clinical Studies on the Respiration, II, The Acidosis of Chronic Nephritis, Arch. Int. Med. 16:955 (Dec.) 1915.

Child Surveys.—The need for surveys to reveal exactly what a child ought to have in order to be properly reared and what his chances are for getting it under present conditions is one of the topics emphasized in the seventh annual report of the chief of the Children's Bureau of the U. S. Department of Labor. Special investigations made by the Children's Bureau in three American cities show how babies have suffered as a result of the advance in the price of milk. In Baltimore, of 728 children between 2 and 7 years of age, only 29 per cent. are now having fresh milk to drink, as against 60 per cent. a year ago; in Washington, half of those between 2 and 7 years visited by the public health nurses were receiving no fresh milk to drink; and in New Orleans conditions were even worse. Studies of the type recommended by the chief of the Children's Bureau would seek to determine all a child's needs. They would be based on actual living conditions in various types of communities; and would accordingly have a practical and not merely a theoretical value. Through them mothers would obtain an authoritative statement concerning the basic needs of growing children, and communities would be given an insight into the way in which those needs may be met.

HEMOLYTIC ACTIVITY OF SOLUTIONS OF ARSPHENAMIN AND NEO-ARSPHENAMIN*

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In the preparation of solutions of arspnenamin and neo-arsphenamin for administration by intravenous injection, sterile freshly distilled water or saline solutions (generally 0.4 per cent. sodium chlorid in distilled water) are commonly employed as solvents; the solution of arspnenamin so prepared is acid and highly toxic and requires neutralization with an alkali before administration, 15 per cent. solution of sodium hydroxid being commonly used for this purpose. On the addition of sodium hydroxid, the solution becomes very turbid, owing to the precipitation of the insoluble base of arspnenamin; with the further addition of alkali, the solution is neutralized and "clears," with the formation of the soluble monosodium salt. The addition of still more alkali to this clear solution (usually one third of the amount required for neutralization and clearing) results in the hydrogen atoms of both hydroxyls becoming replaced with sodium, and the production of a disodium salt of arspnenamin. Ehrlich originally advised the administration of the monosodium salt (solutions neutralized with sodium hydroxid just to the point of neutralization and clearing), but recently the tendency has been to add a little excess of alkali with the production or partial production of the disodium salt, which has been regarded as somewhat less toxic. Solutions of neo-arsphenamin, being neutral, do not require the addition of alkali.

While the causes and nature of the reactions following the intravenous injection of arspnenamin and neo-arsphenamin are not as yet definitely known, one of us (Kolmer) with Schamberg, Raiziss and Weiss¹ has recently shown that solutions of arspnenamin in water possess hemolytic properties, and that this factor may exert some influence in the pathogenesis of the untoward symptoms following intravenous injections of arspnenamin. Solutions of neo-arsphenamin were reported as being practically devoid of hemolytic properties.

HEMOLYTIC ACTIVITY OF ARSPHENAMIN

The hemolytic activity of solutions of arspnenamin in water may be ascribed to three factors, namely, (1) the direct hemolytic activity of arspnenamin; (2) the hemolytic activity of nonisotonic solvents (water or hypotonic saline solutions), and (3) the hemolytic activity of sodium hydroxid, especially when used in excess for the production of the disodium salt.

When arspnenamin is dissolved in water and the solution is neutralized with sodium hydroxid, some sodium chlorid is produced but never enough to render the solution isotonic; 0.1 gm. of arspnenamin dissolved in water and neutralized with sufficient sodium hydroxid to produce the monosodium or disodium salt yields about 0.0247 gm. of sodium chlorid. *For the*

* From the Dermatological Research Laboratories.

1. Schamberg, J. F.; Kolmer, J. A.; Raiziss, G. B., and Weiss, Charles: Laboratory and Clinical Studies Bearing on Causes of the Reactions Following Intravenous Injections of Arspnenamin and Neo-Arspnenamin, Arch. Dermat. & Syph. 1:235 (March) 1920.

preparation of isotonic solutions, varying strengths of sodium chlorid in distilled water must be used according to the total volume of fluid desired; a salt solution of one uniform strength does not suffice for all concentrations, as thus indicated:

- 0.1 gm. in 50 c.c. isotonic solution requires the use of 0.82 per cent. sodium chlorid solution (0.6 gm. in 300 c.c.).
 0.1 gm. in 40 c.c. isotonic solution requires the use of 0.81 per cent. sodium chlorid solution (0.6 gm. in 240 c.c.).
 0.1 gm. in 30 c.c. isotonic solution requires the use of 0.79 per cent. sodium chlorid solution (0.6 gm. in 180 c.c.).
 0.1 gm. in 20 c.c. isotonic solution requires the use of 0.77 per cent. sodium chlorid solution (0.6 gm. in 120 c.c.).
 0.1 gm. in 10 c.c. isotonic solution requires the use of 0.68 per cent. sodium chlorid solution (0.6 gm. in 60 c.c.).
 0.1 gm. in 5 c.c. isotonic solution requires the use of 0.47 per cent. sodium chlorid solution (0.6 gm. in 30 c.c.).
 0.1 gm. in 4 c.c. isotonic solution requires the use of 0.33 per cent. sodium chlorid solution (0.6 gm. in 24 c.c.).

Since salt solutions varying from 0.8 to 0.9 per cent. may be regarded as isotonic for practical purposes, the standard physiologic sodium chlorid solution (0.85 per cent.) may be used when each 0.1 gm. of arspenamin is dissolved in 30 c.c. or more of saline solution (equivalent to 0.6 gm. dissolved in 180 c.c. or more); possibly the same solution could be used when each 0.1 gm. is dissolved in 20 c.c. (equivalent to 120 c.c. for 0.6 gm.), which is generally recommended; but when more concentrated solutions are employed, the strength of the saline solution varies accordingly and becomes increasingly important, since concentrated solutions of arspenamin are more hemolytic than dilute solutions.

The results of experiments shown in Table 1 were observed by preparing solutions of the acid (non-neutralized) and of the monosodium (alkali added just to neutralization and clearing) and disodium (one third excess alkali) salts of arspenamin in water and isotonic saline solutions in seven concentrations varying from 0.1 gm. in 50 c.c. (equivalent to 0.6 gm. in 300 c.c.) to 0.1 gm. in 4 c.c. (equivalent to 0.6 gm. in 24 c.c.); each of the resulting forty-two solutions was

TABLE 1.—THE HEMOLYTIC ACTIVITY OF ARSPHENAMIN IN VARYING SOLUTIONS FOR HUMAN ERYTHROCYTES *

Arsphenamin	Acid Solutions		Monosodium Solutions		Disodium Solutions	
	Isotonic		Isotonic		Isotonic	
	Water†	Saline	Water	Saline	Water	Saline
0.1 gm. in 50 c.c. (0.6 in 300 c.c.)	0.1	<0.1	0.2	<0.1	0.4	<0.1
0.1 gm. in 40 c.c. (0.6 in 240 c.c.)	0.1	<0.1	0.2	<0.1	0.4	<0.1
0.1 gm. in 30 c.c. (0.6 in 180 c.c.)	0.1	<0.1	0.4	<0.1	0.6	0.2
0.1 gm. in 20 c.c. (0.6 in 120 c.c.)	0.2	<0.1	0.4	<0.1	0.6	0.2
0.1 gm. in 10 c.c. (0.6 in 60 c.c.)	0.2	<0.1	0.6	<0.1	1.0	0.4
0.1 gm. in 5 c.c. (0.6 in 30 c.c.)	0.2	<0.1	0.6	<0.1	1.0	0.4
0.1 gm. in 4 c.c. (0.6 in 24 c.c.)	0.2	0.1	0.8	0.2	1.0	0.6

* This table gives the largest amounts of a 50 per cent. suspension of washed erythrocytes completely hemolyzed by 1 c.c. of each solution of arspenamin after the mixtures had been incubated at 38 C. for one hour and stood in a refrigerator over night.

† Water alone in 1 c.c. caused the complete hemolysis of 0.2 c.c. of cells.

tested for hemolytic activity by placing 1 c.c. in eight test tubes and adding increasing amounts of a 50 per cent. suspension of washed human erythrocytes, thus: 0.1, 0.2, 0.4, 0.6, 0.8, 1.0, 2.0 and 3.0 c.c. These mixtures and controls were placed in a water bath at 38 C. for one hour and then in a refrigerator over night, the occurrence and degree of hemolysis being recorded the following day.

In Table 2 are shown the results of duplicate experiments conducted at the same time with sheep erythrocytes. Additional experiments were conducted in

exactly the same manner, employing defibrinated rabbit blood and rabbit blood collected with sodium fluorid to prevent coagulation, in order to test the hemolytic properties of the solutions under conditions more closely approaching those in vivo and in the presence of plasma or serum.

The results of the four sets of experiments were closely parallel and may be thus summarized:

1. Acid or non-neutralized solutions and solutions of the monosodium and disodium salts of arspenamin

TABLE 2.—THE HEMOLYTIC ACTIVITY OF ARSPHENAMIN IN VARYING SOLUTIONS FOR SHEEP ERYTHROCYTES *

Arsphenamin	Acid Solutions		Monosodium Solutions		Disodium Solutions	
	Isotonic		Isotonic		Isotonic	
	Water†	Saline	Water	Saline	Water	Saline
0.1 gm. in 50 c.c. (0.6 in 300 c.c.)	0.1	<0.1	0.4	<0.1	0.8	<0.1
0.1 gm. in 40 c.c. (0.6 in 240 c.c.)	0.1	<0.1	0.4	<0.1	1.0	<0.1
0.1 gm. in 30 c.c. (0.6 in 180 c.c.)	0.1	<0.1	0.8	<0.1	1.0	0.1
0.1 gm. in 20 c.c. (0.6 in 120 c.c.)	0.1	<0.1	0.8	<0.1	1.0	0.2
0.1 gm. in 10 c.c. (0.6 in 60 c.c.)	0.2	<0.1	1.0	<0.1	1.0	0.2
0.1 gm. in 5 c.c. (0.6 in 30 c.c.)	0.4	0.1	3.0	<0.1	2.0	0.8
0.1 gm. in 4 c.c. (0.6 in 24 c.c.)	0.8	0.2	3.0	0.2	3.0	1.0

* This table gives the largest amounts of a 50 per cent. suspension of washed erythrocytes completely hemolyzed by 1 c.c. of each solution of arspenamin after the mixtures had been incubated at 38 C. for one hour and stood in a refrigerator over night.

† Water alone (1 c.c.) caused the complete hemolysis of 0.6 c.c. of cells.

in isotonic saline solution were decidedly less hemolytic than corresponding solutions in plain distilled water. Even in isotonic saline all solutions of arspenamin showed some hemolysis, owing to the direct hemolytic activity of the drug itself, as previously mentioned. As shown in Tables 1 and 2, while 1 c.c. of a solution of arspenamin in water in the proportion of 0.6 gm. in 120 c.c. caused the complete hemolysis of from 0.6 to 1.0 c.c. of 50 per cent. suspensions of human and sheep erythrocytes, similar solutions in isotonic saline solution hemolyzed only from 0.1 to 0.2 c.c. of the same cells, these and similar results with defibrinated and fluorided rabbit blood indicating that *solutions of arspenamin in isotonic saline solutions are generally from three to ten times less hemolytic than similar solutions in plain distilled water.*

2. Concentrated solutions of arspenamin in water and isotonic saline are more hemolytic than dilute solutions; this is to be expected, owing to the direct hemolytic activity of arspenamin, which effects are naturally most marked in concentrated solutions. For example, while 1 c.c. of a solution of the disodium salt in isotonic saline in proportion of 0.6 gm. of arspenamin in 300 c.c. failed to produce complete hemolysis of 0.1 c.c. of 50 per cent. suspensions of human and sheep erythrocytes, concentrated solutions, as 0.6 gm. in 24 c.c. of isotonic saline, produced complete hemolysis of from 0.6 to 1.0 c.c. of cells, indicating that the latter solution was from six to ten times more hemolytic than the dilute solution. This gradual increase in hemolytic activity of concentrated solutions is shown in Tables 1 and 2, and similar results were observed with defibrinated and fluorided rabbit blood.

3. Solutions of the monosodium salt of arspenamin in water and saline are more hemolytic than acid solutions, and solutions of the disodium salt are more hemolytic than those of the monosodium salt. We have ascribed these differences to the well known and marked hemolytic activity of sodium hydroxid and alkalis in general. Of most practical significance are

the relative hemolytic activities of solutions of the monosodium and disodium salts; for example, 1 c.c. of a solution of the monosodium salt of arspphenamin in isotonic saline solution in the proportion of 0.6 gm. in 120 c.c. produced complete hemolysis of less than 0.1 c.c. of human and sheep corpuscles, whereas similar solutions of the disodium salt caused complete hemolysis of 0.2 c.c. of the same cells. These and similar examples with rabbit blood indicate that solutions of the disodium salt of arspphenamin are from two to eight times more hemolytic than corresponding solutions of the monosodium salt. We may repeat in this connection that solutions of the monosodium salt are designated as those to which just sufficient sodium hydroxid had been added to neutralize and "clear" the solution; solutions of the disodium salt contained this amount of alkali plus one third excess. Whether the monosodium and disodium salts of arspphenamin are more hemolytic than the base has not been determined; we have ascribed the results to the alkali, the solutions of the disodium salt being more hemolytic in proportion to the larger amounts of alkali added to the solutions.

HEMOLYTIC ACTIVITY OF NEO-ARSPHENAMIN

Neo-arsphenamin, in contrast to arspphenamin, is not hemolytic; but *dilute solutions of neo-arsphenamin*

TABLE 3.—THE HEMOLYTIC ACTIVITY OF NEO-ARSPHENAMIN IN WATER AND PHYSIOLOGIC SODIUM CHLORID SOLUTION FOR HUMAN ERYTHROCYTES

Neo-Arsphenamin	Hemolytic Activity	
	Solutions in Water*	Solutions in Saline
0.1 gm. in 50 c.c. (0.9 in 450 c.c.).....	0.6 †	No hemolysis
0.1 gm. in 40 c.c. (0.9 in 360 c.c.).....	0.6	No hemolysis
0.1 gm. in 30 c.c. (0.9 in 270 c.c.).....	0.4	No hemolysis
0.1 gm. in 20 c.c. (0.9 in 180 c.c.).....	0.4	No hemolysis
0.1 gm. in 15 c.c. (0.9 in 135 c.c.).....	0.4	No hemolysis
0.1 gm. in 10 c.c. (0.9 in 90 c.c.).....	0.2	No hemolysis
0.1 gm. in 5 c.c. (0.9 in 45 c.c.).....	<0.2	No hemolysis
0.1 gm. in 4 c.c. (0.9 in 36 c.c.).....	<0.2	No hemolysis
0.1 gm. in 3 c.c. (0.9 in 27 c.c.).....	No hemolysis	No hemolysis
0.1 gm. in 2 c.c. (0.9 in 18 c.c.).....	No hemolysis	No hemolysis
0.1 gm. in 1 c.c. (0.9 in 9 c.c.).....	No hemolysis	No hemolysis

* Water alone (1 c.c.) caused the complete hemolysis of 0.4 c.c. of a 10 per cent. suspension of corpuscles.

† The largest amount of a 10 per cent. suspension of washed human erythrocytes in physiologic sodium chlorid solution completely hemolyzed after incubation at 38 C. for one hour and stood over night in a refrigerator.

in sterile distilled water are hemolytic, whereas concentrated solutions are not; both dilute and concentrated solutions in physiologic sodium chlorid solution (0.85 per cent. sodium chlorid in distilled water) are without demonstrable hemolytic properties.

The results of experiments conducted as described above, except that washed human corpuscles in 10 per cent. suspension were employed, are shown in Table 3. Duplicate tests were conducted with defibrinated and fluorided rabbit blood.

When neo-arsphenamin is dissolved in water, some inorganic matter is produced, including sodium chlorid. The exact amount of sodium chlorid produced by a given amount of the drug remains to be determined; but it would appear, according to our results, that when 0.9 gm. of neo-arsphenamin is dissolved in 27 c.c. of water, enough salt is furnished to render the solution isotonic. This indicates that in 3 per cent. solutions of neo-arsphenamin there is produced somewhere in the neighborhood of 0.7 per cent. inorganic salts responsible for isotonicity or, in other words, the solution of 0.9 gm. of neo-

arsphenamin in about 30 c.c. of water produces about 0.2 gm. of these salts sufficient for rendering the water isotonic. As shown in Table 3, dilute solutions of neo-arsphenamin (0.9 gm. in 90 c.c. or more of water) are decidedly hemolytic because the inorganic salts are too highly diluted with water; solutions of 0.9 gm. in from 36 to 50 c.c. are slightly hemolytic, while solutions of 0.9 gm. in 30 c.c. or less of water are nonhemolytic. These results would have been more striking if 50 per cent. suspensions of corpuscles had been used, because a 10 per cent. suspension in saline solution, as employed in these experiments, carried over more isotonic sodium chlorid solution than a 50 per cent. suspension of cells.

As shown in Table 3, all solutions of neo-arsphenamin in physiologic sodium chlorid solution were nonhemolytic; unquestionably, all solutions, and particularly the concentrated solutions, were hypertonic by reason of the addition of the sodium chlorid liberated by the solution of the drug, but none of the solutions produced hemolysis.

PRACTICAL SIGNIFICANCE

The practical significance of these results depends almost entirely on the importance of intravascular hemolysis following the intravenous administration of arspphenamin and neo-arsphenamin; if hemolysis is held responsible for some of the untoward effects following the administration of these drugs, the results are of considerable practical importance and clearly indicate the adoption of certain steps in the technic of administration calculated to reduce the degree of hemolysis. Animal tests consisting of the intravenous injection of rats with 2 per cent. solutions of the disodium salt of arspphenamin in water and in isotonic saline have not shown constant differences in toxicity; similar tests employing 4 per cent. solutions of neo-arsphenamin in water and physiologic sodium chlorid solution have yielded closely similar results so far as life or death of the experimental animals were concerned. Possibly these tests are not sufficiently delicate for eliciting the effects ascribable to hemolysis alone; abundant clinical experience has shown that solutions of arspphenamin in water are well borne, and some physicians believe that the solution of the disodium salt of arspphenamin is better borne than that of the less hemolytic solution of the monosodium salt. However, comparative studies may show differences and a decrease of reactions in favor of the use of the less hemolytic solutions; we are not aware of such studies having been made on a sufficiently large scale to be conclusive, but suggest the advisability of conducting the investigation by reason of the very important practical value of the subject.

TECHNIC FOR REDUCING HEMOLYTIC ACTIVITY

While hemolysis in vivo may be insufficient to produce appreciable harm, it would appear quite certain not to do good, and it is advisable to reduce as much as possible the hemolytic activity of solutions of arspphenamin and neo-arsphenamin; these objects may be obtained by observing the following points in technic:

1. By administering neo-arsphenamin dissolved in sterile physiologic sodium chlorid solution instead of plain distilled water.
2. By preparing solutions of arspphenamin in a saline solution of sufficient strength to render the solution isotonic. The strength of the saline depends on the

concentration of the drug; for example, solutions of 0.6 gm. of arsphenamin in 120 c.c. or more, and of 0.4 gm. in 80 c.c. or more, may be made with physiologic sodium chlorid solution, whereas more concentrated solutions require from 0.3 to 0.7 per cent. saline as described above to secure isotonic solutions, according to the concentration of the solution of arsphenamin the physician is accustomed to prepare. The strength of the saline is the same for solutions of both the monosodium and disodium salts. Probably sterile physiologic sodium chlorid solution may be used for preparing the concentrated solutions of arsphenamin; but the resulting solutions would be hypertonic. These hypertonic solutions, however, are not likely to prove hemolytic, as experiments have shown that solutions of sodium chlorid in distilled water may be as high as 7 per cent. before producing hemolysis of fresh citrated human blood.

3. By avoiding the intravenous administration of concentrated solutions of arsphenamin for the reasons already given, concentrations of 0.6 gm. of arsphenamin in 60 c.c. or less of water or isotonic saline markedly increase hemolytic activity; more dilute solutions, as 0.6 gm. in from 120 to 180 c.c. of water or saline, are much less hemolytic.

4. By giving the injections slowly rather than rapidly, and particularly if concentrated solutions are being administered with a syringe; with slow injections there is more opportunity afforded for dilution of the hemolytic solution of arsphenamin with blood plasma and consequent reduction in hemolytic activity.

5. By avoiding the use of an excess of sodium hydroxid; whether solutions of the disodium salt are less toxic than solutions of the monosodium salt is yet to be determined in a conclusive manner. From the standpoint of hemolysis alone, the solution of monosodium salt (just enough alkali added to neutralize and "clear" the solution) is preferable to solutions to which one third excess of alkali has been added; probably the practice of adding enough alkali just to neutralize the solution plus one fifth more will prove the best practical procedure.

CONCLUSIONS

1. All solutions of arsphenamin are hemolytic, owing primarily to the direct hemolytic activity of arsphenamin itself.

2. Solutions of arsphenamin in isotonic saline solution are from three to ten times less hemolytic than solutions in water.

3. The hemolytic activity of solutions of arsphenamin in water and isotonic saline is unavoidably increased by the addition of sodium hydroxid for purposes of neutralization; the addition of an excess of alkali increases hemolytic activity.

4. Concentrated solutions of arsphenamin in water and isotonic saline are more hemolytic than dilute solutions.

5. Neo-arsphenamin is not hemolytic.

6. Dilute solutions of neo-arsphenamin in water, as 0.9 gm. in 90 c.c. or more of water, are hemolytic, owing to hypotonicity of the solution. Concentrated solutions, as 0.9 gm. in 30 c.c. or less of water, are not hemolytic, owing to the presence of sufficient inorganic salts from the drug to render the solution approximately isotonic.

7. To avoid hemolysis in the administration of dilute solutions of neo-arsphenamin, sterile physiologic

sodium chlorid solution prepared of freshly distilled water should be used; when the concentrated solutions are administered (each 0.1 gm. dissolved in 3 c.c. or less), sterile distilled water may be employed.

8. The degree of hemolysis produced by the administration of arsphenamin may be lessened (*a*) by using instead of water sterile saline solutions of such strength as to render the solutions isotonic; (*b*) by avoiding the administration of concentrated solutions; (*c*) by carefully neutralizing and "clearing" the solution with sodium hydroxid, counting the drops or otherwise measuring the amount necessary, and adding not more than a fifth of this amount in excess, and (*d*) by giving the injections slowly so as to permit gradual mixing and dilution of the solution with the blood.

DIFFERENCES IN PATHOLOGY OF PANDEMIC AND RECURRENT FORMS OF SO-CALLED INFLUENZA

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IN New York City the first recurrent epidemic of so-called influenza, now fortunately at an end, presented certain noteworthy differences from the pandemic disease which prevailed in the latter part of 1918. The recurrent disease, while it incapacitated thousands, pursued a milder course, complicating pneumonias were relatively few, and the death rate, of course, did not approach the appalling figures of the previous eruption. On the other hand, the recurrent disease was characterized by a greater variety of pulmonary lesions—among other things, by concomitant semipurulent pleural exudates, by multiple pleural and subpleural abscesses, by frequent and extensive purulent invasion of the interlobar and interlobular septums of the lungs, by the formation of solitary, oftener multiple, discrete or confluent abscesses of the parenchyma, and by an extraordinary range of pneumonic lesions. The pathologic anatomy of the recurrent disease is important, not only from the standpoint of the diagnosis and treatment of the acute process, but also because the nature and distribution of the anatomic changes are such that we may expect both immediate and remote sequelae, some of which will probably demand operative interference.

The pandemic of 1918 is fresh in memory; but for purposes of comparison it may be recalled that the disease was strikingly abrupt in onset and that pneumonic complications were seldom absent, that they occurred early, progressed with amazing rapidity, and yielded a high mortality. At necropsy, the changes in the lungs were so constant that the anatomic diagnosis of so-called influenzal pneumonia could be postulated with almost absolute certainty, even in the absence of any knowledge of the clinical history. Variations occurred, of course, but were numerically inconsiderable. For example, in the first epidemic, the pleura was almost invariably free from signs of exudate. The inflammatory changes in the lungs, commencing in the deeper portions of both lower lobes apparently simultaneously, and progressing rapidly,

toward the periphery, often spared many intervening or surface lobules. The pleura almost always escaped literally, it would appear, because death took place before the pleura had time to react. In certain localities, empyema frequently occurred as a sequel to pneumonia; but the rapidly fatal pneumonias were seldom actually accompanied by inflammatory changes in the pleura. In the recurrent epidemic, on the contrary, many hundreds came down with a disease of comparatively trifling proportions; pneumonic complications, when present at all, were late and progressed without unusual rapidity. In the recurrent disease, the anatomic picture was extremely variable, so much so that, in order to classify the pleural and pulmonary changes, one must resort to the process of grouping; and between groups and the individual members of different groups there are numerous gradations.

DEATH FROM ASPHYXIA WITHOUT PNEUMONIA

Near the close of the epidemic of 1918, one of us¹ described a variety of so-called influenzal infection which was characterized anatomically by generalized intense congestion of the viscera, without evidences of pneumonic lesions, or attended by lesions of such small size as to be negligible. Death was accompanied by signs of asphyxia and, at necropsy, the right side of the heart was found to be immensely distended by deep bluish black fluid and clotted blood. The lungs were large, heavy and deep bluish, and the pleura was thin, smooth and glistening. On section, the cut surface was of the smoothness of velvet, and pressure yielded large amounts of dark fluid blood with or without an admixture of dirty, pinkish, edematous fluid. The mucosa of the larger bronchi was covered by a thin sheeting of whitish exudate, beneath which the membrane was swollen and intensely injected. Virtually every other organ in the body was injected to a corresponding extent. In the recurrent epidemic we have encountered five cases of identical nature. In all of them poisoning by wood alcohol was suspected because of the intense and widespread injection of the tissues, particularly the lungs and brain. Chemical investigation of the viscera in every case, however, was negative. Of the cases observed in 1918 and 1920—seven in all—the clinical histories were obtainable in six and showed that the patients had been ill for periods varying from a week to twenty-one days with cyanosis and generalized aches and pains, prostration, elevation of temperature, injection of the pharynx, and numerous moist and squeaky râles scattered over both sides of the chest. In two cases, signs of meningeal irritation were present in the form of muscular twitchings. In one case of the seven, death was sudden.

EMPYEMA AND PULMONARY ABSCESES

In the recurrent epidemic, forty-five cases were investigated by necropsy at Bellevue Hospital. Of this number, the pleura was involved in twenty-seven (60 per cent.). Of the twenty-seven cases, effusions occurred into the pleural cavity in eighteen, or forty per cent. of the total number of cases observed at necropsy; in twelve cases (26.6 per cent.), the effusions were semipurulent and unilateral in distribution, and in two cases bilateral; the remaining four were frankly purulent—two bilateral and two unilateral.

Of the twenty-seven cases of pleural involvement, multiple small subpleural abscesses occurred twelve times (44.4 per cent.) and of these, six were associated with semipurulent effusions and one with frank empyema. All of the seven cases of small subpleural abscesses associated with pleural effusions were found to be accompanied by abscesses in the parenchyma of the lung, the latter being relatively much larger in size. In the remaining five cases of subpleural abscesses, purulent foci in the parenchyma of the lung were absent, and there were no signs of pleural effusion, although the pleura was the seat of edematous fibrinous exudate in every instance. The association of multiple subpleural abscesses with pleural effusions and with abscesses in the parenchyma of the lung is of obvious surgical significance. On the other hand, it appears that multiple small subpleural abscesses may exist alone without giving rise to secondary effusions into the pleura. In the presence of such abscesses, however, it would be rather far fetched to assume that an accompanying effusion represents an independent infection of the pleura. While we have no anatomic evidence to offer that subpleural abscesses of the type described in this paper bear a direct causative relationship to empyema, it is quite probable that if an individual with small subpleural abscesses survives sufficiently long, rupture of or seepage through might readily infect the pleura with the secondary formation of seropurulent or purulent effusions. In short, in the recurrent disease there were cases of pleural effusion, purulent or semipurulent, which were associated with a combination of subpleural and parenchymal abscesses; there were other cases in which subpleural abscesses occurred alone and were not associated with effusions into the pleural cavity; in still other cases, pleural effusions occurred independently of abscess formation either in the pleura or in the lungs.

Of the forty-five cases, sixteen were associated with the presence of intrapulmonic abscesses (35.5 per cent.). In only one of these cases was the abscess solitary. The others were multiple, of irregular distribution, some bilateral, others unilateral, some in the lower lobes, others in the upper. The abscesses varied in size from minute affairs to purulent foci approximating 2 or 3 cm. in diameter. In one case, the upper lobe of the lung was almost completely replaced by multiple discrete or intercommunicating cavities.

THE PLEURAL CHANGES

The inflammatory changes in the pleura presented marked variations:

(a) In those cases of pneumonia in which the changes in the lung were obviously of the more acute variety, localized sheets of edematous fibrinous exudate were scattered over the surface of the consolidated lung, and when stripped away left an opaque, finely granular, deep bluish surface, scattered through which innumerable minute hemorrhagic specks were often discernible. In such cases, the exudate was practically never attended by the excessive accumulation of fluid in the corresponding pleural cavity.

(b) A second group of cases was characterized by the extensive deposit of fibrinous material over the surface of the lung, the membrane being thick, tough, opaque, dirty yellowish white, firmly attached, and often thrown into innumerable small corrugations. These membranous deposits were obviously in proc-

1. Symmers, Douglas: The Significance of the Vascular Changes in the So-Called Pandemic Influenza, *New York M. J.* 110: 789 (Nov. 15) 1919.

ess of organization, and were invariably associated with excessive accumulation of semipurulent fluid exudate in the pleural cavity.

(c) In a third group of cases, the pleura was the seat of diffuse or patchlike collections of succulent, yellowish exudate which penetrated the lung substance at irregular intervals. Section of the consolidated lung in such cases showed thick, edematous prolongations extending from the pleura and surrounding individual lobules or small groups of lobules, not alone at the periphery of the lung, but deep in its substance. In many instances the interlobar septums were extensively invaded, the lobes were firmly glued together, and not infrequently collections of fluid exudate were included between them.

(d) In a fourth group of cases, the pleura presented solitary or multiple, pea-sized or slightly larger, rounded projections which were yellowish, soft in consistency, and, on section, released moderately thick, yellowish, cloudy fluid. These small abscesses lay in or immediately beneath the pleura and were often associated with quantities of seropurulent fluid in the dependent portions of the cavity. The intervening pleura was usually the seat of irregular or diffuse collections of edematous fibrinous exudate. The external covering of the abscesses was intact as far as the unaided eye could determine. Microscopic examination of the pleura in these cases showed the presence of rounded or elongated, circumscribed masses of polymorphonuclear leukocytes enclosed in a meshwork of finely fibrillated fibrin, the whole lying in or just beneath the pleura, sometimes surrounded by a thin but distinct layer of connective tissue representing, apparently, the result of proliferation of the walls of the lymph vessels. In certain of these minute abscesses the limiting connective tissue contained small, injected blood vessels.

It is obvious that the changes in the pleura are of extreme importance, not only from the standpoint of immediate effects, but because they are such that, if the patient survives, sequelae may be expected in a certain proportion of cases in the form of organization of the pleural membranes, with complete or partial obliteration of the cavity and interference with the movements of the corresponding lung, chronic diffuse or sacculated pleural or interlobar empyemas, and chronic interstitial interlobar pleuritis or interlobular pneumonia following organization of the exudate in the pleural extensions. In the same way, one seems justified in the prediction that residuums of pulmonary abscesses may occasion trouble in a certain number of cases in the form of gangrene of the lung following invasion by putrefactive bacteria, organization of the abscess walls with the overgrowth of connective tissue, and the formation of bronchiectases, expectoration of pus from bronchial fistulas, and the like.

PULMONARY LESIONS

In the pandemic of 1918, pneumonia was an almost constant occurrence. The prevailing type was a confluent lobular hemorrhagic and exudative lesion of bilateral distribution associated with areas of acute vesicular emphysema. In the recurrent disease, as we saw it at Bellevue Hospital, the attendant pneumonia conformed to no anatomic type. Of the pulmonary changes, the nearest approach to uniformity was found in the five cases marked by diffuse and intense congestion of the lungs and of virtually every other organ

in the body, with dilatation of the heart and death from asphyxia without signs of pneumonia, or with pneumonic foci which were numerically and geographically insignificant. Of the forty-five cases, only three were sufficiently characteristic to be classified with the variety of pneumonia that prevailed in the pandemic sweep. The remaining thirty-seven cases represented a conglomeration of pneumonic lesions, scarcely any two of which bore the same essential features. Among these, however, we were enabled to recognize a group, the members of which seemed to bear a certain general resemblance to the confluent lobular pneumonia of 1918. In these cases both lungs were involved, the lower lobes to a greater extent than the upper. The pleura covering the consolidated areas was irregularly strewn with fibrinous exudate and more or less richly sprinkled with hemorrhagic petechiae, and areas of acute vesicular emphysema were occasionally to be observed. The splotchlike hemorrhagic extravasations in the pleura, so frequently encountered a year ago, were seldom discernible. On the other hand, the consolidated portions not uncommonly showed large nodular or streaklike, firm, dark slate-blue elevations which, on section, revealed a smooth, velvety, bluish black surface, rich in blood—the so-called marantic infarctions or, better, massive hemorrhagic extravasations. The cut surface of the lungs as a whole presented extreme variations both in appearance and in consistency, owing to different combinations of dull reddish or deep bluish or grayish red lobular consolidations, confluent lobules of dull white appearance and semifluid consistency, inflammatory edema, abscess cavities varying in size from the head of a large pin to that of a crabapple, and filled with moderately thick whitish pus, the picture being still further complicated on occasions by the intersection of cream colored bands of infiltrated pleura that surrounded lobules or groups of lobules or that bound one lobe to another. In addition, the mucosa of the larger bronchi was swollen, deep bluish red, and of velvety smoothness. In three cases, large portions of a lobe were consolidated in such fashion as to resemble ordinary croupous pneumonia.

We do not mean to convey the impression that any single group of pneumonias in the recurrent epidemic presented the above described features with anything approaching regularity. On the contrary, as we have already stated, no two sets of pneumonic lungs presented the same essential features in the same essential combination as did the prevailing pneumonia of the pandemic year. Nevertheless, it is possible to select individual features from the array of pneumonias that accompanied the recurrent epidemic, and from them to reconstruct a composite picture of the pneumonia which characterized the pandemic.

Microscopically, the changes in the lung were correspondingly variable. The capillary vessels were universally engorged, intra-alveolar hemorrhages were frequent—sometimes discrete, at other times confluent. Certain vesicles were partially or completely filled by coagulated serous fluid, entangled in which were a few red cells or an occasional round cell. Other vesicles were filled by polymorphonuclear leukocytes and fibrin, and through necrosis and confluence of these, the majority of abscesses appeared to arise. The frequent and abundant appearance of fibrin was in contrast to the lungs of the pandemic disease, in which fibrin threads were rarely demonstrable and then in isolated

localities and small numbers. The interlobar pleural extensions were frequently enormously thickened through the infiltration of polymorphonuclear leukocytes and the deposition of variable quantities of fibrin. Most of these prolongations were ribbon-like in shape but not infrequently became oval or rounded and centrally necrotic; in this way, other abscesses were formed. In still other instances, the intervesicular venules and arterioles were thrombosed, and the exudate in the immediate vicinity showed large areas of necrosis. The smaller bronchi were distended by polymorphonuclear leukocytes, and their epithelial cells were desquamated.

HEART

In the pandemic of 1918, the heart muscle in the majority of cases was deeply congested but otherwise well preserved, both as far as the naked eye and microscopic changes were concerned. In the recurrent epidemic, acute parenchymatous degeneration occurred with great frequency, the heart muscle being flabby, opaque and friable. The immediate cause of death in both epidemics was to be found in immense dilatation of the heart, particularly the right side, the cavities of which were often filled to the point of distention by deep bluish red fluid and partially clotted blood. In one of the Bellevue Hospital cases during the recurrent epidemic, the pericardium was the seat of a semipurulent effusion out of which a pure growth of pneumococcus was secured. With this exception, the pericardium showed no changes worthy of record.

KIDNEYS

In the recurrent epidemic, acute parenchymatous degeneration of the kidneys occurred more frequently and in a more severe form than in the previous disease, the kidneys often being swollen, edematous and flabby, easily torn, and their markings obscured or irregular in distribution. Microscopic examination revealed, in addition to widespread congestion, granular changes in the epithelial cells of the convoluted tubules, occasionally in those of the glomerular tufts.

JAUNDICE

Of the forty-five cases investigated postmortem at Bellevue Hospital, jaundice occurred in only four, and was slight in extent, being limited to the face and upper portions of the chest. At necropsy, a number of factors appeared to participate in its production, namely, congestion and edema of the papilla of Vater and the surrounding mucous membrane of the duodenum, and the presence of mucoid secretions in the larger bile ducts, together with congestion and parenchymatous degeneration of the liver proper.

MISCELLANEOUS COMPLICATIONS

In the recurrent epidemic, degenerative changes in the rectus muscles were observed in Bellevue Hospital only once, and were of mild degree (Zenker's degeneration). In the previous epidemic, this variety of muscle change was encountered in a considerable proportion of cases, and not infrequently was attended by rupture and extravasation of large quantities of blood into the sheath of the muscle, occasionally followed by secondary infection and abscess formation. In another case in the recurrent epidemic, an abscess was found at the hilum of the right testicle associated with a solitary abscess of the upper lobe of the right lung occurring

in a hemorrhagic variety of lobular pneumonia. The same patient presented multiple effusions into the joints.

BACTERIOLOGY

Bacteriologic examination of the pleural fluid removed surgically and sent to the laboratory, together with that encountered at necropsy, revealed streptococci in most instances, occasionally *Staphylococcus aureus* and pneumococci. Bacteriologic examination of the pus in the intrapulmonary abscesses almost invariably yielded a pure growth of *Streptococcus hemolyticus*, but occasionally *Staphylococcus aureus*. In three cases, *Streptococcus hemolyticus* was isolated in pure culture from the blood. In the pneumonic exudates themselves, the prevailing micro-organism was a streptococcus. In occasional instances, influenza bacilli and pneumococci were isolated in combination with one another or with streptococci. There were three cases in which massive portions of a lobe were consolidated in such fashion as to resemble ordinary croupous pneumonia. In all of these the exudate was sticky. In two, *Bacillus mucosus-capsulatus* was isolated, in the other *Streptococcus mucosus*. In three other cases, streptococci were isolated from the blood during life; and all of them, at necropsy, presented abscesses of the lungs.

SUMMARY AND CONCLUSIONS

1. The first recurrent epidemic of so-called influenza in New York presented anatomic variations from the pandemic disease of a year before, (a) in the form of frequent and widespread inflammatory involvement of the pleura characterized by semipurulent and purulent exudates occurring in immediate association with pneumonic changes; (b) by multiple small pleural or subpleural abscesses; (c) by purulent infiltration of the interlobular and interlobar pleura, and (d) by solitary, oftener multiple, discrete or confluent intrapulmonary abscesses varying in size from a few millimeters to several centimeters.

2. In the pandemic disease of 1918, the participation of the pleura in the pneumonic process was conspicuous by its rarity. In the recurrent epidemic, pleural involvement occurred in 60 per cent. of all cases; and in 40 per cent., purulent or semipurulent effusions were present.

3. In the epidemic of 1918, intrapulmonary abscesses were virtually unknown accompaniments of the pneumonic process. In the recurrent epidemic, they were encountered in 35.5 per cent. of all cases. Of the total number of cases attended by pleural involvement (twenty-seven in all), multiple small pleural or subpleural abscesses occurred in twelve, or in 44.4 per cent.

4. As a result of the recurrent disease, sequelae may be expected in the form of (a) organization of the inflamed pleural membranes with partial or complete obliteration of the cavity and interference with the excursions of the corresponding lung; (b) delayed, diffuse or sacculated pleural or interlobar empyemas; (c) fibrosis of the lung following organization of exudate in the interlobar and interlobular septums of the pleura, and (d) gangrene of the lung and bronchiectatic cavities following secondary changes in intrapulmonary abscesses.

5. In the epidemic of 1918, pneumonia was virtually constant, both in point of incidence and in conformation to type. In the recurrent disease, pneumonia was a relatively infrequent event, and the anatomic vaga-

ries in the distribution and structure of the lesions were so numerous that no two sets of lungs were similar in appearance, and often one lung differed markedly from its fellow.

6. In the pandemic disease of 1918, acute degenerative changes in the heart muscle, liver and kidneys were neither frequent nor intense. In the recurrent disease, they were both common and severe. In the pandemic, the blood cultures were almost invariably sterile; in the epidemic, streptococcal septicemia occurred, we estimate, in about 10 per cent. of all pneumonias.

YELLOW FEVER CONTROL IN ECUADOR

PRELIMINARY REPORT

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GUAYAQUIL, ECUADOR

The files of the National Board of Health of Ecuador show that the first recorded epidemic of yellow fever in the country occurred in the city of Guayaquil in the year 1842, and it was estimated at that time that one half of the population of the city died from this disease during the epidemic.

Yellow fever was probably introduced into Ecuador from Panama by the earlier settlers soon after the appearance of the disease at Panama, and has probably been present in Ecuador since that time, notwithstanding the fact that the records of the sanitary department report as many as three consecutive months in one year having passed without a single recognizable case of the disease. It undoubtedly was present, but in a type so benign as not to be easily diagnosed, especially in children.

The Gorgas commission of the International Health Board in a world survey for endemic yellow fever centers reported that this disease could be "eradicated from the west coast of South America by eradicating it at Guayaquil, Ecuador," and recommended that the attack be made by destroying the *stegomyia* breeding places in that city.

Arrangements were entered into with the Republic of Ecuador for a cooperative campaign with its national health agency on the following basis:

1. The National Board of Health of Ecuador would supervise the isolation of yellow fever patients and fumigation of houses as might be attempted.
2. The International Health Board would concentrate its efforts on mosquito-proofing the necessary water receptacles, that is to say, antilarvae measures.

The built-up area of Guayaquil occupies about 3 square miles, has a population of 90,000, and contains nearly 6,000 buildings. The average annual rainfall is 60 inches, and occurs principally during the months of January, February, March and April—a relatively short and light rainy season for a tropical city. The elevation of the city above mean tide is about 2 meters, and the topography is that of a plane.

The water supply is taken from a river about 90 kilometers northeast of the city. The present supply provides for 40 liters per capita each day and is delivered from storage tanks through a system of mains for about four fifths of the city area. The ration of water is available in the morning for one and one-half

hours only. That part of the city in which it is not possible to make house connections is served by water venders and from public taps or fountains.

The scarcity of water, therefore, makes it obligatory on the residents to store sufficient water for their needs in tanks, barrels and like receptacles.

ANTILARVAE MEASURES

That yellow fever is a place disease is a generally accepted fact. The spot map of yellow fever cases occurring in the city of Guayaquil during the year 1918 brings this out quite clearly, and shows that the vast majority of cases reported up to November of that year occurred in the most densely populated section of the city, or rather in that section in which houses had been erected without any intervening space. A survey of this district revealed the important fact that the vast majority of homes were supplied with from one to twelve water tanks each, in addition to the barrels and smaller receptacles, while the outlying districts depended almost entirely on smaller receptacles, very few tanks being used. Many of the tanks inspected were uncovered or so badly covered that the mosquito experienced no difficulty whatever in gaining access to the water within. The barrels and other receptacles were all uncovered. All tanks inspected on this survey were found to contain the *stegomyia* larvae; the smaller receptacles were also breeding places, more especially for the *culex*; and in two instances I noted *stegomyia* larvae in tanks, while in barrels in the same room only *culex* larvae could be found.

The *stegomyia* is essentially a house mosquito, that is to say, it breeds, lives and dies in the same house, it does not fly for any considerable distance, and it avoids bright sunlight; only under rare circumstances is it to be found breeding in streets, yards or fields, at least in Ecuador, and up to now we have not found this extraneous breeding of sufficient importance to be considered a factor in the present campaign.

The antilarvae measures were started Nov. 25, 1918, and were based on the findings of the early survey. The first step was to mosquito-proof all tanks as soon as possible, and the organization concentrated its efforts on this work during the earlier weeks of the campaign.

A graph to be published later will show that yellow fever cases decreased rapidly as the tanks were made mosquito-proof; and when the number of breeding places in tanks were reduced to 5 per cent. of the total number inspected, the disease had been controlled, but was not considered eradicated. This reduction was taking place during the height of the rainy season and while receptacles of water, other than tanks, still remained *stegomyia* breeding places.

Nearly all tanks used in the city for conserving water are made in the country, are rectangular, and have a capacity of from 10 to several hundred gallons. The water enters the tanks from above, the inlet pipe resting on the top of one side of the tank; the outlet pipe is usually from 1 to 2 inches above the level of the tank floor, and even when the tanks are empty, so far as getting any water from them by means of the faucet is concerned, there always remains enough water in the tank for an ideal breeding place for the mosquito. This fact explains in part why tanks are a more desirable breeding place for the mosquito: this class of water container is seldom without water, and the surface of the water is disturbed only during the morning for one hour or so.

In the barrels and the smaller containers, conditions are not so favorable for the mosquito, as the water is always taken from these containers by means of a pail or large cup and always from above; consequently, during daylight hours there is considerable movement of the water surface which is not conducive to the selection of this class of receptacle as a breeding place by a mosquito of the habits of the *stegomyia*; and further, there comes a time rather frequently in the dry season when the barrel and similar receptacles are empty by reason of the scarcity of water or for purposes of cleaning the container, a condition that does not obtain with tanks, at least with the same frequency. It is fair to assume that if the *stegomyia* mosquito can exercise the instinct for self preservation, it will select and even hunt for water in a tank in which to deposit her eggs as offering a more favorable opportunity for the development of same as contrasted with chances in a barrel or similar receptacle.

The present campaign has been based on the thought that with a reduction of *stegomyia* mosquito breeding in water tanks there should be a reduction in the number of cases of yellow fever, and that if the effort is continued the disease will be eradicated. All containers of fresh water in or near human habitation have been treated; but the thought to be conveyed is that the tanks as water containers have been given first consideration.

There are nearly 7,000 water tanks in use in the city, and nearly 30,000 other containers to be inspected. The tanks have been covered with either copper screen, galvanized iron, or wooden covers. Of the three classes of covers, the galvanized iron has proved the most satisfactory and the cheapest; they do not admit of contamination of the water by rats, which is possible with copper screening; nor can they be taken and used for fire wood, as sometimes happens with wooden covers.

Great care is taken that the tanks are so covered that the mosquitoes cannot gain entrance to the water within. We impress on the people that the mosquito is a small insect and naturally can penetrate a small opening. Tanks with perfectly fitting covers are sealed, bearing the stamp of the service, in a manner that the cover of the tank cannot be raised without breaking the seal, and a broken seal indicates to the inspector that a careful inspection of the tank must be made to determine whether the cover has been off long enough for the mosquito to deposit her eggs within.

Public opinion for the work was created through the press, public lectures, posters, handbooks, etc. Yellow fever had so long handicapped and actually retarded the progress of Guayaquil and Ecuador that the public was ready to cooperate in any measure that would aid in the control of this disease, and this effort has been most intelligent and constant. Owing to the scarcity of water, especially in the dry season, it was highly desirable that we should adopt some measure that would free the water containers of mosquito larvae and at the same time conserve the water to the people, and accomplish this result economically. We experimented with different species of fish to determine their usefulness as mosquito larvae consumers.

The first variety of fish used is known locally as the "huaijas," a member of the perch family. This fish readily eats mosquito larvae, but soon tires of its existence in a barrel or small receptacle, and will jump

3 and sometimes 4 feet to free itself from the container. The jumping properties are most often exhibited during the night. It will be readily seen that even when people are willing and anxious to conserve the fish in their water containers, they can hardly be expected to watch them during the night. To counteract this jumping, the service supplied covers for the barrels; but here again we encountered difficulty in keeping the covers on the barrels, and there are good local reasons why it was not desirable to insist that all barrels be equipped with covers and the water drawn off by faucet. We were forced to abandon the huaijas, on account of its jumping, for the chata, a small fish which proved to be a voracious eater of mosquito larvae. It has the additional property of spending the greater part of its time at the surface of the water; but when any one approached the container, the chata would immediately swim to the bottom, remaining there until the cause of its fright had been removed.

The chalaco also was tried out and has given very good results. Top minnows or "millions," were given a trial, and are quite satisfactory for certain class of containers. These fish are very delicate and do not survive long in the ordinary container unless some care is given to them. As long as fish are available, they will be used for all containers other than tanks.

The present campaign was actually started, Nov. 25, 1918, with twelve sanitary districts. The number of districts was gradually increased up to twenty-nine. This number was maintained for a few months, when reduction was permissible. Oct. 1, 1919, the city was redivided into ten sanitary districts. The inspection cycle was arranged so that every home in the city should be visited at least once every seven days, including Sundays. Sanitary inspectors started in their districts on Monday, and those not able to conclude on Saturday were aided by auxiliary squads.

On the farms outside the city of Guayaquil, all large containers were eliminated; and as these farms are usually located on the river and the homes of the laborers on the banks of the river, it was decided to recommend that receptacles holding not more than 5 gallons of water be used in place of barrels. It had previously been observed that the vast majority of the laborers do not use in their homes more than 5 gallons of water in twenty-four hours. Bathing, washing of clothes, etc., is usually done in the river, so that there is really no need for conserving water longer than twenty-four hours in the homes. By this method it is believed that the *stegomyia* mosquito can be eliminated in those areas where this measure can be put in force.

Death and Blindness Caused by Wood Alcohol.—Owing to the heavy increase recently noted in the number of deaths and cases of blindness resulting from the drinking of wood alcohol by those ignorant of its dangers, the National Committee for the Prevention of Blindness, 130 East Twenty-Second Street, New York, is sending broadcast special warnings of the tragic consequences which may follow the use of wood alcohol, denatured alcohol and medicated alcohol for beverage purposes. The harmful action of this poison comes not only from taking it internally, but may likewise be induced by breathing its fumes, and by absorption through the mucous membranes of the body. Its effect is usually noticeable very shortly after exposure. Within a few hours after drinking, acute headache is noted, usually accompanied by violent attacks of vomiting, body pains, extending over the region of the kidneys, and excessive dizziness. Vision may become impaired, total blindness occur, and death itself result.—*Illinois Health News*, October, 1919.

ARTERIAL HYPERTENSION*

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The great importance of arterial hypertension or the conditions associated with it, as a widespread and apparently increasing cause of disability and death, is a self-evident incentive to investigation. At the same time it must be recognized that our knowledge of the subject is in a very confused state, as respects its phases of etiology, mechanism and treatment. Just as with diabetes, the literature contains almost every conceivable variety of opinions and suggestions. The first task of an investigator to choose is what seems significant and valuable among this mass of conflicting material, and the second is to build concrete facts with accurate methods in a clinical field which is still largely a morass of tradition and imagination.

THEORIES REGARDING THE CAUSES OF
HYPERTENSION

More or less restriction of salt has been employed for many years by some observant clinicians in the treatment of the various forms of nephritis. The first scientific foundation of both theoretical and practical importance is afforded by the work of the French school, beginning with Widai's demonstration of the rôle of the chlorids, particularly in the causation and treatment of edema, and with the application of this principle to hypertension by Ambard,¹ Combe,² Laufer³ and others. Similar results were obtained in arteriosclerosis by Bayer;⁴ but with only a few exceptions the tests with nephritis in Krehl's clinic were negative or doubtful, and the general German experience was opposed to a strict relationship between retention of chlorids and elevation of blood pressure.⁵

In American literature, salt and fluid restriction in hypertension is mentioned casually and incompletely if at all, and the protein intoxication theory is undoubtedly the dominant one. Treatment consists chiefly in low protein diets, the elimination of supposed toxins, or the artificial reduction of pressure by drugs, bleeding, electricity, and the like. Mental and bodily rest is advised to a degree which largely terminates usefulness in life, and many conservative practitioners refrain from any serious attempt to reduce the pressure, and devote themselves to keeping the patient as comfortable as possible, with resignation as to the results.

There are various reasons for this confusion and pessimism. In the German work the cases were not always well chosen and the restriction of salt was generally inadequate, though this work does furnish evidence against any invariable association of hypertension and gross chlorid retention. On the other hand, whether or not protein has any influence on blood pressure, it is impossible to accept Ambard's assertion that it is harmless in nephritis. Ambard considers fluid restriction unnecessary, and in adopting milk diet he comes back to the identical therapeutic program used

by the followers of the intoxication hypothesis. The fluid restriction of Laufer, who accepts von Noorden's limit of a liter daily without reckoning the important additional quantities contained in the food, is too lax for the worst cases. Likewise a much stricter exclusion of salt than represented by milk diet is essential for results in really severe cases. These inaccuracies are responsible for an unnecessarily high percentage of cases of absolutely or relatively irreducible hypertension in French, German, American and all other records, and also for the unnecessarily frequent and early deaths from apoplexy, cardiac failure, pulmonary edema and convulsions (misnamed uremic). For the same reason there have been no differences in therapeutic results sufficiently marked to establish any one theory to the satisfaction of all parties.

RESTRICTION OF WATER AND SALT

It would be wrong to ignore the unknown and uncontrollable factors in hypertension and the unsolved problems which they present. But any practitioner who will conform his treatment to one reasonable and definite condition, namely, the necessity of the organism to force a filtrate of water and dissolved substances through a damaged and partially blocked glomerular filter, can readily demonstrate for himself the compensatory element in the hypertension, by observing the fall in pressure and the relief of some attendant symptoms when proper diet reduces the quantity of this filtrate to a minimum. The opposite treatment under the intoxication hypothesis, through unsuitable diets and attempts at "flushing out," entails much harm. In some hypertension cases the mere reduction of the overload of salt and water brings relief which is comparable to the benefits of diet in diabetes.

Fuller laboratory study, particularly by blood analyses, contributes new information of theoretical, prognostic and therapeutic importance. Among the nephritic cases treated in our clinic to date, there have been twenty examples of marked hypertension. Most of these were treated in private hospital status, but four were outpatients. The observations are necessarily empiric, and are subject to modification from wider clinical experience, and particularly to more fundamental and decisive interpretations when animal experiments become available. Numerous data of these cases, function tests according to Ambard's principles, and details of individual histories and results, must be reserved for a more complete publication at a later date.

It may suffice here to state that the patients' ages ranged from 25 to 69 years, with the usual predominance of those past 40. All the cases were of chronic type. Their severity was mostly too great to yield to mere rest and hospital care, and some were known as highly severe cases which had proved intractable to a variety of customary treatments for several years. Bleeding was used temporarily in three critical cases, and brief experiments have been tried with some other measures; but in general the patients were not kept in bed or confined to the house but were treated entirely by diet.

To establish the general principle, the effects of sudden dosage with salt or water in suitable cases are illustrated by two experiments.

In the first experiment (Table 1), attention may be called to the absence of real retention of either salt or water (contrary to the French reports), and to the

* Read before the American Society for Experimental Pathology, Cincinnati, Dec. 30, 1919.

* Preliminary communication, based on a clinical study in collaboration with Drs. J. W. Mitchell and J. W. Sherrill.

1. Ambard, L.: Thèse de Paris, 1905; *Semaine méd.* **26**: 361, 1906.

2. Combe, A.: *Monatsschr. f. Kinderh.* **4**: 13, 82, 1905.

3. Laufer, R. J.: *Compt. rend. Soc. de biol.* **56**: 249, 1904.

4. Bayer, R.: *Arch. f. exper. Path. u. Pharmacol.* **57**: 162, 1907.

5. Loeb, A.: *Deutsch. Arch. f. klin. Med.* **85**: 348, 1905-1906. Brodski, J.: *Berl. klin. Wchnschr.* **43**: 906, 1906; *Deutsch. Arch. f. klin. Med.* **93**: 310, 1908. Löwenstein, C.: *Arch. f. exper. Path. u. Pharmacol.* **57**: 137, 1907.

remarkably high plasma chlorid figures⁶ and the elevation of blood pressure accompanying these.

The second experiment (Table 2) was performed on a different patient. The plasma chlorid percentage was not high, and fell lower with the water drinking, while the blood pressure rose markedly.

The first patient received salt, but showed no effect from a corresponding test with water alone. Because of the close relations between salt and water, it is

TABLE 1.—SALT TOLERANCE TEST, SEPT. 25, 1919

Time	Water Given, C.e.	Urine			Plasma	Blood	Blood	Pressure	
		Vol., C.e.	Sp. Gr.	NaCl %	NaCl,* Gm.	Chlorids Mg. per 100 C.e.	Urea Mg. per 100 C.e.	Sys- tole	Dias- tole
8 a.m.	200	...	.....	....	....	...	....	202	104
9 a.m.	200	65	1.011	0.72	0.47	...	....	...	...
10 a.m.	200	410	1.006	0.30	1.21	...	....	...	...
11 a.m.*	200	305	1.007	0.34	1.03	672	19.6	200	100
12 m.	200	120	1.008	0.44	0.53	672	19.6	198	94
1 p.m.	200	160	1.015	1.15	1.84	684	19.6	194	98
2 p.m.	200	105	1.016	1.21	1.27	676	....	224	100
3 p.m.	200	120	1.016	1.30	1.55	704	....	242	110
4 p.m.	200	210	1.007	0.90	1.88	...	....	266	110
5 p.m.	200	500	1.007	0.44	2.20	...	....	238	100
6 p.m.	200	250	.....	0.60	1.49	648	....	210	100
7 p.m. to 8 a.m.	550	830	1.009	0.41	3.40	644	19.6	182	80
Total	2,750	3,275			16.87				

* Ten grams of sodium chlorid were given at 11 a. m.

difficult to distinguish accurately between their effects, and space requirements necessitate leaving other tests to a later publication. The rise in pressure in both cases was accompanied as usual by the subjective symptoms of headache, dizziness, weakness and general malaise. Precautions were taken so that no patients suffered harm from such tests, but in severe cases there is danger that the reckless administration of either salt or water may cause alarming symptoms and even death. The accuracy of the tests is often interfered with by a protective diarrhea which also prevents dangerous disturbances.

The results of a short test may be negative in some patients or at some stages, and bad effects may become

TABLE 2.—WATER TEST, NOV. 19, 1919

Time	Water Given, C.e.	Plasma Chlorids, Mg. per 100 C.e.	Blood Urea, Mg. per 100 C.e.	Blood Pressure	
				Sys- tolie	Dias- tolie
8:30 a.m.	...	571	30.2	215	130
8:40 to 9:20 a.m.	1,000	...	...	...	...
9:25 a.m.	...	...	...	226	128
9:20 to 9:50 a.m.	600	...	...	...	...
9:55 a.m.	...	...	...	245	130
10:00 to 11:10 a.m.	1,400	...	...	...	...
11:15 a.m.	...	...	...	238	140
11:20 a.m. to 12:20 p.m.	800	...	...	...	...
12:30 p.m.	...	543	23.7	254	120
12:25 p.m.	...	...	...	226	125
1:00 p.m.	...	...	...	188	100
1:50 p.m.	...	...	...	190	100
2:30 a.m.	...	...	...	200	120

vident only after some days. The effects of salt are in general more powerful and obvious, as demonstrated by the success of Ambard and others in numerous cases. A very close restriction of water may be impracticable at the beginning of treatment, because of the salt stored in the patient's body and the inadvisability of imposing any real suffering from thirst. Also in many cases no rigid fluid restriction is necessary, and moderate quantities (from 1 to 3 liters daily) may be actually beneficial for flushing out salt or nitrogen. But the prolonged combination of excessive fluid and

little salt possibly involves osmotic and eliminative difficulties which are responsible for the anasarca, pulmonary edema and cardiac failure sometimes described in connection with long continued salt-poor diet.

No rigid classification, either anatomic or functional, of the cases listed in Table 3 was attempted, partly because the experience is insufficient, and partly because every case of nephritis is in some respects an individual problem, in which tests of the efficiency of different functions should be made and individual treatment prescribed accordingly. Different tests will give different classifications, and there are presumably types of cases not shown in this series. The phenol-sulphonaphthalein excretion is given here as one indication of renal action, but the complete publication will include other function tests. The data shown are otherwise limited to those which seemed most essential for treatment and prognosis. The order of cases is not merely consecutive or accidental, but forms a series based on these data.

TABLE 3.—EFFECTS OF DIETETIC TREATMENT IN TWENTY CASES OF HYPERTENSION

Case No.	Phenolsulphonaphthalein Excretion in 2 Hrs., %	Before Treatment				After Treatment			
		Plasma Chlorids, Mg. per 100 C.e.	Blood Urea, Mg. per 100 C.e.	Blood Pressure*		Plasma Chlorids, Mg. per 100 C.e.	Blood Urea, Mg. per 100 C.e.	Blood Pressure*	
				Sys- tolie	Dias- tolie			Sys- tolie	Dias- tolie
1	...	624	29.2	208	...	569	28.0	166	98
2	54.5	640	27.1	(300)	...	...	...	...	...
3	54.0	620	21.8	215	170	588	20.0	134	70
4	42.8	610	19.8	240	110	541	24.5	140	80
5	36.0	620	20.5	210	120	586	21.2	160	95
6	...	620	23.5	240	110	590	10.4	166	75
7	46.0	608	32.2	220	140	556	23.5	178	98
8	48.0	613	30.7	195	92	591	26.9	162	80
9	...	611	32.6	220	98	570	28.5	110	80
10	41.3	612	47.0	220	70	576	16.2	130	66
11	4.0	556	69.4	220	110	555	31.4	154	80
		(625)		212	104	556	52.6	156	80
12	30.2	664	94.4	210	120	598	26.4	172	100
13	...	659	104.5	198	100	545	62.5	90	60
14	5.0	648	134.0	214	170	537	42.2	140	100
15	...	597	27.1	190	92	597	...	108	70
16	38.2	569	36.4	190	90	595	14.6	165	100
17	...	534	16.7	210	100	553	56.2	180	95
18	27.4	576	55.0	235	145	543	23.7	170	98
19	12.1	548	58.2	(305)	...	...	...	...	...
				215	170	505	18.0	180	130
20	64.8	565	21.0	234	160	559	19.4	180	120

* Parentheses in the systolic pressure column indicate that the pressure in these cases was repeatedly near 300 m.m., but the actual pressure on beginning dietetic treatment was 215. In Case 19 this reduction had been accomplished only by heavy bleeding in another hospital.

CASES OF PURE HYPERTENSION

The first cases are more or less typical examples of so-called pure hypertension. One of them (Case 2) had been observed for over a year, and occasional urinalyses, even when the blood pressure was as high as 300 m.m., never showed albumin. In recent months, with more frequent urinalyses, traces of albumin have sometimes been found. The others of this group have traces of albuminuria. Omitting individual peculiarities, it may be said that this group is characterized by activity of excretion and apparent absence of retention in tests with nitrogen, water and even salt. The kidney retains power to concentrate, and both the blood urea and the urea function according to the Ambard principle may be fully normal. But the chlorid threshold, whether determined mathematically or by salt privation, is high, and these patients purchase their apparent efficiency of salt excretion at the price of abnormally high blood salt and blood pressure. Extraordinary strictness of salt-free diet may be necessary to control these, and the therapeutic success corresponds to the restriction in salt intake. This single feature some-

6. For chlorid method, see Donleavy, J. J.: J. Biol. Chem. 37: 551 (April) 1919.

times makes the difference between health and invalidism. While protein and water create no symptoms, on general principles they should be limited to some extent. Without assuming that all possible kinds of cases are represented in this list, and without overlooking other abnormalities revealed by sufficiently thorough study, it can be stated that pure hypertension, so far as it has occurred in this series, has been essentially a salt nephritis.

HYPERTENSION WITH KIDNEY IMPAIRMENT

As all standards of kidney function are to some extent arbitrary, this group passes by gradual transition into the second and larger group, in which there is obvious impairment of several kidney functions, as indicated by retention of urea and other products, impaired excretion of urea and chlorids by Ambard's laws, more or less fixation in the chlorids and specific gravity of the urine, and especially chlorid retention with or without evident edema.

The degree of impairment in the nitrogen economy calls for corresponding restriction of protein, and influences the prognosis. But the hypertension is affected only through the salt and water functions. Careful fluid restriction is necessary as a rule, but attention should be given to the nitrogen retention thus entailed in certain toxic cases. This is an additional reason for limiting the protein intake, though it is well known that the percentage of blood urea is not an infallible index of danger. Even though chlorid retention be far greater than in the first group and the other signs more evident as stated, the actual chlorid threshold may be lower and the actual salt restriction required to control the pressure may be less stringent in the second group.

It is well known that retained salt may be diffused through edema fluid without raising the percentage in the blood. Patient 11 thus had much edema, and as this diminished, the chlorid percentage in the blood rose as shown in parentheses. With this proviso, the great majority of these cases had high chlorids in the blood plasma, and it is probable that the same will hold for the majority of all hypertension cases. But in approaching Group 3, we find a small group of hypertension patients with continuously low blood chlorids and low chlorid threshold, and often with normal or actually low blood urea.

HYPERTENSION WITH DIABETES OR SEVERE NEPHRITIS

The six closing cases of this table may be divided into two groups of three each. The first group includes three cases (15, 16 and 17) of diabetes. In them the prognosis is good with thorough treatment of the diabetes, sometimes with the aid of salt and water restriction and sometimes without it. Though there are presumably rare cases of intractable hypertensive nephritis associated with diabetes, there is generally the strong probability that proper treatment, associated with reduction of the blood sugar, will reduce the hypertension.

The last three cases of the table are nondiabetic, and have proved the most difficult and intractable of the entire series. Limitation of salt, protein and fluid, reducing the twenty-four hour urine volume below 300 c.c., has given symptomatic relief and more or less complete checking of retinitis, but the influence on the pressure has on the whole been slight and the reduction shown in the table has not been permanent. Notwith-

standing the innocent looking blood analyses, according to function tests these are cases of severe nephritis, and the worst element in their prognosis from the standpoint of hypertension seems to be the absence of a high blood chlorid before treatment.

LIMITATIONS IN TREATMENT

Certain precautions or limitations should be mentioned with regard to the practical application of these principles in treatment.

First, a diet which is reasonably satisfying and at the same time sufficiently poor in salt is not so easy to arrange as it may appear. Both physician and patient may sometimes believe conscientiously that strict abstinence from salt has been maintained, when analyses will show the blood chlorids undiminished and an output of from 5 to 10 gm. in the twenty-four hour urine. Such analyses are important for controlling the treatment, and no pressure is rightly called irreducible unless the daily chlorid excretion has been reduced to practically zero.

Second, some quantity of salt is considered indispensable in the permanent ration. This is stated as about 2 gm. for normal persons, but the limits for nephritics have never been determined. On the one hand, it is not certain that the intake need be as great when the output is obstructed. On the other hand, there may be danger in withdrawing salt from certain nephritics, especially with nitrogen retention, who seem to need much more than 2 gm. of salt for its diuretic action to ward off uremia. As a rule, the outstanding effect of undue salt privation has been weakness. It is necessary, therefore, to work out salt rations for individual nephritics which may range from almost zero to a considerable quantity.

Third, restriction of salt or fluid, like every dietetic treatment of organic disease, is only palliative. Success is not as uniform as in the treatment of diabetes, and complete or partial failures are more numerous. When the first results are more or less satisfactory, there is still reason to fear that the same patients may pass into a hopeless condition in the course of months or years. Furthermore, the most effectual relief of the hypertension demonstrates strongly that the essential trouble is more than mechanical. Reduction of the blood pressure nearly or completely to normal may still leave the patient an invalid, either from weakness due to the strict salt privation which is necessary to hold down the pressure, or still worse, if salt is given so as to allow the pressure to go up. They may also be subject to attacks of hypertension and accompanying symptoms from little or no evident cause. The greatest defect of the French work is the disposition of those authors to treat the entire question as a mere mechanical matter of salt retention. Obviously, even the mechanics of hypertension remains largely unsolved, and the fundamental condition thus far baffles both research and treatment.

Notwithstanding these limitations, the benefit of suitable chlorid restriction for hypertension is still great, in making the patients more comfortable, diminishing the danger of apoplexy, and possibly checking the progressiveness of the disorder. So many of these patients give a history of copious use of salt that this may be a possible contributory factor. Granting a primary infectious or toxic etiology of the renal or vascular damage, the prolonged irritation by the excess of salt and the wear and tear of the hypertension itself.

may well be regarded as a cause of progressive aggravation. By far the best and easiest results are obtainable in the earliest cases, when the hypertension is intermittent rather than continuous. Early diagnosis is therefore important, and in advance of the sphygmomanometer it may be hoped that chemical tests, such as for the blood chlorids and chlorid threshold (the normal values for which are still undecided), may give advance warnings to guide prophylaxis.

Such studies may also throw some light on the origin and the control of arteriosclerosis and some other disorders. One of the most interesting branches of the investigation has concerned ophthalmic disorders, and with the cooperation of several oculists, evidence has been gathered indicating that many cases of retinitis are due chiefly or solely to chlorids and are benefited by chlorid restriction. More cases of retinitis and of glaucoma are needed for this study. The promising study of salt metabolism will probably soon be extended more widely by those who are in position to undertake parallel determinations of various salts and to develop the more fundamental problems through animal experiments. The present investigation, which has had to be self-supporting to date, has been limited and superficial for lack of these things. The clinical facts collected, however, warrant urging that unfounded theories be discarded, the widespread abuse of drugs, particularly nitrites and iodids, stopped, and the possibilities of modern laboratory methods utilized for the guidance of treatment.

5 East Fifty-First Street.

INFECTION BY THE BROAD TAPEWORM, *DIPHYLLOBOTHRIUM LATUM* *

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While cases of infection by the broad tapeworm have been rather frequently reported in the United States in recent years, and most of them, like the present one, have occurred in immigrants who have acquired the infection abroad, yet because of the probability of the permanent establishment of this parasite in this country, it is desirable to record each case with as many details as possible.

The worm here recorded was casually handed to me in the early part of January of this year. The dark spots in each mature segment had been noticed, but the true nature of the parasite had not been fully appreciated. The specimen had been washed from the feces with which it was expelled by the patient. The head is lacking, although many of the immature segments immediately following the head are present. The specimen is in several pieces, and the combined length of them laid out without traction on a table is 230 mm. All the segments appear in excellent condition, and none appear atrophic or degenerated.

The patient presented almost no symptoms.

REPORT OF CASE

B. N., man, aged 39, Russian Jew, machinist, born at Bielostok, Poland, where he resided until he was about 19 years of age, spent the next six years, including the time of the war between Russia and Japan, and while with the Russian army, at various places in Siberia, such as Omsk, Tomsk, Kuznetsk and Yakutsk. During these six years he ate much

uncooked fish. Although much fish had been eaten during his youth at Bielostok, he thinks it was well cooked by his mother. After the six years spent in Siberia he returned to Bielostok, and soon after came to the United States. In this country he spent one year in New York, six years in Chicago, and six in South Bend, Ind. He first knew he had a tapeworm eight years before, while he was living in Chicago, his knowledge being based on the fact that he passed fragments from 12 to 18 inches in length. These fragments appeared to him well preserved, and he says that they showed motility. He found segments only at the time of defecation. He never noticed any segments passed while he was in the Old World, but he suggested that, being younger, perhaps he was a careless observer and did not pay so much attention to himself. The patient said that he had always been well and had never consulted a physician until he wished the worm expelled in the latter part of December, 1919, and except when being examined for life insurance. He passed the insurance examination successfully. About three months before seeking treatment for tapeworm he had obscure abdominal distress; and he had another attack at the time he sought treatment. He consulted Dr. C. C. Terry of this city, by whom he was given aspidium. A few days later, when he had recovered from the effects of medication, the worm was submitted to me for identification. I was unable to get the patient for a blood examination until nearly two weeks after the worm had been expelled. Blood examination then revealed: erythrocytes, 5,148,000; leukocytes, 6,400; hemoglobin, 85 per cent., Sahli; polymorphonuclears, 56 per cent.; small lymphocytes, 28 per cent.; large lymphocytes, 7 per cent.; large mononuclears, 2 per cent.; transitionals, 3 per cent.; eosinophils, 3 per cent.; basophils, 1 per cent. The patient has the appearance of being in perfect health, and looks strong and robust.

COMMENT

There can be little doubt that this patient became infected with a broad tapeworm while living at Bielostok, which is one of the general regions where such worms are common, or in Siberia, where he knows he ate uncooked fish. He may have acquired it in this country, but that is very doubtful.

That the patient is and has always been robust shows that an anemia is not necessarily caused by the presence of this parasite. The fact that he passed well preserved and easily recognized segments is rather unusual¹. The absence of anemia, and the good condition of the segments passed as well as of the entire worm as subsequently passed, are in accord with the views that diseased or disintegrating worms are the chief cause of the anemia due to the absorption of products from disintegrating segments.²

This case has afforded an excellent opportunity for the parasite to become permanently established in this region of the United States. For the past six years many thousands of eggs must have entered the sewerage system of South Bend, very soon to reach the St. Joseph River and a short time later Lake Michigan. In both river and lake, hatching larvae must have been able to parasitize various fishes.

1. Brumpt, E.: Précis de parasitologie, Ed. 2, 1913, p. 249.
2. Brumpt: Précis de parasitologie, p. 263.

Probabilities as to When the First Birth Will Occur.—

According to Knibbs, statistician for Australia, the probability of a nuptial first birth occurring in less than one year after marriage is 0.4946 for age 15 of the wife; 0.7770 for age 18; 0.9176 for age 21; the maximum, or 0.9771, for age 25; 0.9075 for age 30; 0.6748 for age 35; 0.3245 for age 40, and 0.0622 for age 45. The foregoing statistics are based on the supposition that the husband is approximately the same age as the wife. If he is younger or older than the wife, the probability will be affected accordingly.

* From the laboratory of the Clinic.

SQUAMOUS-CELL EPITHELIOMA OF THE LIP

A STUDY OF FIVE HUNDRED AND
THIRTY-SEVEN CASES *

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Of all the malignant neoplasms with which man is afflicted, few cause more concern and inconvenience than that of epithelioma of the lip. In the past, pathologists have been content to classify cancer of the lip as cancer, without any distinction as to the degree of malignancy. It is a well established fact that some cancers of the lip are fatal to patients and others are not. There must be a reason for this. One theory is that some persons are resistant to cancer, and this seems to be borne out in a certain percentage of cases.

Undoubtedly, a large proportion of cancer cells are destroyed by the defense cells of the body; of these, the fibrous connective tissue cell is the most important, since it cuts off nourishment from the cancer cells.

The endothelial leukocyte and lymphocyte evidently also play an important rôle in the destruction of cancer cells, for practically always they may be seen in the neighborhood of a cancerous growth. Foreign body giant cells that are most probably formed from the endothelial leukocytes are not infrequently found lying adjacent to cancer cells.

The most important factor in squamous-cell epithelioma of the lip seems to be the degree of cellular activity. The cells of some epitheliomas of the lip show a marked tendency to differentiate, that is, to produce a growth similar to the normal; the pearly body is an example. The pearly body corresponds to the horny layer of the epidermis. In other squamous-cell epitheliomas there is no differentiation whatever. In the large majority of growths whose cells show no

tendency to differentiate, or at least very little, there are many mitotic figures.

In studying these epitheliomas, therefore, it occurred to me that they should be graded according to differentiation and mitosis, special stress being laid on the former. The grading was made on a basis of 1 to 4, and absolutely independent of the clinical history. If an epithelioma shows a marked tendency to differentiate, that is, if about three fourths of its structure is differentiated epithelium and one fourth undifferentiated, it is graded 1; if the differentiated and undifferentiated epithelium are about equal, it is graded 2; if the undifferentiated epithelium forms about three

fourths and the differentiated about one fourth of the growth, it is graded 3; if there is no tendency of the cells to differentiate, it is graded 4. Of course the number of mitotic figures and the number of cells with single large deeply staining nucleoli (one-eyed cells) play an important part in the grading.

Some epitheliomas of the lip are very active and from the start show little or no tendency to differentiate; some grow more malignant with time, and others increase in malignancy and then retrogress. Unquestionably an epithelioma of a low grade of malignancy is made more malignant by irritation with chemicals such as hydrochloric or nitric acid, silver nitrate or arsenic paste.

Chronic ulcers of the lip, like chronic ulcers of the stomach, should be examined very closely

for cancer, provided syphilis has been eliminated. MacCarty¹ has demonstrated early cancer in the epithelium at or near the edge of gastric ulcers; practically the same process is found in early cancer or ulcer of the lip. In the lip the cancer starts in the stratum germinativum of the epithelium at or near the border of the ulcer. Not all cancers of the lip are preceded by ulcers, but the majority are.

I shall present the facts in statistical form and make the deductions, not from one, but from various standpoints: (1) the duration and size of the lesion; (2) the

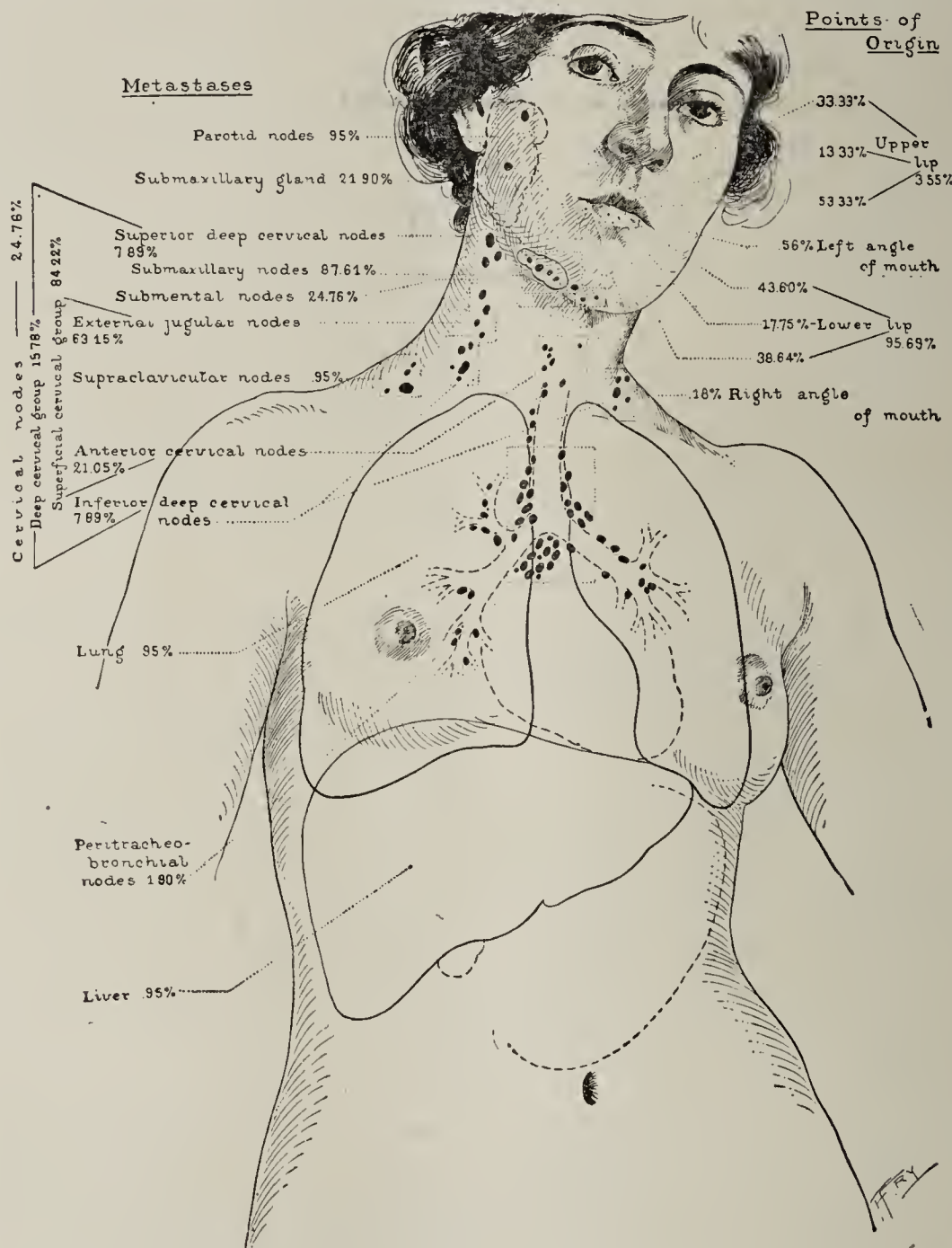


Fig. 1.—Percentages of points of origin of epithelioma of the lip, and percentages of location of metastasis.

* From the Section on Surgical Pathology, Mayo Clinic.

* Presented before the Richmond Academy of Medicine and Surgery, Richmond, Va., Nov. 25, 1919, and before the Roanoke Academy of Medicine, Roanoke, Va., Dec. 1, 1919.

1. MacCarty, W. C.: Pathology and Clinical Significance of Gastric Ulcer: From a Study of Material from Two Hundred and Sixteen Partial Gastrectomies for Ulcer, Ulcer and Carcinoma, and Carcinoma. Surg., Gynec. & Obst. 10: 449-462, 1910.

use or nonuse of tobacco; (3) the use or nonuse of caustics, pastes or plasters, etc., before treatment at the clinic; (4) metastasis or no metastasis; (5) cellular activity, and (6) other points of general interest.

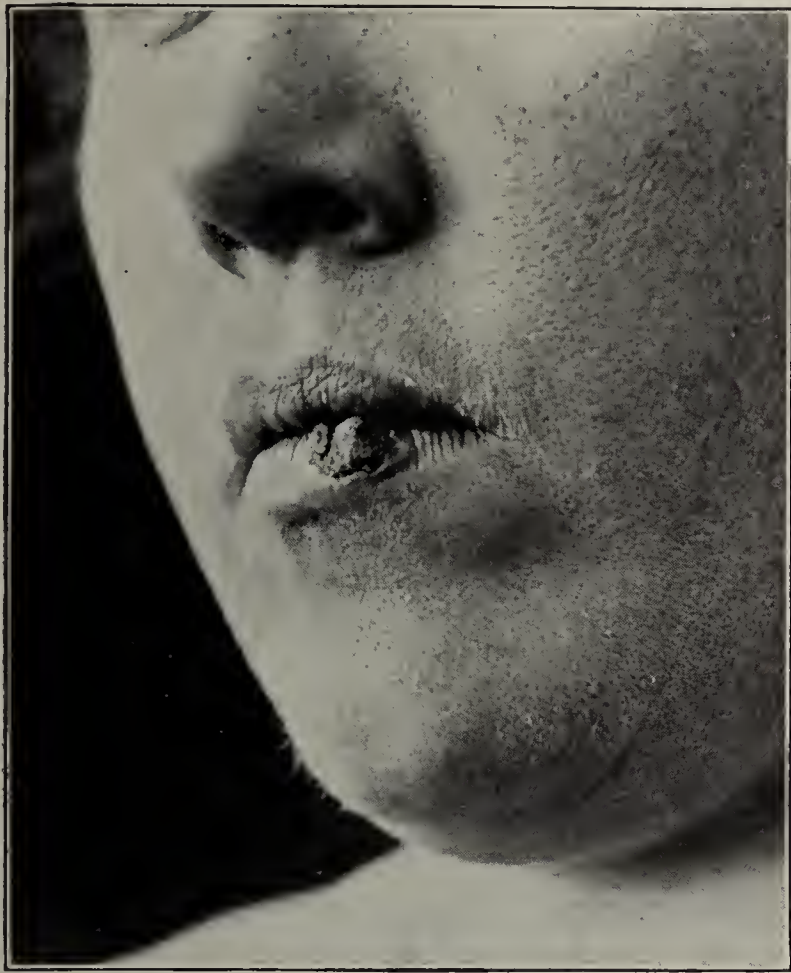


Fig. 2 (a 188878).—Typical elevated or wartlike epithelioma of the lip.

CONCLUSIONS

- 1. The 537 cases of squamous-cell epithelioma of the lip in this series represent 26.85 per cent. of 2,000 cases of general epithelioma.
- 2. Squamous-cell epithelioma of the lip occurs more often in males than in females; the proportion is 49: 1.

TABLE 1.—SQUAMOUS-CELL EPITHELIOMA OF THE LIP: FIVE HUNDRED AND THIRTY-SEVEN CASES (26.85 PER CENT. OF TWO THOUSAND CASES OF GENERAL EPITHELIOMA)		
Patients	537	Per Cent.
Males	526	(97.95)
Females	11	(2.05)
Age:		
Youngest patient	21	
Oldest patient	97	
Average age of patients	57.3	
Occupation:		Per Cent.
Farmer	56.7	
Laborer	9.0	
Merchant	3.83	
Traveling salesman	2.87	
Railroad employee	2.87	
Carpenter	2.68	
Lawyer	1.34	
Blacksmith	1.15	
Clerk	1.15	
Other occupations 59, each below 1 per cent.	18.4	
Family history of malignancy	14.9	
Previous lesion at site of cancer:		
Sore or ulcer (coldsore, 10.6 per cent.)	63.3	
Crack	4.1	
Leukoplakia	3.7	
Tobacco:		
Patients using tobacco	80.49	
Patients not using tobacco	19.51	
Females using tobacco (smoke)	45.45	
Females not using tobacco	45.45	
Methods of using tobacco:		
Patients who smoke only	69.82	
Patients who chew only	6.31	
Patients who smoke and chew	23.5	
Patients who use snuff	0.35	

TABLE 1.—Continued	
Total number of smokers	Per Cent. 93.33
Total number of chewers	29.82
Total number of snuffers	0.35
Methods of smoking:	
Pipe only	40.69
Cigars only	19.18
Pipe and other methods and with chewing	37.79
Cigars with other methods and with chewing.....	31.97
Total number of pipe smokers	78.48
Total number of cigar smokers	51.16
Total number of cigaret smokers	1.16
History of injury	8.38
Average duration of lesion	Years 2.58
Longest duration of lesion	28.00
Shortest duration of lesion	0.08
Greatest diameter	Cm. 12.5
Average greatest diameter	2.4
Origin of lesion:	Per Cent.
Lower lip	95.69
Upper lip	3.55
Left angle of mouth	0.56
Right angle of mouth	0.18
Lower lip:	
Left lower lip	43.60
Right lower lip	38.64
Middle lower lip	17.75
Upper lip:	
Left upper lip	53.33
Right upper lip	33.33
Middle upper lip	13.33

TABLE 2.—FIVE HUNDRED MEN WITHOUT EPITHELI- OMA OF THE LIP	
Average age, years	36.07
Users of tobacco	Per Cent. 78.6
Nonusers of tobacco	21.4
Methods of using tobacco:	Per Cent.
Smoke only	82.95
Chew only	4.32
Smoke and chew..	12.72
Snuff	0.20
Total number of smokers	95.67
Total number of chewers	17.04
Total number of snuffers	0.20
Methods of smoking:	
Pipe only	6.11
Cigars only	16.48
Cigarets only	26.32
Pipe and other methods, and chewing	31.91
Cigars and other methods, and chewing.....	42.02
Cigarets and other methods, and chewing...	30.05
Total number of pipe smokers	38.03
Total number of cigar smokers	58.51
Total number of cigaret smokers	59.04

It occurs in patients past middle life; their average age is 57.3 years.

3. The disease occurs most often in farmers; they represent 56.7 per cent. of the cases.

4. A family history of malignancy plays a negligible part.

5. The site of the cancer was preceded by a sore or an ulcer in 63.3 per cent. of the cases.

6. About one fifth of all the patients do not use tobacco, while one half of the female patients do not use it.

7. Of the patients using tobacco, 93.33 per cent. smoke; 78.48 per cent. of these use a pipe.

8. A comparison of 500 men without epithelioma of the lip with the 537 patients with epithelioma of the lip shows that the percentage of tobacco users and non-tobacco users is practically the same; 78.6 per cent.



Fig. 3 (a 265421).—Typical depressed or ulcer-like epithelioma of the lip.

users and 21.4 per cent. nonusers in the former group, and 80.49 per cent. users and 19.51 per cent. nonusers in the latter group, but that the average age of the men



Fig. 4 (a 21283).—Marked leukoplakia of the lip, characterized by increase of (a) horny layer of epidermis, and (b) basal layer.

without epithelioma of the lip is about nineteen years less than the average age of the patients with epithelioma of the lip at the time of onset.

9. The most remarkable difference in a comparison of the patients with epithelioma of the lip and the men without epithelioma of the lip is in the method of smoking. The total number of pipe smokers in the former

TABLE 3.—TREATMENT ELSEWHERE IN SQUAMOUS-CELL EPITHELIOMA OF THE LIP

	Per Cent.
Nonsurgical:	
1. One or more treatments alone or in various combinations of acids, carbon dioxid, copper sulphate, electricity, mercury, paste or plaster, potassium iodid, radium, roentgen ray, scarlet red, shoemakers' wax, and silver nitrate.....	29.05
2. Paste or plaster alone or in combination with other nonsurgical treatments	51.28
3. Caustics (acids or silver nitrate) alone or in combination with other nonsurgical treatments	35.89
4. Roentgen ray alone or in combination with other nonsurgical treatments	18.58
5. Paste or plaster alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip) ..	14.89
6. Caustics (acids or silver nitrate) alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip)	10.42
7. Roentgen ray alone or in combination with other nonsurgical treatments (proportion of all epitheliomas of lip)....	5.4
Surgical:	
1. One or more operations	17.87
2. Excision of growth from lip without removing lymph nodes	53.12
3. Excision of V from lip without removing lymph nodes.....	5.2
4. Excision of growth and one or more groups of lymph nodes	16.66
5. Excision of V from lip and one or more groups of lymph nodes	6.25
6. Miscellaneous	18.75
Surgical and nonsurgical:	
1. One or more operations and one or more treatments with acids, carbon dioxid, etc., alone or in various combinations.	4.65
2. Operations without treatment with acids, carbon dioxid, etc., before or after operation	13.22
3. Treatment with acids, carbon dioxid, etc., without operation	24.39
4. Operation and treatment with acids, carbon dioxid, etc...	37.61

TABLE 4.—PATIENTS OPERATED ON AT THE MAYO CLINIC

	No.
Cases (96.03 per cent. of 537).....	516
1. Excision of submental lymph nodes, submaxillary lymph nodes and salivary glands of both sides, and V-shaped excision of epithelioma of the lip (one operation) (39.34 per cent. of 516).	203
2. V-shaped or quadrilateral shaped excision of epithelioma of the lip (10.85 per cent. of 516).....	56
3. Excision of submental lymph nodes, submaxillary lymph nodes, and salivary glands of both sides and quadrilateral shaped excision of epithelioma of the lip (one operation) (4.84 per cent. of 516)	25
4. Excision of submental lymph nodes and submaxillary lymph nodes and salivary glands on one side, and V-shaped excision of epithelioma of the lip (one operation) (3.29 per cent. of 516).	17
5. Unilateral block dissection (one operation) (2.9 per cent. of 516)	15
6. Miscellaneous (various combinations of operations, cauteries, excisions of specimens for diagnosis, at one time or at different times) (38.76 per cent. of 516)	200
REMOVAL OF LYMPH NODES AND SALIVARY GLANDS	
Cases	449
1. Submental lymph nodes (97.1 per cent. of 449).....	436
2. Submaxillary lymph nodes and salivary glands (unilateral) (12.91 per cent. of 449)	58
3. Submaxillary lymph nodes and salivary glands (bilateral) (84.18 per cent. of 449)	378
4. Cervical lymph nodes (16.7 per cent. of 449).....	75
5. Block dissections (alone or combined with other operations) (10.02 per cent. of 449)	45
6. Cases in which the lymph nodes were removed months or years after the removal of the epithelioma of the lip (2.44 per cent. of 449)	11
7. Lymph nodes removed (one or more groups) (87.01 per cent. of 516)	449
8. Cases in which no lymph nodes were removed (12.98 per cent. of 516)	67
PATIENTS WITH INOPERABLE EPITHELIOMA	
Cases (3.9 per cent. of 537)	21

is 78.48 per cent. and the total number of cigaret smokers is only 1.16 per cent., while in the latter the total number of pipe smokers has dropped to 38.03 per

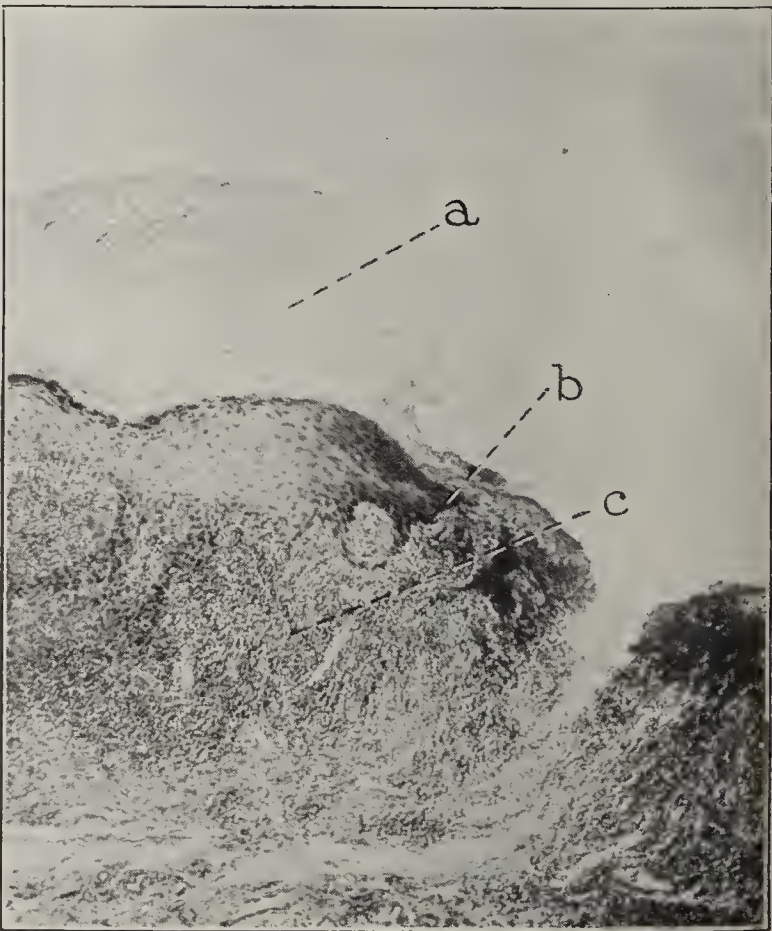


Fig. 5 (a 152243).—Ulcer associated with a leukoplakia of the lip: a, leukoplakia; b, junction of epidermis and ulcerated area; c, lymphocytes.

cent., and the total number of cigaret smokers has risen to 59.04 per cent.

10. A history of injury plays a negligible part.

11. The duration of the lesion shows a marked variation, from 0.08 years to 28 years, with an average of 2.58 years.

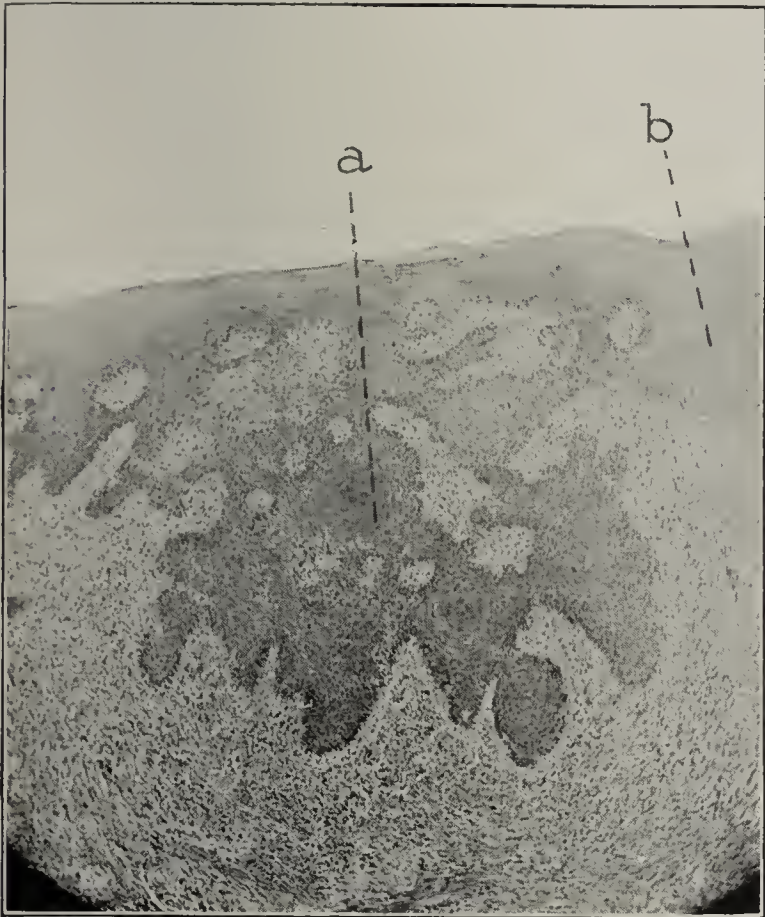


Fig. 6 (a 98158).—Grade 1 epithelioma of the lip with marked differentiation; low degree of malignancy; patient well five years after operation: a, epithelioma; b, normal epithelium.

12. The greatest diameter of any lesion is 12.5 cm.; the average, 2.4 cm.

13. The lesion originated on the lower lip in 95.69 per cent. of the cases, on the upper lip in 3.55 per cent., at the left angle of the mouth in 0.56 per cent., and at the right angle of the mouth in 0.18 per cent.

TABLE 5.—PATHOLOGIC FINDINGS IN CASES IN WHICH LYMPH NODES AND SUBMAXILLARY SALIVARY GLANDS WERE REMOVED

Cases	No.	Per Cent.
No metastasis found	344	76.62
Metastasis found	105	23.38
Submaxillary lymph nodes alone (one side)	44	41.90
Submaxillary lymph nodes and salivary glands (one side)	13	12.38
Submaxillary lymph nodes (one side) and submental lymph nodes	7	6.66
Submaxillary lymph nodes, salivary glands, and superior superficial cervical lymph nodes (one side)	6	5.71
Submental lymph nodes alone	5	4.76
Submaxillary lymph and superficial cervical lymph nodes (one side)	6	5.71
Submaxillary lymph nodes (both sides) and submental lymph nodes	5	4.76
Submaxillary lymph nodes (both sides), submental and anterior jugular lymph nodes (one side)	3	2.85
Miscellaneous (submaxillary lymph nodes and salivary glands, submental, cervical, parotid, supraclavicular and peribronchial lymph nodes; lung and liver, alone or in various combinations)	16	15.23
Submaxillary lymph nodes, total involvement	92	87.61
Submaxillary salivary glands, total involvement	23	21.90
Submental lymph nodes, total involvement	26	24.76
Cervical lymph nodes (one or more groups)	26	24.76
Superior deep cervical nodes	3	7.89
Inferior deep cervical nodes	3	7.89
Exterior jugular nodes	24	63.15
Anterior cervical nodes	8	21.05
Supraclavicular nodes, total involvement	1	0.95
Parotid lymph nodes, total involvement	1	0.95
Peribronchial nodes, total involvement	2	1.90
Lung, total involvement	1	0.95
Liver, total involvement	1	0.95
Submaxillary lymph nodes, total involvement on both sides	13	12.38
Cervical nodes, total involvement on both sides	2	1.90

TABLE 6.—GRADE OF FIVE HUNDRED AND THIRTY-SEVEN CASES ON A BASIS OF 1 TO 4, ACCORDING TO CELLULAR ACTIVITY

	No.	Per Cent.
Grade 1	85	15.82
Grade 2	333	62.01
Grade 3	113	21.04
Grade 4	6	1.11

DURATION AND SIZE OF EPITHELIOMA ACCORDING TO GRADE				
	Grade 1 Years	Grade 2 Years	Grade 3 Years	Grade 4 Years
Longest duration	10.00	25.00	28.00	2.00
Shortest duration	0.10	0.08	0.08	0.91
Average duration	1.43	2.77	3.33	1.29
	Cm.	Cm.	Cm.	Cm.
Largest size	5.00	10.00	7.50	2.00
Smallest size	0.20	0.30	0.20	1.80
Average size	1.23	2.28	3.25	1.9

EPITHELIOMA PRECEDED BY ULCER		
	No.	Per Cent.
Grade 1	52	15.29
Grade 2	225	66.17
Grade 3	60	17.64
Grade 4	3	0.88

PROPORTION OF EACH GRADE PRECEDED BY ULCER		
Grade 1	61.17 per cent. of	85
Grade 2	67.56 per cent. of	333
Grade 3	53.09 per cent. of	113
Grade 4	50.00 per cent. of	6

INOPERABLE EPITHELIOMA ACCORDING TO GRADE			
Grade 1	Grade 2	Grade 3	Grade 4
0	12	7	2

14. Twenty-nine and five hundredths per cent. of the patients were treated with acid, paste or plaster, etc., before they entered the clinic.

15. Seventeen and eighty-seven hundredths per cent. of the patients were operated on before they entered the clinic.

16. Ninety-six and eight hundredths per cent. of the patients were operated on at the clinic.



Fig. 7 (a 64692).—Grade 1 epithelioma of the lip showing marked differentiation, although it is of a slightly higher degree of malignancy than the epithelioma shown in Figure 5; patient well seven years after operation; a, completely differentiated area; b, partially differentiated cells; c, normal epithelium.

17. In 87.01 per cent., the regional lymph nodes were removed.

18. Of the 449 cases in which the lymph nodes or salivary glands were removed, metastasis was demonstrated in 23.38 per cent. ; the submaxillary lymph nodes were involved in 87.61 per cent. ; the submaxillary salivary glands in 21.90 per cent. ; the submental lymph



Fig. 8 (a 99884).—Grade 2 epithelioma of the lip; not so much differentiation as in epithelioma shown in Figure 6; patient died from epithelioma of the lip four and one-half years after operation: a, completely differentiated area or pearly body; b, undifferentiated cells.

TABLE 7.—RESULTS

GENERAL ULTIMATE RESULTS				
Patients traced (operable, 306; inoperable, 8) (58.47 per cent. of total)				314
Patients operated on				306
Patients dead (40.52 per cent.)				124
Patients alive (59.47 per cent.)				182
Good result (no recurrence (92.85 per cent. of 182))				169
Fair result (slight recurrence) (6.04 per cent. of 182)				11
Bad result (no improvement) (1.09 per cent. of 182)				2
DURATION OF LIFE SINCE LAST OR ONLY OPERATION, ACCORDING TO RESULT				
	Good Result	Fair Result	Bad Result	
	Years	Years	Years	
Longest	14.39	13.68	2.80	
Shortest	1.25	0.96	0.49	
Average	7.76	6.8	1.65	
MORTALITY				
Deaths (42.05 per cent. of 314)				132
Deaths of patients with operable epithelioma (93.93 per cent. of 122)				124
Deaths of patients with inoperable epithelioma (6.06 per cent. of 132)				8

TABLE 8.—TOBACCO USERS OPERATED ON

	Grade 1	Grade 2	Grade 3	Grade 4
Number of patients	37	118	37	3
Patients living	34 (91.81% of 37)	92 (77.96% of 118)	10 (27.02% of 37)	
Patients living, good result	33 (97.05% of 34)	85 (92.39% of 92)	10 (100% of 10)	
Patients living, fair result	1 (2.94% of 34)	6 (6.52% of 92)		
Patients living, poor result		1 (1.08% of 92)		
Patients dead	3 (8.10% of 37)	26 (22.63% of 118)	27 (72.97% of 37)	3 (100% of 3)
Cause unknown		6	5	1
Good result	2 (66.66% of 3)	6 (30.00% of 20)	7 (31.81% of 22)	
Fair result	1 (33.33% of 3)			
Poor result		14 (80.00% of 20)	15 (68.18% of 22)	2 (100% of 2)
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)				Per Cent. 78.14
Total fair result (patient living with slight recurrence or died from other cause)				4.37
Total poor result (patient lived with no improvement or died from epithelioma)				17.48

TABLE 7.—Continued

CAUSE OF DEATH OF PATIENTS OPERATED ON: DATA FROM RELATIVE, HOME PHYSICIAN, OR PATHOLOGIC RECORDS OF THE CLINIC		
	No.	Per Cent.
Known cause	99	
Cancer of the lip	63	63.63
Heart disease	5	5.05
Nephritis	5	5.05
Pneumonia	4	4.04
Stomach trouble	3	3.03
Paralysis	3	3.03
"Following operation elsewhere"	3	3.03
Fall	2	2.02
Carcinoma of the stomach	1	1.01
Tumor of the stomach	1	1.01
Abdominal tumor	1	1.01
Diabetes	1	1.01
Carcinoma of the sigmoid	1	1.01
Sepsis	1	1.01
Tuberculosis	1	1.01
Hepatic disease	1	1.01
Cardiac and hepatic disease	1	1.01
Sarcoma of the liver	1	1.01
Lung trouble	1	1.01
Unknown	25	
CAUSE OF DEATH OF PATIENTS WHO DIED IN THE MAYO CLINIC (ALL OPERABLE)		
Chronic nephritis and arteriosclerosis (more than 2 years after operation)		1
Epithelioma and abscess of the neck (52 days after operation)		1
Epithelioma (25 days and 4 months, respectively, after operation)		2
Pneumonia (few days after operation)		3
Sepsis (12 days after operation)		1
Total (1.55 per cent. of 516)		8
Actual operative mortality (0.77 per cent. of 516)		4



Fig. 9 (a 59017).—Grade 2 epithelioma of the lip; about the same degree of malignancy as in epithelioma shown in Figure 7; patient well more than seven years after operation: a, partially differentiated cells; b, undifferentiated cells.

TABLE 9.—NONUSERS OF TOBACCO OPERATED ON

	Group 2	Group 3	Group 4
Number of patients	7	37	7
Patients living	6 (85.71% of 7)	29 (78.37% of 37)	4 (57.14% of 7)
Patients living, good result	6 (100% of 6)	29 (100% of 29)	2 (50.00% of 4)
Patients living, fair result .....	.....	.....	2 (50.00% of 4)
Patients dead	1 (14.28% of 7)	8 (21.62% of 37)	3 (42.85% of 7)
Cause unknown .....	.....	1	.....
Good result	1 (100% of 1)	5 (71.42% of 7)	.....
Poor result .....	.....	2 (28.57% of 7)	3 (100% of 3)
TOTAL RESULTS			
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause).....	Per Cent.		
Total fair result (patient living with slight recurrence)	86.00		
Total poor result (patient died from epithelioma)	4.00		
	10.00		

TABLE 10.—PATIENTS OPERATED ON TREATED WITH PASTES, PLASTERS, ACIDS, ETC., BEFORE ENTERING THE CLINIC

	Grade 1	Grade 2	Grade 3	Grade 4
Patients concerning whom information has been received				94
Patients living (53.19 per cent. of 94)				50
Patients living, good result	5 (11.11% of 45)	34 (75.55% of 45)	6 (13.33% of 45)	
Patients living, fair result .....	.....	1 (33.33% of 3)	2 (66.66% of 3)	
Patients living, poor result .....	.....	1 (50.00% of 2)	1 (50.00% of 2)	
Patients dead .....	.....	.....	.....	44 (46.80% of 94)
Cause unknown .....	.....	4	3	
Good result .....	.....	5 (55.55% of 9)	4 (44.44% of 9)	
Poor result .....	.....	9 (32.14% of 28)	16 (57.14% of 28)	3 (10.71% of 28)
TOTAL RESULTS				
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	62.06% of 87			
Total fair result (patient living with slight recurrence).....	3.44% of 87			
Total poor result (patient living with no improvement or died from epithelioma)	34.48% of 87			

TABLE 11.—PATIENTS OPERATED ON NOT TREATED WITH PASTES, PLASTERS, ACIDS, ETC., BEFORE ENTERING THE CLINIC

	Grade 1	Grade 2	Grade 3	Grade 4
Patients concerning whom information has been received.....				212
Patients living (61.79 per cent. of 212).....				131
Patients living, good result	34 (27.64% of 123)	83 (67.47% of 123)	6 (4.87% of 123)	
Patients living, fair result	1 (12.50% of 8)	7 (87.50% of 8)	.....
Patients dead .....	.....	.....	.....	81 (38.20% of 212)
Cause unknown .....	.....	10	9	1
Good result	4 (16.00% of 25)	17 (68.00% of 25)	4 (16.00% of 25)	
Fair result	1 (100.00% of 1)	.....	.....
Poor result .....	.....	18 (51.30% of 35)	17 (48.45% of 35)	
TOTAL RESULTS				
Total good result (patient recovered from epithelioma and is living, or recovered from epithelioma and died from other cause)	77.08% of 192			
Total fair result (patient living with slight recurrence or died from other cause)	4.68% of 192			
Total poor result (patient died from epithelioma)	18.22% of 192			

TABLE 12.—PATIENTS WITH METASTASIS OPERATED ON

Patients concerning whom no information was received				36 (34.29% of 105)
Patients from whom information was received				69 (65.71% of 105)
Patients living				12 (17.39% of 69)
	Grade 1	Grade 2	Grade 3	Total Number of Good Results
Patients living, good results*.....	.....	5 (50% of 10)	5 (50% of 10)	10 (83.33% of 12)
Patients living, fair result* .....	.....	.....	1 (100% of 1)	
Patients living, poor result*.....	.....	.....	1 (100% of 1)	
DURATION OF LIFE OF PATIENTS WITH GOOD RESULT FROM LAST OR ONLY OPERATION				
Longest				11.73 years
Shortest				3.29 years
Average				6.18 years
Patients dead				57 (82.6% of 69)
	Grade 1	Grade 2	Grade 3	Grade 4
.....	.....	15 (34.09% of 44)	26 (59.09% of 44)	3 (6.81% of 44)
Longest duration of life from last or only operation of patients who died from epithelioma				Years
Shortest duration of life from last or only operation of patients who died from epithelioma				2.5
Average duration of life from last or only operation of patients who died from epithelioma				0.066
Longest duration of life from last or only operation of patients who died from epithelioma or other cause.....				0.79
Shortest duration of life from last or only operation of patients who died from epithelioma or other cause.....				4.88
Average duration of life from last or only operation of patients who died from epithelioma or other cause.....				0.016
				0.86
CAUSE OF DEATH				
Epithelioma				44 (91.66% of 48)
Lung trouble				1 (2.08% of 48)
Sepsis				1 (2.08% of 48)
Heart disease				1 (2.08% of 48)
Pneumonia				1 (2.08% of 48)
Not stated				9

* In the ten patients with metastasis who reported a good result, and in the one who reported a fair result, the submaxillary lymph nodes on only one side were involved. In the one patient who reported a poor result, the submaxillary lymph nodes and the salivary gland on only one side were involved.

TABLE 13.—PATIENTS WITH METASTASIS IN SUBMAXILLARY LYMPH NODES ON ONE SIDE ONLY

Patients concerning whom no information was received	14 (30.81% of 44)	Patients living, fair result	1 (9.09% of 11)
Patients concerning whom information was received	30 (69.18% of 44)	Patients dead	19
Patients living	11	Patients dead from epithelioma	14 (82.35% of 17)
Patients living, good result	10 (90.9% of 11)	Patients dead from other cause	3 (17.64% of 17)
		Patients dead from cause not stated	2

TABLE 14.—PATIENTS WITHOUT METASTASIS OPERATED ON

Patients concerning whom no information was received.....				146
Patients concerning whom information was received				198
Patients living (76.26% of 198).....				151
				Total Number of Good Results
	Grade 1	Grade 2	Grade 3	
Patients living, good result	35 25.00% of 140)	99 (70.71% of 140)	6 (4.28% of 140)	140 (92.71% of 151)
Patients living, fair result	1 (10.00% of 10)	8 (80.00% of 10)	1 (10.00% of 10)	
Patients living, poor result		1 (100% of 1)		
Patients dead				47 (23.73% of 198)
Cause unknown		10		
Good result	3 (12.50% of 24)	18 (75.00% of 24)	3 (12.50% of 24)	
Fair result	1 (100% of 1)			
Poor result		9 (75.00% of 12)	3 (25.00% of 12)	
Total good result (patient recovered from epithelioma and is living or recovered from epithelioma and died from other cause)				164 (87.23% of 188)
Total fair result (patient living with slight recurrence, or died from other cause)				11 (5.85% of 188)
Total poor result (patient living with no improvement, or died from epithelioma)				13 (6.91% of 188)

TABLE 15.—PATIENTS WITH AND WITHOUT METASTASIS OPERATED ON

	Grade 1	Grade 2	Grade 3	Grade 4
Patients with metastasis		39 (37.14% of 105)	63 (60.00% of 105)	3 (2.85% of 105)
Patients without metastasis	67 (19.47% of 344)	248 (72.09% of 344)	29 (8.43% of 344)	

DURATION OF LESION BEFORE EXAMINATION AT CLINIC

	Years		Years
Longest duration (patient with metastasis).....	28.00	Patient without metastasis	25.00
Shortest duration (patient with metastasis).....	0.16	Patient without metastasis	0.08
Average duration (patient with metastasis).....	3.27	Patient without metastasis	2.40

SIZE OF LESION AT THE TIME OF EXAMINATION AT THE CLINIC

	Cm.		Cm.
Largest size (patient with metastasis).....	12.5	Patient without metastasis	10.00
Smallest size (patient with metastasis).....	1.0	Patient without metastasis	0.2
Average size (patient with metastasis).....	3.74	Patient without metastasis	2.01

ASSOCIATION OF EPITHELIOMA OF THE LIP WITH OTHER MALIGNANT NEOPLASMS

	Cases
Nonmelanotic melano-epithelioma on shoulder	1
Squamous-cell epithelioma of cheek	1
Squamous-cell epithelioma of bladder	1
Basal-cell epithelioma of eyelid	1
Adenocarcinoma of sigmoid	1
	5 (0.93% of 537)

TABLE 16.—DURATION OF LIFE AFTER OPERATION OF PATIENTS WITHOUT METASTASIS

ACCORDING TO GRADE			
Good result:	Grade 1	Grade 2	Grade 3
Number of patients	35	98	6
	Years	Years	Years
Longest duration	14.39	14.31	12.22
Shortest duration	1.73	1.25	4.3
Average duration	7.59	7.54	7.17
Fair result:			
Number of patients	1	8	1
	Years	Years	Years
Longest duration	4.39	13.68	7.32
Shortest duration		0.96	
Average duration		7.54	

DURATION OF LIFE AFTER OPERATION OF PATIENTS OF ALL GRADES			
	Good Result	Fair Result	Poor Result
	Years	Years	Years
Longest duration	10.19	.....	4.51
Shortest duration	0.36	.....	0.51
Average duration	4.47	6.73	1.85

DURATION OF LIFE AFTER OPERATION OF ALL PATIENTS WITHOUT METASTASIS	
	Years
Longest duration	10.19
Shortest duration	0.36
Average duration	3.68

DURATION OF LIFE OF PATIENTS OF ALL GRADES		
	Good Result	Fair Result
	Years	Years
Longest duration	14.39	13.68
Shortest duration	1.25	0.96
Average duration	7.53	7.2

DURATION OF LIFE AFTER OPERATION OF PATIENTS WITHOUT METASTASIS WHO ARE DEAD			
Good result—Patients did not die from epithelioma:			
	Grade 1	Grade 2	Grade 3
Number of patients	3	18	3
	Years	Years	Years
Longest duration	5.8	10.19	9.3
Shortest duration	3.5	0.36	2.02
Average duration	4.28	4.24	6.07
Fair result—Patients did not die from epithelioma but had slight recurrence:			
Number of patients		1	
		Years	
Longest duration		6.93	
Poor result—Patient died from epithelioma:			
	Grade 2	Grade 3	
Number of patients.....	9	3	
	Years	Years	
Longest duration	4.51	1.52	
Shortest duration	1.00	0.51	
Average duration	2.15	0.95	

nodes in 24.76 per cent., and the cervical lymph nodes in 24.76 per cent.

19. In a division of the epitheliomas according to cellular activity, on a basis of 1 to 4, Grade 1 represents

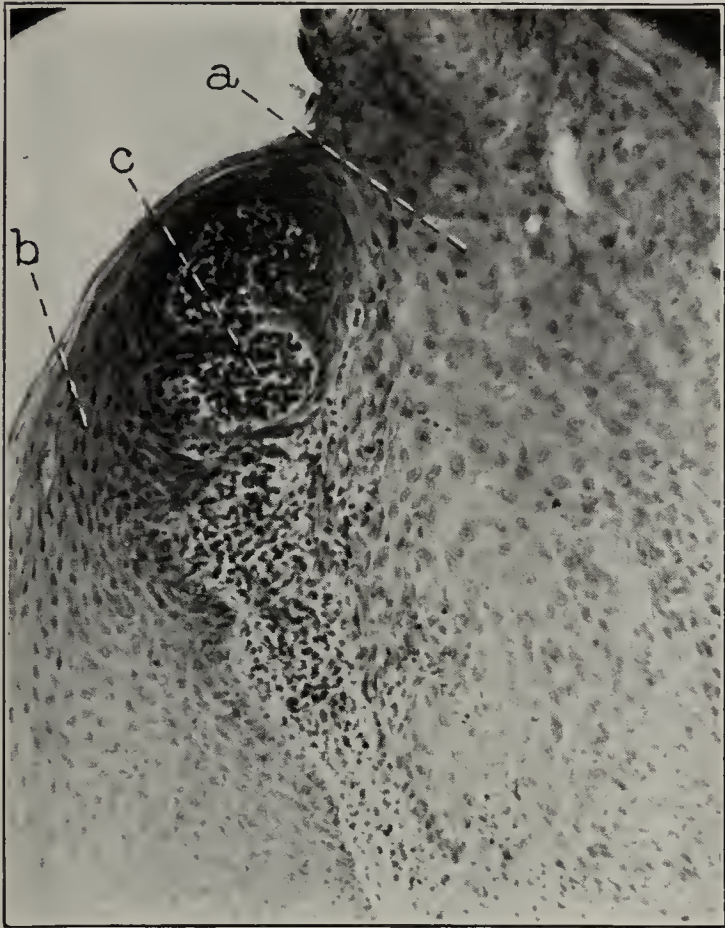


Fig. 10 (a 72479).—Grade 2 epithelioma of the lip: a, epithelioma; b, normal epithelium; c, lymphocytes

15.82 per cent.; Grade 2, 62.01 per cent.; Grade 3, 21.04 per cent., and Grade 4, 1.11 per cent.

20. The average duration of the lesion according to grade is longest in Grade 3, 3.33 years, and shortest in Grade 4, 1.29 years.

21. The average size of the lesion according to grade is largest in Grade 3, and smallest in Grade 1.

22. Of the patients operated on and traced, 40.52 per cent. are dead and 59.47 per cent. are alive.

23. Of the living patients, 92.85 per cent. report a good result, having been free from the disease on an average of 7.76 years.

24. Of the patients operated on who have died, concerning whom information has been received, 63.63 per cent. died from epithelioma.

25. Eight, or 1.55 per cent., of the patients who were operated on died in the clinic, while the actual operative mortality was only 0.77 per cent.

26. The users of tobacco who were operated on did not obtain quite so good total good results as the non-tobacco users; 78.14 per cent. in the former, and 86 per cent. in the latter.

27. In the inoperable cases, the nontobacco users reached as high as 30.76 per cent.

28. The patients who were treated with pastes, plasters, etc., before entering the clinic did not get such good total good results as those who were not so treated; 62.06 per cent. in the former and 77.08 per cent. in the latter; moreover, 31.91 per cent. of the former who were operated on had metastasis, while only 19.48 per cent. of the latter operated on had metastasis.

29. Of the patients with metastasis, 17.39 per cent. are living and 82.6 per cent. are dead.

30. Of the living who had metastasis, 83.33 per cent. report a good result. In these patients the submaxillary lymph nodes on only one side were involved.

31. No patient with the cervical nodes or more than one group of any lymph nodes involved has been reported living.

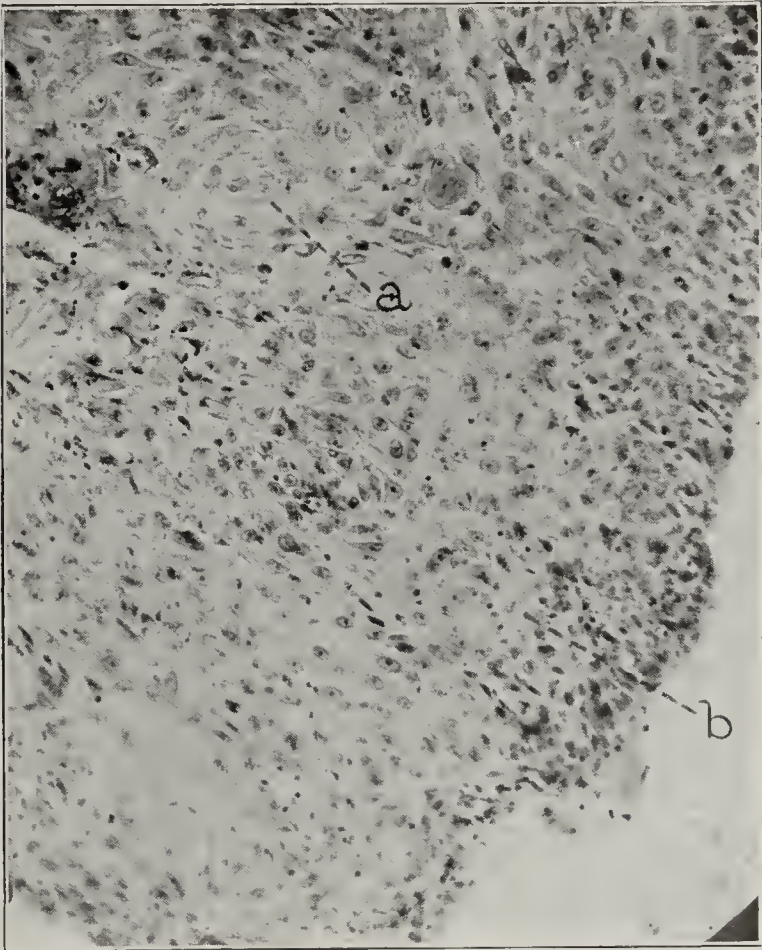


Fig. 11 (a 38260).—Grade 3 epithelioma of one of the left submaxillary lymph nodes, secondary to epithelioma of the lip; slight differentiation; the patient died from epithelioma five months after the last operation, and twenty months after the onset of the disease: a, partially differentiated cells; b, undifferentiated cells.

TABLE 17.—RESULTS FOLLOWING OPERATION ACCORDING TO GRADE

	Grade 1	Grade 2	Grade 3	Grade 4
Information received from patients operated on	45 (52.94% of 85)	192 (59.81% of 333)	65 (62.26% of 113)	4 (100% of 4)
Patients living	40 (88.88% of 45)	128 (66.66% of 192)	16 (24.6% of 65)	
Patients living, good result	39 (97.5% of 40)	119 (92.96% of 128)	13 (81.25% of 16)	
Patients living, fair result	1 (2.5% of 40)	8 (6.25% of 128)	2 (12.50% of 16)	
Patients living, poor result		1 (0.78% of 128)	1 (6.25% of 16)	
Patients dead	5 (11.12% of 45)	64 (33.33% of 192)	49 (75.38% of 113)	4 (100% of 4)
Good result	4 (80.00% of 5)	23 (45.09% of 51)	6 (15.78% of 38)	
Fair result	1 (20.00% of 5)			
Poor result		28 (54.90% of 51)	32 (84.21% of 38)	4 (100% of 4)
Not stated		13	11	
Total good result (patient recovered from epithelioma and is living or recovered from epithelioma and died from other cause)	43 (95.55% of 45)	142 (79.32% of 179)	19 (35.18% of 54)	
Total fair result (patient living with slight recurrence or died from other cause)	2 (4.45% of 45)	8 (4.46% of 179)	2 (3.70% of 54)	
Total poor result (patient living with no improvement or died from epithelioma)		29 (16.20% of 179)	33 (61.11% of 54)	4 (100% of 4)
Total result not stated		13	11	

32. Of the patients reported dead who had metastasis, 91.66 per cent. died from epithelioma.

33. If a patient has the submaxillary lymph nodes on one side only involved, he has a 1 to 3 chance of getting a good result, and will be living and well on an average of 6.18 years after operation.

34. Of the patients operated on in whom no metastasis was demonstrated, 76.26 per cent. are living, and 23.73 per cent. are dead; of the living, 92.71 per cent. report a good result.

35. The average duration of the lesion in the patients with metastasis is 3.27 years, as compared with 2.40 years in those without metastasis; the average size of the lesion is 3.74 cm. in the patients with metastasis, as compared with 2.01 cm. in those without metastasis.

36. Among the known causes of death, deaths from epithelioma were as follows: none of Grade 1; 54.90

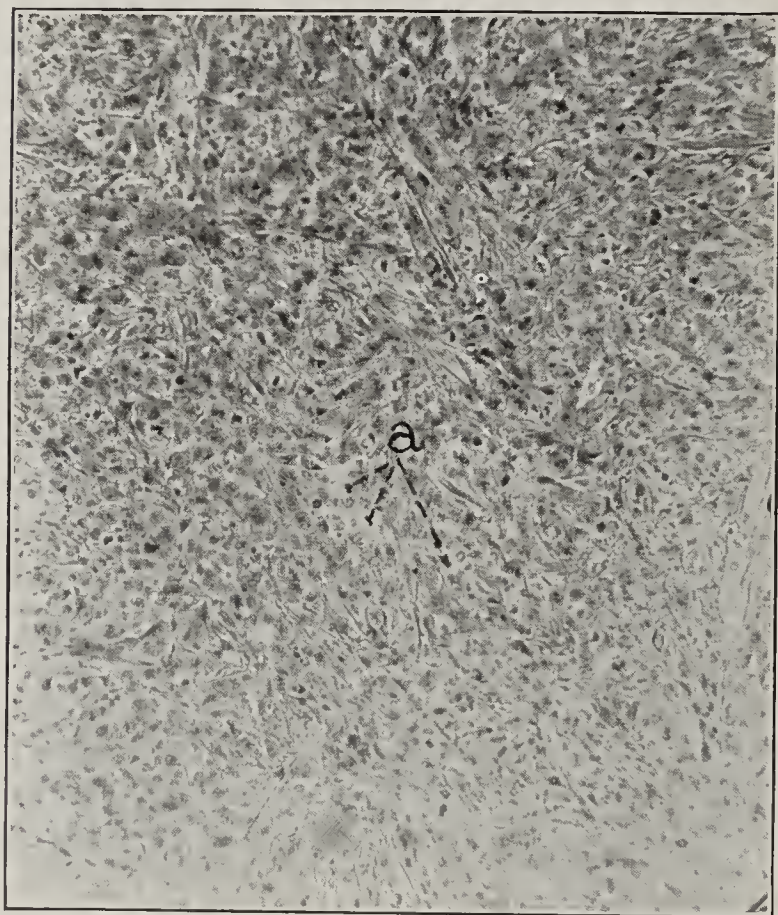


Fig. 12 (a 74162).—Grade 4 epithelioma of the liver secondary to epithelioma of the right side of the upper lip; no differentiation; numerous mitotic figures; high degree of malignancy; the patient died four and one-half months after the last operation, and eleven months after the onset of the disease, with metastatic epithelioma of the lymph nodes of the right side of the neck, right peritracheobronchial nodes, right lung, and liver: a, mitotic figures.

per cent. of Grade 2; 84.21 per cent. of Grade 3, and 100 per cent. of Grade 4.

37. Some malignant neoplasm was associated with the epithelioma of the lip in 0.93 per cent. of the patients.

The First Book on Pediatrics.—The first book ever published on children's diseases is probably the work by Omnibono Ferrarii, printed in Bruges, 1557. The book is in Latin, in quarto, has 196 pages, besides three chapters with 12 pages of aphorisms. The book is dedicated to the College of Physicians and Philosophers of Verona. The dedicatory expresses the view that every person should have two purposes in life: First, avoid laziness so as not to waste his life, and second, show his gratitude to the persons from whom he has received any favors. According to the author, his book was written after having noticed that the ancient physicians who wrote about children did not say anything about nurses' diseases nor describe methodically the different diseases that might befall children.

THE INTESTINAL TUBE

ITS SIGNIFICANCE AND APPLICATIONS*

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In the descriptions contained in this article, I am dealing primarily with the introduction of the rubber tube into the intestine beyond the duodenum. I have therefore taken the liberty of referring to it as an intestinal tube, rather than a duodenal tube, for the latter might imply that its use is limited to the duodenum.

The primary purpose of this study of a series of roentgenograms of the intestinal tube in a given case is to demonstrate more clearly the principle of the detachable bulb, as outlined in a preceding communication.¹ In that article, I described a modification of the duodenal tube, which, I believe, enhances its usefulness in intestinal feeding. In the first place, several openings were made along the course of the tube, up to a distance of about 1½ inches from its end, each opening about the size of its lumen. The purpose of this was to minimize the possibility of occlusion which occasionally occurs. Of greater value was the change from an end-piece that was permanently attached during its sojourn in the intestine, to an end-piece that could be detached shortly after the tube had reached its destination. This modification was considered of importance because of the possibilities of danger resulting from a prolonged direct contact of a weighted substance with the delicate intestinal mucous membrane. The detachable bulb not only obviates this factor, but as a direct result, makes it possible to use the tube in the intestine over a longer period of time, a factor which might be of value in the more chronic affections. I was able to accomplish this modification by sewing the metallic bulb to the end of the rubber tube with catgut. Plain catgut was first used, but in a number of cases, owing probably to a contraction of the pyloric sphincter, the tube remained in the stomach for several hours and the gastric secretions had digested the catgut, causing the premature detachment of the bulb. Without a weight at the end of the tube, there was a tendency for it to remain coiled within the stomach, the end failing to pass into the intestine. After experimenting with different kinds of catgut, I decided on the use of chromicized catgut No. 4, as this gave the most satisfactory results.

To illustrate this principle more clearly, it was decided to take a series of roentgenograms from the time the tube was swallowed and the end had passed within the intestine, until the bulb had left the intestinal canal.

As soon as the clear bile colored fluid was obtained by aspiration, I had a roentgenogram taken, with the result shown in Figure 1. The roentgenogram was taken during the process of injecting a suspension of barium in buttermilk through the open end of the tube by means of a syringe. The picture obtained showed the end of the tube within the intestine. From then on, roentgenograms were taken at varying intervals, with the idea of obtaining information regarding the time when the detachment of the bulb from the end of the tube occurred; and finally, after the bulb had left

* From the Medical Service, U. S. Army General Hospital No. 41, Col. C. R. Snyder, Chief of Staff.

1. Buckstein, Jacob: Experiences with Duodenal Feeding at U. S. Army General Hospital No. 41, J. A. M. A. 73: 670 (Aug. 30) 1919.

the intestinal canal and had been recovered from the stool, a roentgenogram was obtained showing only the rubber tube in place.

This detachment of the bulb is clearly demonstrated in Figure 2. The last plate of this series (Fig. 3) was taken after the bulb had been recovered from the

the taking of the roentgenograms, the patients engaged in the ordinary motions of getting off the roentgen-ray table, walking, sitting down and arising, getting back on the table at the appointed time, and movements of a similar nature. In the different pictures of each series I noticed changes in outline, no two being alike



Fig. 1.—Shortly after the removal of intestinal fluid.

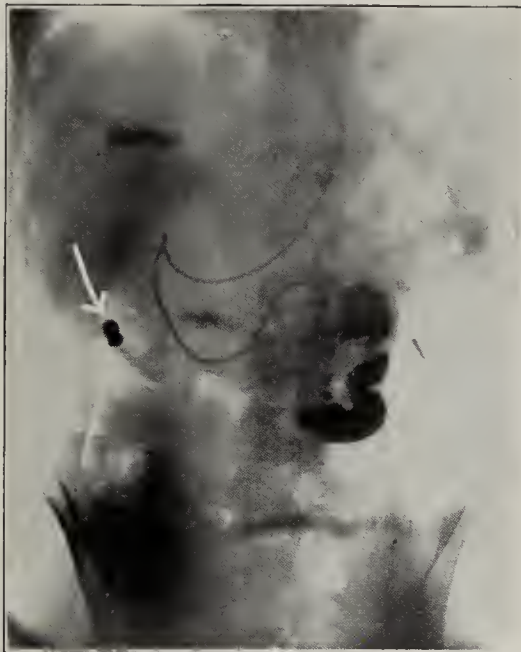


Fig. 2.—Thirty-two hours after swallowing the tube; bulb (indicated by arrow) detached.



Fig. 3.—Fifty hours after swallowing the tube, and shortly after recovering the bulb from the stool.

stool. As a rule, the bulb is recoverable from thirty-six hours to four days after the tube is swallowed. In one case, although the bulb became detached within thirty-six hours, the patient did not recover the bulb from the stool until the fortieth day.

In examining the series of plates, I noticed an interesting fact: In the same patient and with the same length of tubing the outline of the intestine was different in each succeeding picture, although at the time each roentgenogram was taken, the patient occupied the same prone position. To demonstrate this change more

although taken with the same length of tube in the same patient and in the prone position.

The series of pictures appeared to indicate what may perhaps best be referred to as a shifting motion of the intestinal coils. It would seem, on *a priori* grounds, that such a shifting motion must inevitably be expected when we realize that the many coils of intestine attached to the mesentery are freely movable within the abdominal cavity. As the tube outlines the intestine, any change in position of the intestine will be indicated by a concomitant change in the position of the tube.

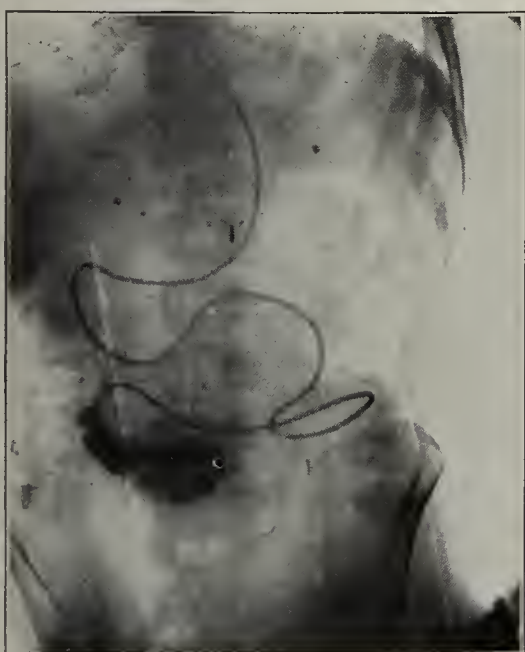


Fig. 4.—Tube swallowed for a distance of 120 cm. from the teeth.

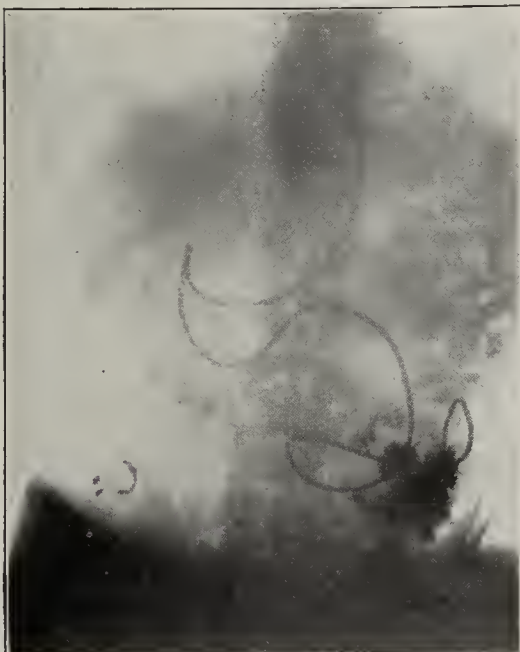


Fig. 5.—Roentgenogram taken one hour after swallowing the tube.

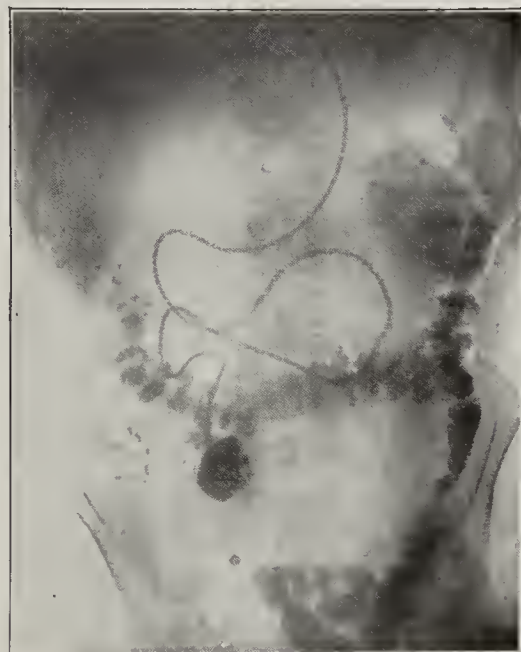


Fig. 6.—Two hours after swallowing the tube.

clearly I had another patient swallow the rubber tube for a distance of 120 cm. from the teeth. Roentgenograms were taken at varying intervals, as indicated in Figures 4, 5 and 6. Another series (Figs. 7, 8, 9 and 10) was taken at a distance of 130 cm. from the teeth, and still another series (Figs. 11 and 12) at a distance of 150 cm. from the teeth. In the intervals between

To determine whether changes in the outline of the coils occurred while the patient continued in the prone position and did not move about between the taking of the roentgenograms, a series of plates was taken while the patient remained prone during the entire period. One picture was taken every five minutes during the course of one hour. On examination, practically no

change in intestinal outline was visible in the different plates.

We may assume that the changes in outline in the various series were due to changes in the position of the body in the intervals between the taking of the pictures. We may conclude, first, that a roentgenogram

the shifting motion of the intestinal coils, clearly indicated in the illustrations, probably plays a real part in the mechanical process of propulsion.

The possibility of the introduction of the end of the rubber tube to different portions of the small intestine widens the field of gastro-enterology from a practical

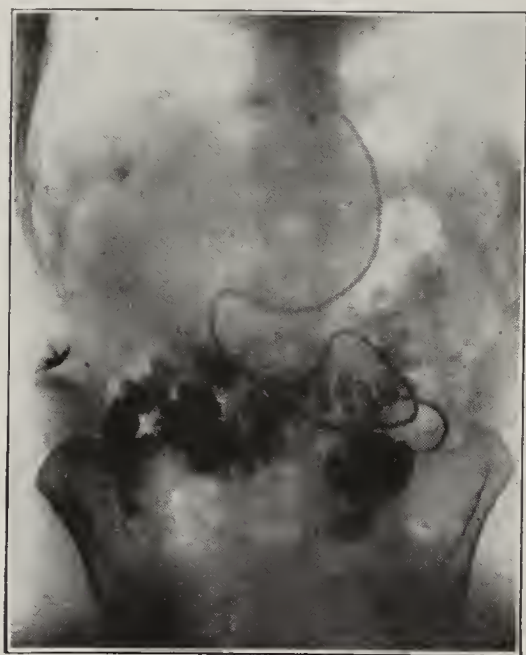


Fig. 7.—Tube swallowed for a distance of 130 cm. from the teeth.

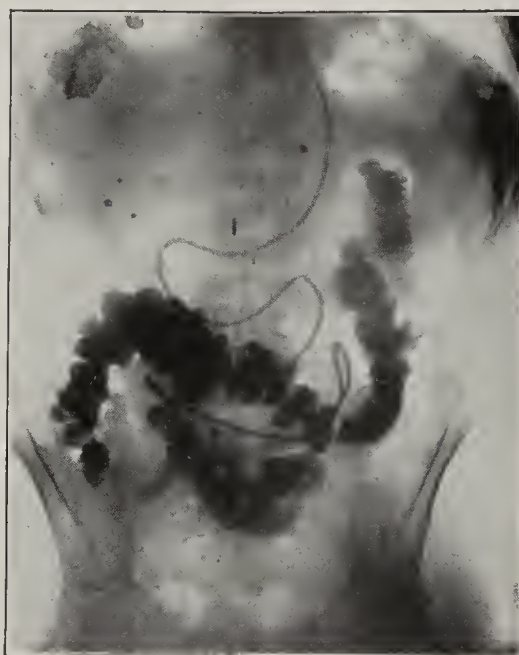


Fig. 8.—Five minutes after swallowing the tube.

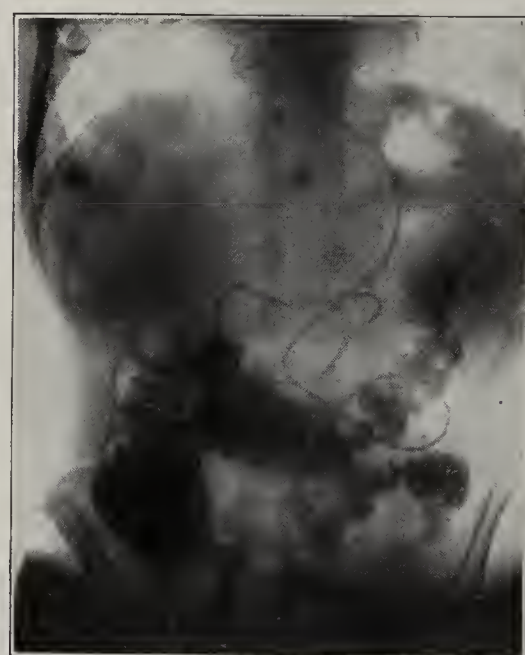


Fig. 9.—Fifteen minutes after swallowing the tube.

of a rubber tube within the intestine gives us an indication of the outline of the intestine only at that particular time; secondly, that there is a continual change in the position of the intestinal coils brought about through bodily motion, and thirdly, that we have here an indication of one specific way in which exercise acts as a therapeutic measure in some cases of chronic constipation.

It is a plausible assumption that the movement of the intestinal coils will be increased as the result of the increased bodily motion. A marked increase in the shifting of the intestinal coils probably aids in the

therapeutic standpoint, and also from the standpoint of the biochemistry, bacteriology and parasitology of the intestinal canal. Since the end of the tube may pass well within the intestinal canal, the principle of duodenal feeding may be extended in its application to intestinal feeding, which may perhaps find a use in the rare conditions of jejunal and gastrojejunal ulcers that may complicate a gastro-enterostomy, and perhaps also in the case of fistulas that might conceivably occur at different parts of the intestine.

The principle of transduodenal lavage was first emphasized by Jutte. While our ordinary enemas at

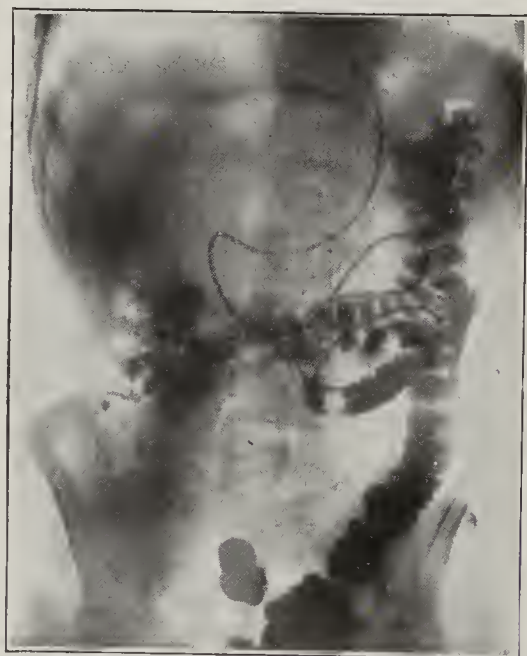


Fig. 10.—Two hours after swallowing the tube.

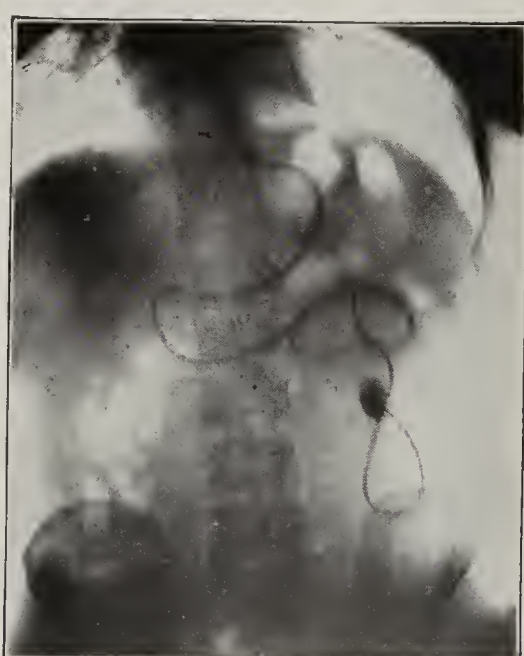


Fig. 11.—Tube swallowed for a distance of 150 cm. from the teeth.

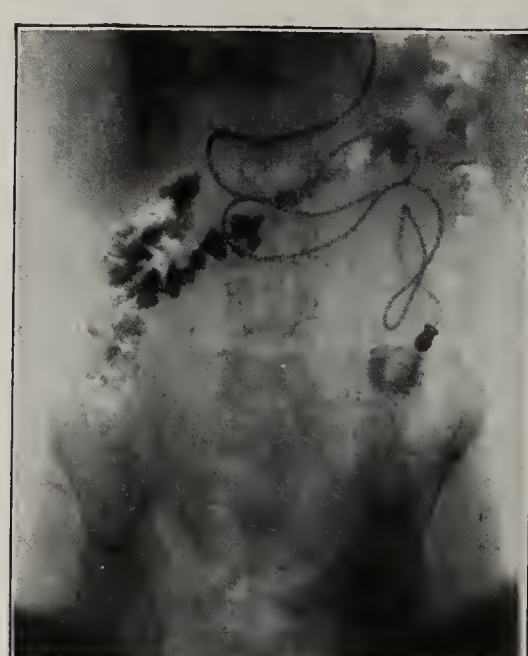


Fig. 12.—Twenty-four hours after swallowing the tube.

onward propulsion of material contained within the lumen. For this reason, apart from its value in toning up the entire system through its influence on the circulation, exercise is to be advocated where constipation occurs in those of sedentary habits.

While rhythmic segmentation and intestinal peristalsis are the prime factors in the mechanics of digestion,

best reach only a small portion of the intestinal canal, we have by means of lavage through the intestinal tube a method of cleansing the entire intestinal canal and ridding it of stagnating material. Oxygen insufflation, and the introduction of medication through the tube, have also been practiced. Not only may lavage and medication be employed in this way, but the ready

passage of the tube to varying distances within the lumen of the intestine makes possible the direct introduction of therapeutic agents to definite parts along the course of the intestinal tract.

Of interest from a biochemical standpoint is the fact that we may obtain intestinal secretions for examination. Hitherto, our analysis of the gastro-intestinal secretions in the living human being has been practically limited to the secretions of the stomach and of the duodenum. The value of our results was enhanced through the methods of fractional examination of the gastric secretions as emphasized by Rehfuess, and of the fractional examination of the duodenal secretions emphasized by Einhorn. There is no mechanical difficulty in the way of obtaining secretions beyond the duodenum. I believe that analysis of these secretions may not only prove of theoretical interest, but also may ultimately throw light on some of the more obscure intestinal derangements.

SUMMARY

1. There is a distinct value in the principle of the detachable bulb for the construction of the intestinal tube when used for feeding.
2. The intestine is clearly delineated in a roentgenogram by means of the barium filled rubber tube.
3. The shifting motion of the intestinal coils, as indicated by the changing outline of the rubber tube, throws some light on the mechanics of propulsion and on the therapeutic value of exercise in constipation.
4. Direct introduction of therapeutic agents is made possible at specific portions of the intestine.
5. Secretions from different portions of the intestine below the duodenum may be obtained for the purpose of biochemical, parasitic and bacteriologic examinations.

THE TREATMENT OF ECZEMA *

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As is generally well known, many diseased conditions of the skin are classed as eczemas or dermatitides. The so-called trade or occupational eczemas under the newer classification are considered as dermatitides. In discussing the treatment of eczema, therefore, it must be borne in mind that while the disease is a clinical entity, it does not represent a definite pathologic process with well-defined etiology. While it is true that many external factors may precipitate the outbreak of eczema, it is commonly assumed that some peculiar predisposition to the disease exists. This is perhaps a metabolic error, because the same external noxae which bring about an outbreak of eczema in a susceptible person will not provoke the eruption in a normal one. Concerning this point a painstaking and thorough examination of the patient and minute attention to his history and habits are of value.

Changes in metabolism which predispose to eczema are not well understood. At times these inherent causes cannot be determined; at other times they may not be controllable. In all instances in which the internal causative factors are not apparent, or their discovery is delayed, the pathologic process should be

treated as observed. The patient should be warned against contact with irritating substances which may produce inflammation of the skin. If, however, the underlying cause in a given case can be determined, its elimination must be accomplished or at least attempted.

Eczema most frequently affects printers, bakers, painters and plasterers; but washerwomen, janitors, and employees in certain chemical industries or those who constantly come in contact with various irritating substances, are likewise frequently sufferers from this disease. In this type of case the patient will, of course, be ordered to refrain from his work until he is completely cured. Even then, recurrences may be anticipated if the same occupation is followed. These untoward circumstances often make treatment and cure financially difficult for the patient. Such susceptible persons should be advised to change their trade or occupation if possible, so that recurrences may be avoided.

The treatment here described has been found safe and in the majority of cases satisfactory in my own work. The external treatment of eczema depends on the intensity, the stage of the disease, and its duration; in other words, on the clinical symptoms as interpreted from a pathologic point of view. Those substances



Fig. 1.—Eczema of the face with crusts and scales and papules at borders of the lesions.

which produce irritation of the skin should first be eliminated from the patient's surroundings. In severe and generalized or extensive cases the patient should not wear starched linen or other articles of dress which rub against the inflamed parts. He should be confined to his room and should not exert himself, so as not to become overheated and thus produce hyperemia, which

aggravates the condition. Next, the skin should be treated with preparations which tend to alleviate the itching and to cause the inflammatory process to retrograde. There is no specific medication for the disease: each case requires therapy based on the clinical picture at the time the patient comes under treatment. The physician should not change too rapidly from one type of medication to another. If a given preparation or combination causes improvement, it should be continued until improvement ceases. Nothing is so fruitless, nothing causes more harm, than irrational, ever-changing therapeutics.

ACUTE ECZEMA

In acute papular or papulovesicular eczema the skin is often so irritable that salves and ointments as well as pastes are poorly tolerated. In these instances applications of a mild alcoholic solution of 0.5 per cent. of salicylic acid followed by the use of a bland dusting powder are indicated every three or four hours.

	Gm. or C.c.
Salicylic acid	1 2
Diluted alcohol	240
Label: Apply to affected parts.	
	Gm.
Starch	60
Talcum	60
Label: Use as dusting powder.	

* Read before the Chicago Medical Society, Jan. 28, 1920.

* Photographs from the collection of Northwestern University Medical School, Department of Skin Diseases and Syphilology, courtesy of Dr. Lawless.

The alcoholic solution of salicylic acid has a slightly astringent action as well as a cooling effect, and the dusting powder affords desirable protection. In this way the eczematous outbreak can often be aborted and recovery obtained in a few days. On the other hand, the papules may prove resistant and while the associated erythema and swelling disappear, the papules become somewhat harder in consistency and



Fig. 2.—Marked subacute eczema of the right arm, with scales and crusts and papules at border of patch.

more apparent to the eye. At this stage the skin is not so irritable and may well tolerate ointments and pastes, followed by the application of a bland dusting powder, or a zinc oxid lotion may be used.

Zinc oxid	Gm.	
Talcum	15	
Petrolatum	30	
Label: Apply to inflamed parts.		
Zinc oxid	Gm. or C.c.	
Starch		
Glycerin		
Distilled water	15	
Label: Zinc oxid lotion.		

Under this treatment, the acute cases become subacute, the papules lose their redness, and become darker or somewhat livid or brownish in hue. At this point a high dilution of some drug which hastens desquamation may be added to the ointment or paste. For example, tar preparations, such as the oil of cade or rectified oil of birch tar, ichthyol and its allied preparations, or salicylic acid, may be added.

Zinc oxid	Gm. or C.c.	
Talcum	10	
Petrolatum	20	
Rectified oil of birch tar	3	
Label: Tar-zinc paste.		

The use of tar preparations is indicated especially at this stage because of their effect in controlling dilatation of the blood vessels. However, it must be emphasized that their use should be followed rather gingerly, testing out, as it were, the patient's tolerance. It is not well to prescribe oil of cade or oil of Russian birch in strengths greater than from 0.5 to 1 per cent. in the first prescription containing tar.

In cases of vesicular and moist or weeping eczema the skin is in an even more irritable and intolerant condition. Here only the blandest, most soothing and cooling applications may be used. The preparations first mentioned are not to be used. Alcohol would cause pain, and dusting powders in admixture with the serous exudate would form a thick, adherent crust. One must, therefore, select applications which are protective and which at the same time will permit the free evacuation of the products of inflammation. In this instance a moist or wet dressing has cooling qualities and at the same time aids in the maceration of the

roofs of the vesicles. Impermeable substances, such as oil silk or gutta percha tissue should not be applied over these wet dressings. It is distinctly desirable, however, to change dressings frequently. Dressings saturated with any of a number of solutions meet the indications admirably. Lead water diluted with from five to eight parts of water, solution of aluminum subacetate diluted with nine parts of water, and an aqueous solution of ichthyol 1:100, have proved efficacious.

These solutions are best used cold and should be changed every ten or fifteen minutes. The gauze should not be folded in more than three or four thicknesses, so that evaporation can readily take place. In the event that aqueous solutions are poorly tolerated, a mild ointment, such as boric acid and benzoated lard, or a mixture of equal parts of lime water and olive oil may be tried.

Should there be only slight or no improvement from these aqueous solutions or mild ointments, it is advisable to resort to the use of ointments or pastes of greater consistency; for example, zinc oxid ointment or Lassar's paste, applying the ointment on linen or mull bandage and swathing the part. If, finally, even the thicker ointments and pastes do not bring results, it may be necessary to resort to energetic stimulation which causes a crust to form. The crust acts as a protective covering under which the repair process goes forward. Stimulating applications may be made by painting the part with a 5 per cent. silver nitrate solution, or with a 10 per cent. alcoholic solution of tar. After application the part is covered with starch powder. It is well again to emphasize that the medication which causes improvement should be continued, while that which aggravates the condition or which



Fig. 3.—Eczema squamosum et crustosum of the leg with thickening of the skin, accumulation of scales and crusts and relatively sharp demarcation of lower margin of patch.

brings about no improvement must be immediately stopped.

In more chronic cases of vesicular eczema when the acute inflammatory symptoms have disappeared and when oozing has stopped and the patches are covered with adherent crusts (eczema crustosum), a good local application is a dressing impregnated with an astringent.

gent paste or ointment. Diachylon ointment serves his purpose very well; the ointment is applied to linen and the bandages are changed once daily and the part cleansed with olive oil. Such dressings are continued until all evidence of the disease has disappeared.

ECZEMA SQUAMOSUM

The method just described is applicable to cases of squamous eczema without previous use of the foregoing methods of treatment, because it will cause maceration of the scaly covering of the patch and produce an astringent effect on the dilated vessels. It also serves as a valuable protective covering. The standard treatment for squamous eczema is the application of nonirritating ointments or pastes to which may be added some antipruritic, such as thymol, phenol, camphor or salicylic acid. Tar preparations are indicated when the area has become distinctly less inflammatory and has taken on a bluish red or livid appearance. When the patient is free from eczema he must observe certain precautions: He must use a minimum of water on the skin; he should use only nonirritating soaps, and following a bath he should anoint his body with a bland oil.

ECZEMA OF THE SCALP

Eczema of the scalp is considered a special type of the disease because the numerous sebaceous glands partake in the inflammatory reaction. Thick pastes or ointments are naturally not indicated and must not be used. Nightly applications of oil to the scalp with a protective dressing on the head are advised, the scalp to be washed with soap and warm water in the morning. In this way the crusts and other products of inflammation are removed. The removal of crusts is essential so that subsequent therapy may reach the affected integument. In cases of moist eczema of the scalp, applications saturated with solution of lead acetate or aluminum subacetate meet the indications. When the oozing or weeping has stopped it is well to apply oily suspensions or thin ointments containing tar, sulphur or both.

	Gm. or C.c.
Rectified oil of birch tar.....	1
Precipitated sulphur	2
Benzoated lard	20
Petrolatum	āā

Label: Apply to scalp.

To remove the scales an alcoholic lotion may be used with a small admixture of kerosene or ether. In many cases of chronic eczema of the scalp a 5 per cent. white precipitate ointment is of great value.

ECZEMA OF THE NARES

This condition is frequently associated with pathology in the nasal cavities, for example, deflected septum, hypertrophied turbinates, or polypus, and is often present in cases of chronic rhinitis. In these cases it is well to have the cooperation of a rhinologist. The patient often develops rhagades, and frequently erysipelas may follow if this condition persists. These cases are best treated with tampons impregnated with 5 per cent. white precipitate ointment or a 10 per cent. ichthyol ointment.

ECZEMA OF THE PALMS

Eczema of the palms and soles is given special consideration because of the marked thickness of the

epidermis in these parts. The vesicular type is rarely seen here because the epidermis is so closely and intimately connected with the underlying structures. In these cases a marked thickening of the epidermis is noted. The first therapeutic indication is the removal of this horny accumulation, so that the underlying inflammatory process may be influenced by the medication ordered. This can be accomplished by energetic therapy which produces maceration, for which a suitable ointment applied to a mull bandage and brought into intimate apposition with the skin is very useful.

	Gm. or C.c.
Diachylon ointment	30
Oil of cade.....	6

Label: Apply on linen and bandage.

During and after this mode of treatment it is well to use a formaldehyd ointment, because of the marked hyperhidrosis which is frequently associated with this form of eczema.

	Gm. or C.c.
Solution of formaldehyd.....	5
Menthol	5
Wool fat	25
Petrolatum	āā

Label: Formaldehyd ointment



Fig. 4.—Chronic eczema of left leg associated with varicose veins, horny epidermis, scales and hard infiltrated papules at margin of lesion.

The frequent use of water is not permitted because it stimulates the growth of horny epidermis.

ECZEMA OF THE BREAST

In eczema of the breast it is well to examine the patient carefully for the presence of scabies. If scabies exists it should be energetically treated regardless of the intensity of the eczema. If the eczema is a result of nursing and the condition is not so severe as to necessitate weaning the child, great care must be exercised not to prescribe drugs which might be toxic to the infant. With these reservations, eczema of the breast is treated according to the foregoing rules and suggestions.

ECZEMA OF THE GENITAL AND ANAL REGIONS

It is not unusual to find eczema around the genital and anal regions, since hemorrhoids and constipation favor its presence. Cases of nervous pruritus are frequently sources of eczema, owing to the rubbing and scratching of the parts by the patient. Close attention to the regularity of the bowels, scrupulous cleanliness locally, and the use of ichthyol rectal suppositories are important aids in the treatment of the condition. In this location also, as long as there is weeping, applications of solution of aluminum subacetate are indicated, after which stage mild ointments may be used.

However, in many cases of eczema around the anal region, tar and other stimulating drugs may be used earlier than elsewhere.

The skin must be kept as dry as possible because any excess of moisture causes untoward maceration. In order to avoid this, ample dusting with starch powder and the application of a suspensory padded with absorbent cotton are valuable. To allay itching in the anal region, many drugs may be used in various types of application. However, one often has to experiment with the individual case to determine which drug to employ. The following may be used alone or in combination: tar, salicylic acid, betanaphthol, compound sulphur ointment (Wilkinson's ointment), solution of coal-tar, and ichthyol.

ECZEMA IN CHILDREN

In eczema of children one proceeds ordinarily in the routine manner. The children are not bathed, the skin is anointed with olive oil, and very mild ointments, such as zinc oxid ointment or zinc oxid ointment mixed with diachylon ointment, are applied to the skin. In order to prevent scratching, the hands of the child are tied. Later, as the condition improves, it is well to wash the skin with 40 per cent. alcohol.

In those locations where the skin surfaces lie in contact with one another, intertrigo often occurs in children as well as in adults. In order to care properly for these cases it is necessary to cleanse the skin carefully and to keep the surfaces apart by interposed padding. In fat children suffering from eczema intertrigo, one often sees dusting powders liberally used, frequently talcum powder, which forms into granules of variable size and often serves as an additional source of irritation. The principle of applying a bland powder is correct, but the result of using a dusting powder, especially talcum alone, is often unfortunate. Dusting powders may be used advantageously if applied on absorbent cotton rolls which are placed between the folds of the skin. By this method the cotton absorbs the moisture, and the powder does not form into rough, irregular, irritating granules. The cotton rolls must, of course, be changed frequently because they quickly become saturated. Here again in cases of marked or even moderate oozing the indication is for moist dressing of solution of aluminum acetate or subacetate, which should be applied cold and frequently changed.

ECZEMA ASSOCIATED WITH ANEMIA

In cases of eczema associated with marked anemia, the treatment is similar to the same type of eczema in other persons, except that experience has shown that the admixture of cod liver oil in the ointments favors their tolerance. The general condition of the patient,

usually a young person, must, of course, be taken into consideration. Iron, arsenic, cod liver oil or other remedies for anemia may be prescribed as indicated.

CHRONIC ECZEMA

Chronic eczema shows superficial inflammatory signs similar to those noted in the acute type. However, there is present in these cases a deep-seated infiltration of the corium resulting from the protracted course of the disease. Therapy is directed, therefore, first toward the symptoms as observed, and second, to overcome the infiltration in the corium and the thickening of the skin. So long as the latter is not accomplished, recurrences may be expected. The superficial inflammatory reaction is treated in the same manner as in acute or subacute cases, with moist dressings, ointments, pastes and other applications. It usually yields readily to treatment and leaves the skin somewhat discolored, scaly, and often cyanotic and thickened.

In these chronic cases we do not then apply ointments containing tar or ichthyol as has been described, but institute a definitely planned treatment which compresses the involved cutis, and produces maceration and subsequent exfoliation of the overlying layers. This is best carried out with bandages impregnated with diachylon ointment, which actually function as plasters, or, in less inflammatory cases, by the use of salicylic acid plaster. This treatment must be carried out often for a period of weeks, but eventually produces excellent results.

It is well in cases of marked thickening of the skin to apply a thin coating of the undiluted oil of cade with a camel's hair brush, and then bandage with diachylon ointment. If this intensive therapy is poorly tolerated, the parts may be bandaged with Lassar's paste after the application of oil of cade. Often such dressings may be left for several days, and need not be removed unless the patient complains of burning or pain. This method simplifies the treatment considerably. The latter part of the treatment of such a persistent chronic case is carried out by the application of tar ointments or pastes, but only after the intense thickening has been carefully eliminated by the previous use of bandages.

INTERNAL THERAPY OF ECZEMA

In an article of this character the internal treatment can only be outlined. As has been stated, the causative factors of internal origin, when discovered, must be eliminated as completely as possible.

The dietary management of a patient is one of the most important features in the treatment of many if not most cases of eczema. Some patients do not tolerate carbohydrates as well as others, and in these cases a reduction of carbohydrate intake almost to complete



Fig. 5.—Chronic eczema with marked lichenification on inner aspect of thigh.

elimination is a necessary procedure. In all cases it is well to examine the urine, noting any change from normal; sugar especially should be looked for. Some cases of carbohydrate intolerance, while showing no sugar in the urine, present quite constantly an increased amount of sugar in the blood.

Other patients are intolerant of sodium chlorid in large quantities, and questioning will often bring out the fact that these patients indulge overmuch in the use of ordinary table salt. Still other patients eat excessive quantities of nitrogenous articles of food, and a diminution in this element is of distinct advantage.

Especially in persons past middle life suffering from eczema, nephritic changes should be looked for, and if present, properly treated. Certain other patients with eczema present an anaphylactoid if not a true anaphylactic reaction against specific proteins or proteins of certain groups, among which may be mentioned egg albumin, pork, and the protein of cow's milk. It would lead too far ahead to enter on a discussion of the various proteins which, in susceptible persons, may cause an outbreak of eczema, but the careful clinician will bear these possibilities in mind and will inquire into the dietary habits of his patients. Often he will find that the patient himself may connect the ingestion of certain articles of diet with the appearance of the eruption. A patient recently under my care reacted in a marked way to the ingestion of walnuts. Besides the eczematous condition which followed he also presented marked edema of the nasal and conjunctival mucosae. It is well, therefore, to start a patient off with an absolutely bland diet, which is readily digestible and which contains little or none of the substances that experience has shown may be productive of eczema.

There are undoubtedly patients in whom the predisposition to eczema can in a greater or less degree be controlled by organotherapy. I have repeatedly seen patients materially aided by small doses of thyroid substance, and several neurotic and underdeveloped young women, I am sure were markedly benefited by the use of corpus luteum extract. However, the physiology and therapeutic uses of the ductless gland substances are in general so poorly understood that it is impossible to give clear-cut indications for their use, and the suggestion is offered merely as one that they may sometimes be helpful in the management of eczema.

25 East Washington Street.

Infant Mortality in War Zone.—A report on the subject of the sufferings of French and Belgian children under German domination in the occupied regions has been made to the French Academy of Medicine by Dr. Albert Calmette. It was found that out of 18,036 children who at the time of the armistice were attending the public or private schools of Lille, rather more than 8,000 had to be sent to hospital or convalescent colonies by the ministry of the invaded regions. This selection, made by specially qualified doctors, established that in all the scholastic groups at the end of the occupation the growth of 60 per cent. of the children had been definitely arrested, while about 40 per cent. showed clear signs of tuberculosis of the lymph glands. In a single school (Ecole Fombelle) inspected in March, 1919, of 210 children examined only one was normal; 163 suffered from deformity or other disease; 139 had swollen glands; forty-two had rickets, and six had pulmonary tuberculosis.—*Med. Officer*, Nov. 29, 1919.

Clinical Notes, Suggestions, and New Instruments

BLOOD TRANSFUSION APPARATUS

L. L. STANLEY, M.D., SAN QUENTIN, CALIF.

This blood transfusion apparatus was devised and has been successfully used at the California State Prison, at San Quentin, Calif. It is of the ball valve plan, and may be used with any capacity Luer syringe.

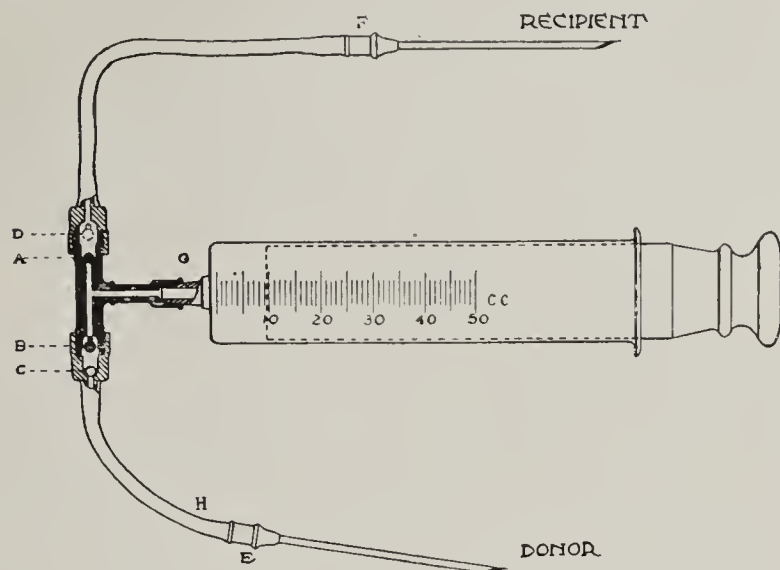


Fig. 1.—Details of blood transfusion apparatus.

When the plunger of the syringe is drawn out, the ball *A* (Fig. 1) engages in the socket, not permitting any fluid to pass it, while the ball *C* is displaced upward to position *B*, allowing the blood to come from the donor into the syringe. When the syringe piston is pushed in, the ball in the lower chamber engages the socket at *C*, preventing the fluid from returning to the donor. At the same time the ball *A* is released from its socket and assumes a position in the upper chamber at *D*, allowing the blood forced from the syringe to flow into the veins of the recipient.

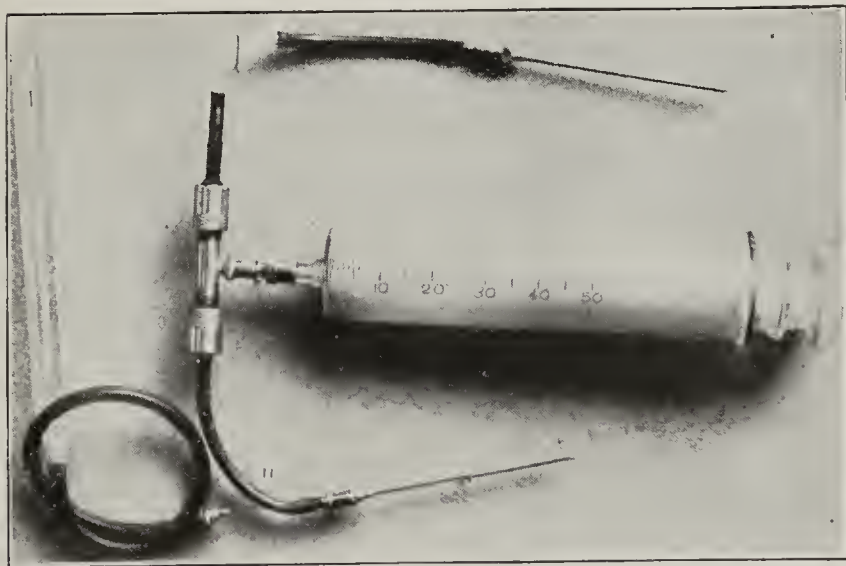


Fig. 2.—Blood transfusion apparatus and buret.

The donor and the recipient are placed on adjoining tables, with the arm of the recipient slightly higher than that of the donor, for the balls engage by gravity, and the valve must be held in a vertical position. The syringe is thoroughly sterilized, and the inside is coated with Ablemann's citrated ointment, which consists of:

	Gm. or C.c.
Adeps lanae	10
Aqua	10
Sodium citrate	10
Petrolatum	q. s. ad 100

The valve connections and needles are boiled together.

With the syringe connected, enough physiologic sodium chlorid solution is drawn in to displace any air, and leave a

few cubic centimeters in the barrel. The cubital veins of both parties are located, and tourniquets applied. The needle is placed first into the vein of the donor, and when blood begins to flow, is connected to the apparatus at *E*. Similar procedure is done with the recipient, and when the connection is made at *F*, the operator may pump the blood.

The apparatus is so arranged that it may be taken apart and thoroughly cleaned. It is well to have two of these valves, one to quickly replace the other, in case the syringe should begin to work hard, or the blood begin to clot. The first valve is easily disconnected at *E*, *F* and *G*, and the second one substituted.

Should it be desirable to give citrate solution with the blood, a buret (*I*, Fig. 2), to which is attached a rubber tubing with a No. 28 hypodermic needle at the end, is provided. When the apparatus is connected up, the needle is plunged into the connecting tube at *H*. As the blood is drawn in from the donor, likewise the citrate solution is taken in from the container *I*. The percentage of the mixture is regulated by the size of the needles at *H* and *E*, and the strength of the citrate solution.

The advantages of the apparatus are:

1. The amount of blood transfused can be measured.
2. The blood is not exposed to the air.
3. The method is direct.
4. Only veins are used, and repeated transfusions from the same donor may be made.
5. Any amount can be transfused, and done very quickly.

In this prison, many injections of arsphenamin are given each week. When the patients are ready, sufficient solution is prepared for ten consecutive injections.

With this apparatus, using a 50 c.c. Luer syringe, one dose is drawn from the mixing vessel through the donor's tube, and injected into the patient, through the recipient's tube. This is more satisfactory than the gravity method, and saves considerable time.

UNIQUE FOREIGN BODY IN NOSE*

IRVING WILSON VOORHEES, M.S., M.D., NEW YORK

N. A. W., a colored man, aged 34, a native of the British West Indies, came to the West Side Dispensary, Jan. 17, 1920, with a history of yellow discharge from the right nostril during the previous two months. Examination revealed a large black mass in the right nasal fossa, very firm and hard, but freely movable in its bed. The septum was pushed over to the left, and the mass was bathed in yellow pus. It seemed reasonable to suppose that we had to do with a mass of necrotic bone, probably a sequestrum from the nasosphenoidal wall following a tertiary lesion. Pledgets of cotton saturated with 10 per cent. cocain were introduced into the nose and left for ten minutes, at the end of which time our diagnostic acumen received a rude shock.

When 17 years of age, the patient tried to invent a gun. He took a piece of bicycle pipe about 1 foot long, into the open end of which he screwed a threaded bolt borrowed for the occasion from some part of a bedstead. He then bored a touch-hole in front of this breech plug. Into the muzzle he loaded a charge of gunpowder, rammed it down, followed this with a few BB shots, which were also rammed down, and then invited his cousin to apply a flame to the touch-hole while he held the apparatus in the position of aiming. The charge exploded and so did the piece of pipe. The breech plug blew backward and had never been seen or found, but small pieces of iron penetrated the left side of the nose in the region of the ethmoid. The scar from these fragments is still quite visible but insignificant. The boy was in bed for seventeen days, and was visited twice daily by a physician, who did not, however, locate the piece of iron. For seven months thereafter the boy experienced pain in his head and between the eyes about 10 o'clock each morning. Considerable discharge came from his nose. This was worse, he thinks, in summer. He came to the clinic chiefly because his friends chided him about a stench from his head, and because of "frequent colds."

*Patient and specimen presented before the Nose and Throat Section, New York Academy of Medicine, Jan. 21, 1920.

After removal of the cocain pledgets, the black mass above mentioned was grasped with strong nasal grasping forceps, and much to our surprise a solid heavy object was gradually withdrawn from the nose, occasioning only slight discomfort in its passage. When washed off under the water tap, the improvised "breech plug" was identified as the missing iron bolt which seventeen years previously had been suddenly projected into the patient's nose.

The dimensions and weight of the bolt were: length 5.5 cm. (2 1/8 inches); diameter, 1.5 cm. (1/2 inch); weight, a little over 1 ounce.

There is probably some latent sinus trouble, which we intend to look into as soon as roentgenograms can be made.

It seems hardly possible that any human being could carry such a foreign body in any part of his anatomy for seventeen years and not be conscious of its presence.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1919

EIGHTH ANNUAL REPORT

THE JOURNAL presents its eighth annual survey¹ of typhoid fever mortality in cities in the United States having more than 100,000 population. The cities included in the summary number sixty, and are the same as those reported on last year.²

It should be especially noted that the calculated typhoid rates for 1919 presented in this report are based on relatively unsatisfactory population estimates. It is now nine years since the 1910 census, and probably in a number of instances the population estimates are quite wide of the mark. The U. S. Census Bureau makes no estimate at all for the population of Denver, Memphis, Portland, Ore., Seattle and Spokane. Special methods of estimation have been used by the Census Bureau for the population of Cleveland and Washington.

The margin of error is probably not great in a few cities, such as Albany, N. Y., but in many others it will doubtless be shown by the 1920 census enumeration that calculated death rates for 1919 will have to be considerably revised. For these reasons, typhoid death rates can be subjected only to a broadly critical comparison this year.

The nine largest cities in the country (Group 1) show a very notable improvement in typhoid death rates as compared with 1918. For the first time, all the cities in this group have a rate below 10. In only one instance (Philadelphia) are the 1919 figures higher than those for the preceding year. Baltimore has the lowest typhoid rate in its history, and rises into the first rank (cities having a death rate of less than 10). The improvement in Baltimore is all the more noteworthy in that the recently annexed territory has had a much higher typhoid morbidity than the older portion of the city. It is stated that for the first

1. The preceding articles were published, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777, and April 5, 1919, p. 997.

2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated on the basis of population estimates made according to the method of the U. S. Census Bureau. It may perhaps be noted that the figures kindly furnished us by the municipal officials include the deaths of nonresidents as well as residents occurring within the city limits. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13).

six months of 1919 the morbidity rate in the annexed district was about five times as great as in the old city. It speaks well for efficient health administration in that city that, in the face of this disadvantage, the total typhoid mortality should show a decrease.

A particularly satisfactory improvement appears in Detroit, causing this city to rank well among other Northern cities for the first time in a number of years. The decline in Detroit's typhoid, which began about 1917, has now brought the death rate to the lowest point in the history of the city. Typhoid cases in Detroit are at present being studied very carefully. A relatively large proportion (about 45 per cent.) is attributed to outside infection. The proportion of contact cases seems to be low as compared with the figures for New York City, only twenty-four out of a total of 281 being attributed to this cause. Swimming and bathing in the polluted river water about the city is considered to be an important factor in the typhoid situation. Not a single case has been traced to milk during the three years 1917, 1918 and 1919.

Chicago, New York, Boston and Cleveland report typhoid rates that are astonishingly low. The improvement due to filtration of the Cleveland water supply is doubtless largely responsible for the lowering of the

TABLE 1.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Chicago.....	1.2	1.4	2.7	8.2	15.8
New York.....	2.0	3.7	3.4	8.0	13.5
Boston.....	2.2	2.5	2.8	8.0	16.0
Cleveland.....	2.4	4.7	4.9	10.0	15.7
Philadelphia.....	4.4	3.0	5.3	11.2	41.7
Detroit.....	5.3	10.0	12.0	18.1	21.1
St. Louis.....	5.8	7.2	7.5	12.1	14.7
Pittsburgh.....	6.2	9.8	8.9	15.9	65.0
Baltimore.....	8.9	12.2	13.6	23.7	35.1

rate in that city. Chicago heads the list of cities in this group for the third consecutive year.

As in previous years, the New York City Health Department has printed quarterly the results of its detailed study of each typhoid case. Increasing success seems to mark the work of the department in tracing sources of infection. For the last quarter of 1919 it is reported that the probable mode of infection was determined in 35.7 per cent. of the cases, as against 30 per cent. in the corresponding quarter of 1918. A relatively large proportion of the cases was traced to out of town infection. The majority of the cases traced to their source within the city were due to contact with active cases or chronic carriers. Water-borne and milk-borne typhoid infection seems to have almost disappeared from New York City.

It is doubtful whether there is today any other country in the world in which the nine largest cities could show so low an average typhoid rate as that reached in Group 1 in 1919.

The cities in Group 2 (from 300,000 to 500,000 population) show improvement almost without exception over the 1918 rates. Newark, N. J., and Cincinnati reach very low records, and Seattle maintains its admirably low rate of last year (2.3). The protection of the watershed of the Seattle water supply is receiving special attention from the local health authorities, since it is estimated that the watershed now has a population of from 500 to 600. All of these persons are required to submit themselves to typhoid immunization, and

other methods of controlling conditions on the watershed are being energetically carried out.

Milwaukee continues to maintain its astonishingly low rate of the past few years. The purification of the water supply is still an issue in that city. Chlorination is now being practiced and, as the typhoid death

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Newark, N. J.	2.1	3.5	3.6	6.8	14.6
Seattle.....	2.3	2.3	3.1	5.7	25.2
Cincinnati.....	2.6	4.1	3.5	7.8	30.1
Minneapolis.....	3.1	7.6	5.6	10.6	32.1
San Francisco.....	3.3	4.6	4.0	13.6	27.3
Milwaukee.....	3.5	6.2	7.6	13.6	27.0
Washington.....	3.7	11.9	10.3	17.2	36.7
Los Angeles.....	4.7	2.8	3.9	10.7	19.0
Buffalo.....	7.0	7.8	8.9	15.4	22.8
New Orleans.....	13.7	20.1	20.0	20.9	35.6

rate shows, with eminent success; but it is generally considered that filtration will have to be resorted to eventually. Experiments to determine the applicability of various rapid filtration methods have been conducted during the past year.

New Orleans shows a substantial reduction in its typhoid rate for the first time in about ten years, and Washington records the remarkably low rate of 3.7, which brings it at once into cities of the first rank. The table (Table 2) shows the truly amazing improvement that has occurred in Washington in the past ten years. The typhoid death rate in this city in 1919 was almost exactly one-tenth the average rate for 1906-1910.

Group 3 (from 200,000 to 300,000 population) makes a much better record than in 1918, nearly every city showing a decrease in the typhoid rate. Denver and Columbus appear to have been exceptionally favored. Seven cities report rates under 5, as against four cities in 1918.

Rochester, N. Y., for some reason appears to have about doubled its rate of 1918, although the 1919 rate of 3.8 is by no means alarmingly high. Rumors were current in that city at one time during the summer that a break in the water main had led to the entrance of river water into the system; but this report seems to

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Jersey City.....	2.2	4.1	4.0	7.2	12.6
Columbus, Ohio.....	3.0	8.9	8.2	15.8	40.0
St. Paul.....	3.0	3.5	3.4	9.2	18.3
Denver.....	3.2	8.7	6.0	12.0	37.5
Providence, R. I.	3.4	1.5	4.6	10.2	14.3
Portland, Ore.	3.6	5.6	4.8	10.8	23.2
Rochester, N. Y.	3.8	1.9	3.4	9.6	12.8
Indianapolis.....	4.7	6.6	11.9	20.5	30.4
Louisville, Ky.	9.0	12.4	10.8	19.7	52.7
Kansas City, Mo.	11.2	13.7	11.3	16.2	35.6

have been unconfirmed by the city health authorities. Louisville, Ky., makes a particularly good showing. It is stated, however, that a few cases of preventable typhoid have occurred in that city due to drinking contaminated spring water in a public park. Milk-borne typhoid was also a factor during the summer, but both city and state health departments acted with commendable promptitude, and the neglect of physicians to

report cases of typhoid in the family of a dairyman was summarily dealt with. The degree of improvement reached in Louisville with its large negro population may be appreciated by comparing the average of 1916-1919 (10.8) with the average for 1906-1910 (52.7). Indianapolis and Columbus, two Northern

intion of the city supply. This unfortunate occurrence has made the Memphis rate the highest among the sixty cities here considered. It is, in fact, the highest typhoid rate recorded in any one of these cities since 1911, when it was Memphis again that had the unenviable distinction of having the highest rate from typhoid fever of any large city in the United States. An encouraging feature of the situation in that city, however, is that, except for the water epidemic in the spring, typhoid seemed well under control, only four deaths being reported for the last four months of 1919.

Richmond, Va., makes a new low record of 3.7, a rate which is probably the lowest ever reached by any Southern city of more than 100,000 population. Not a single death occurred in that city during the first six months of last year. The rate is so low, in fact, that difficulty may well be experienced in living up to it during the next few years. We have had occasion to

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 125,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Spokane, Wash.	0.0	9.1	4.5	17.1	50.3
Scranton, Pa.	1.3	5.2	4.4	9.3	31.5
Worcester, Mass.	2.8	4.6	3.9	5.0	11.8
Fall River, Mass.	3.0	7.0	9.4	13.4	13.5
Toledo, Ohio.....	3.1	9.9	11.4	31.4	37.5
Oakland, Calif.	3.2	4.7	3.4	8.7	21.5
Richmond, Va.	3.7	7.5	10.5	15.7	34.0
Paterson, N. J.	4.2	2.1	4.7	9.1	19.3
Omaha.....	4.4	5.0	5.2	14.9	40.7
New Haven, Conn.	5.7	5.2	7.0	18.2	30.8
Syracuse, N. Y.	6.7	9.3	8.6	12.3	15.6
Atlanta, Ga.	9.6	14.4	14.6	31.4	58.4
Birmingham, Ala.	14.6	31.9	35.8	....	....
Memphis, Tenn.	58.4	15.9	32.6	42.5	35.3

TABLE 6.—DEATH RATES FROM TYPHOID IN 1919

Honor Roll (from 0.0 to 2.0)			
Spokane, Wash.	0.0	Taeoma, Wash.	1.6
Hartford, Conn.	0.9	New Bedford, Mass.	1.6
Chicago.....	1.2	Cambridge, Mass.	1.7
Scranton, Pa.	1.3	New York.....	2.0
First Rank (from 2.0 to 5.0)			
Newark, N. J.	2.1	San Francisco.....	3.3
Boston.....	2.2	Providence, R. I.	3.4
Jersey City.....	2.2	Lowell, Mass.	3.4
Seattle.....	2.3	Milwaukee.....	3.5
Cleveland.....	2.4	Portland, Ore.	3.6
Cincinnati.....	2.6	Richmond, Va.	3.7
Springfield, Mass.	2.6	Washington.....	3.7
Camden, N. J.	2.7	Bridgeport, Conn.	3.8
Worcester, Mass.	2.8	Rochester, N. Y.	3.8
Fall River, Mass.	3.0	Paterson, N. J.	4.2
St. Paul.....	3.0	Omaha.....	4.4
Columbus, Ohio.....	3.0	Philadelphia.....	4.4
Minneapolis.....	3.1	Dayton, Ohio.....	4.5
Toledo, Ohio.....	3.1	Los Angeles.....	4.7
Oakland, Calif.	3.2	Indianapolis.....	1.7
Denver.....	3.2		
Second Rank (from 5.0 to 10.0)			
Grand Rapids, Mich.	5.1	Trenton, N. J.	6.8
Detroit.....	5.3	Buffalo.....	7.0
Salt Lake City.....	5.4	Albany, N. Y.	7.6
New Haven, Conn.	5.7	Baltimore.....	8.9
St. Louis.....	5.8	Louisville, Ky.	9.0
Reading, Pa.	6.1	Atlanta, Ga.	9.6
Pittsburgh.....	6.2	San Antonio, Tex.	9.6
Syracuse, N. Y.	6.7		
Third Rank (from 10.0 to 20.0)			
Kansas City, Mo.	11.2	Birmingham, Ala.	14.6
Dallas, Tex.	12.2	Nashville, Tenn.	15.8
New Orleans.....	13.7		
Fourth Rank (over 20.0)			
Memphis.....	58.4		

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1919	1918	Average 1916-1919	Average 1911-1915	Average 1906-1910
Hartford, Conn.	0.9	7.0	6.8	15.9	19.0
Tacoma, Wash.	1.6	5.7	3.3	10.4	....
New Bedford, Mass.	1.6	8.0	4.8	15.0	16.1
Cambridge, Mass.	1.7	2.7	2.4	4.0	9.8
Springfield, Mass.	2.6	3.6	4.3	17.6	....
Camden, N. J.	2.7	3.6	5.3	4.5	....
Lowell, Mass.....	3.4	1.8	5.8	10.2	13.9
Bridgeport, Conn.	3.8	3.9	5.7	5.0	10.3
Dayton, Ohio.....	4.5	6.9	9.9	14.8	22.5
Grand Rapids, Mich.	5.1	10.3	10.8	25.5	29.7
Salt Lake City.....	5.4	7.1	10.2	13.2	....
Reading, Pa.	6.1	12.3	11.1	31.9	42.0
Trenton, N. J.	6.8	9.4	8.7	22.3	....
Albany, N. Y.	7.6	10.7	9.1	18.6	17.4
San Antonio, Tex.	9.6	54.3	26.6	29.5	....
Dallas, Tex.	12.2	12.6	17.9	....	....
Nashville, Tenn.	15.8	32.7	23.5	40.2	61.2

bear off the honor of being the first American city with more than 100,000 population to have no single death from typhoid fever within its borders during a calendar year.

At the other end of the scale, Memphis has temporarily descended into the depths. In March and April, 1919, Memphis suffered from an old fashioned water-borne epidemic of typhoid due to the serious contam-

comment previously on the admirable health administration in Richmond during the last decade, which has been one of the factors that has made such achievements possible. Two other Southern cities, Atlanta and Birmingham, have also established low typhoid rates which must be regarded as highly creditable in view of the climatic and racial conditions with which these cities have to contend. The Birmingham milk supply has very properly been the subject of special agitation. There is reason to believe that milk-borne infection and fly-borne infection are still relatively important typhoid factors in many Southern cities. It can be fairly predicted that with a good pasteurization ordinance the typhoid in Birmingham will be materially reduced as it has been in other cities where suitable measures for safeguarding milk supplies have been put in force.

Toledo, which in 1916 had a rate of about 23, now records the very low rate of 3.1. Fall River, Scranton, Oakland and Worcester are other cities in which the 1919 typhoid rate was very low.

Group 5 (from 100,000 to 125,000 population) comprises seventeen cities. In all but one of these the typhoid rate was lower in 1919 than in 1918, the exception showing only a trifling change. It is plain that in most of the cities in this group the number of deaths is now so small that a slight fluctuation in rate from year to year has little significance. Many cities now report only one, two, three or four deaths in a year, and not all of these are deaths of residents.

It is probable, as stated earlier in the summary, that population estimates for some cities are quite wide of the mark. This is, perhaps, particularly true of certain cities in this group. Such cities as Bridgeport and Dayton, for example, may find their typhoid rates somewhat reduced when the 1920 census figures become available for use in calculation; but in cities of this size having less than half a dozen typhoid deaths, slight rate changes are of comparatively little significance.

It is evident that the maintenance of a low typhoid rate is not to be taken as a matter of course without the exertion of constant vigilance by the local health authorities. The remarkably successful results reached in this group of cities are due to the unremitting efforts of health officers in safeguarding the public water and milk supplies, in applying proper methods of excreta disposal, and in tracking down typhoid carriers. It must be remembered, too, that many of these communities are surrounded by villages and country districts less scrupulous with regard to typhoid occurrence or less able to cope with it than themselves, so that probably a considerable proportion of city typhoid is due to infection contracted outside the municipal limits.

It is worth noting that the three Southern cities that had the highest typhoid rate in Group 5 in 1918 all show a reduction this year.

The continued lowering of typhoid death rates in American cities is one of the outstanding features of modern sanitary progress. The rate for the whole

TABLE 7.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918 AND 1919

Group	Year	No. of Cities	Total Population	No. of Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
2	1916	16	4,653,281	344	8.5
2	1917	10	4,150,090	329	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,829,092	134	4.7
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
4	1919	14	3,564,860	210	8.2
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,103,710	115	5.5
Total....	1916	60	25,667,919	2,011	8.1
Total....	1917	60	25,220,076	1,812	7.2
Total....	1918	60	25,458,656	1,660	6.5
Total....	1919	60	27,028,359	1,126	4.2

group of sixty cities containing approximately one fourth of the population of the country is now less than 5. In 1912, only one of these cities had a rate lower than 5. So late as 1916 there were only three cities with a rate of 2 or less. There are now eight. In 1912 there were only fifteen out of the fifty-one cities then on our list that had a rate less than 10. All but four of these cities had a lower rate than 10 in

1919. Other comparisons might be made, but the tables themselves are sufficiently striking.

The unusually large percentage of typhoid reduction shown in 1919 as compared with preceding years may very well be attributed in part to the immunization in the army camps of a large proportion of the particu-

TABLE 8.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1919)

	Total Population (57 Cities)* Estimated by U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910.....	20,996,035	4,114	19.59
1911.....	21,545,014	3,391	15.74
1912.....	22,093,993	2,775	12.56
1913.....	22,642,972	2,892	12.77
1914.....	23,191,951	2,408	10.38
1915.....	23,740,930	2,068	8.71
1916.....	24,205,359	1,842	7.61
1917.....	24,740,068	1,647	6.65
1918.....	24,971,278	1,557	6.23
1919.....	25,526,186	987	3.87

* Three cities are omitted from this summary because data for the full period are not available.

larly susceptible age group. It is plain, too, that the continued safeguarding of water and milk supplies has nearly everywhere reduced typhoid to so low a point that health authorities are enabled to devote more attention to the prevention of contact and carrier cases. Wherever it is possible to investigate promptly and thoroughly the circumstances surrounding the development of each individual case, further spread of the disease is likely to be materially diminished. The outlook is highly encouraging for the practical elimination of typhoid fever.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

BENZOCAINE (See New and Nonofficial Remedies, 1920, p. 33).

Anesthesin-Calco.—A brand of benzocaine complying with the N. N. R. standards.

Manufactured by the Calco Chemical Company, Bound Brook, N. J. No U. S. patent or trademark.

GONOCOCCUS VACCINE (See New and Nonofficial Remedies, 1920, p. 283).

The Gilliland Laboratories, Ambler, Pa.

Gonococcus Vaccine (Polyvalent).—A number of strains of *M. Gonorrhea Neisser* are used in the preparation of this vaccine; the killed bacteria are suspended in physiological solution of sodium chloride and preserved with 0.25 per cent. three cresols. Marketed in packages of four syringes containing respectively 250, 500, 1,000 and 2,000 million killed gonococci; also in packages of four 1 Cc. ampules containing respectively 250, 500, 1,000 and 2,000 million killed gonococci.

OVARY (See New and Nonofficial Remedies, 1920, p. 201).

Ovarian Residue-Hollister-Wilson.—The residue from the fresh ovaries of the hog after the ablation of the corpus luteum.

Actions and Uses.—Ovarian Residue is used for the same conditions as the entire ovarian substance but is claimed to have the advantage of being somewhat more stable in composition (see general article on Ovary, New and Nonofficial Remedies, 1920).

Dosage.—From 0.06 to 0.2 Gm. (1 to 3 grains).

Manufactured by the Hollister-Wilson Laboratories, Chicago. No U. S. patent or trademark.

Ovarian Residue-Hollister-Wilson is a grayish powder, having a peculiar odor. It is prepared from the entire fresh hog ovary by removal by hand of the corpus luteum. The residue is dried and powdered.

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SATURDAY, MARCH 6, 1920

AN INDEX OF THE BODY'S MUSCULATURE

The physiologic significance of creatinin, which regularly appears in the urine, is still shrouded in mystery. Its close chemical similarity to creatin, long ago discovered to be a characteristic component of the muscular tissues of the higher animals, has inevitably led to conjectures regarding a relationship between the two chemical compounds; but no tenable theory can be formulated at the present day. The demonstration that urinary creatinin may have a purely endogenous origin and be excreted in comparatively constant daily amounts by persons who do not ingest either creatin or creatinin gave an impetus to the search for its precursor.

The average amount of creatinin excreted daily during a creatin and creatinin free regimen, expressed as milligrams per kilogram of body weight, has been termed the creatinin coefficient.¹ This has been estimated at about 25 mg. for lean persons and 20 mg. for the corpulent, the difference indicating that muscular mass rather than body weight per se is a determining factor in the creatinin coefficient of the body.

Creatinin does not seem to be increased appreciably in the urine as the direct result of exercise; hence it is doubtful whether muscular contraction leads immediately to a transformation of muscle creatin or whether there is some other muscular genesis of the urinary end-product. Nevertheless, it has long been maintained that the creatinin coefficient may be an index of the functional capacity of the muscles, because of its apparent proportionality to the mass of active contractile tissues. In muscular atrophies, the creatinin excretion appears to be below normal.

There are times when body weight gives a distorted view of the functional efficiency of the organism. In such circumstances it would be helpful to have an index as to the degree of involvement of the master tissues of the body. By a suitable indication, the degree of deterioration or restoration might be more accurately evaluated through chemical analysis of metabolism than through physical measurements or clinical inspection. Bürger has reverted to the prob-

lem of the creatinin coefficient by new observations in Schittenhelm's clinic at Kiel.² Numerous determinations on patients there have confirmed the belief that a high coefficient corresponds as a rule with the presence of a vigorous musculature, lower figures being obtained when the muscular development is poor and activity weakened. The original figures recorded by the pioneer American investigators of this subject have been confirmed.

There is a practical value attached to the demonstration that the creatinin coefficient is an index of the extent of participation of musculature in the entire body mass under normal physiologic conditions. When "reduction treatments" are instituted on obese patients, it is not always easy to decide whether the consequent loss of weight is due to combustion of fat or to an undesired disintegration of other than adipose tissues. The determination of the creatinin coefficient may give a much desired clue. With properly conducted therapy to overcome obesity, the coefficient should increase. A calculation shows that on the basis of the conceptions here discussed, 1 gm. of urinary creatinin per day is correlated with about 23 kg. (50 pounds) of muscle tissue. From such statistics it is possible to estimate the approximate muscle content of the body. For the average normal person it should correspond to about 40 per cent. of the body weight. Deductions and applications of the tentative principles here presented are obvious.

DELEGATES TO THE UNITED STATES PHARMACOPEIAL CONVENTION

Attention was called in the General News department of THE JOURNAL last week to the meeting of the U. S. Pharmacopeial Convention to be held in Washington in May. The objects of this convention are set forth in its articles of incorporation:

The particular objects and business of this association are the encouragement and promotion of the science and art of medicine and pharmacy by selecting by research and experiment and other proper methods and by *naming such materials as may be properly used as medicines and drugs* with formulas for their preparation [italics ours.—Ed.]; by establishing one uniform standard and guide for the use of those engaged in the practice of medicine and pharmacy in the United States whereby the identity, strength and purity of all such medicines and drugs may be accurately determined, and for other like and similar purposes.

Of primary importance among the functions of the convention, then, are the naming of drugs which may properly be used as medicines; devising of formulas in accordance with which they are to be compounded, and establishing of standards by which their identity and purity may be proved. As this is a large task, requiring special knowledge, the convention properly delegates this work to a body of fifty experts called the "Committee of Revision of the U. S. Pharmacopeia."

2. Bürger, M.: Beiträge zum Kreatininstoffwechsel, I. Die Bedeutung des Kreatininkoeffizienten für die quantitative Bewertung der Muskulatur als Körpergewichtskomponente, *Ztschr. f. d. ges. exper. Med.* 9: 262 (Oct.) 1919.

1. Shaffer, P. A.: *Am. J. Physiol.* 28: 1, 1908.

Who are best qualified, first of all, to name the drugs which may properly be used as medicines? Obviously, physicians who use drugs in the treatment of disease, and pharmacologists who study the actions of drugs on the living organism. Pharmacists who devise the formulas for compounding drugs or for making preparations for administering such drugs, chemists who establish the standards by which their identity and purity may be determined, and manufacturers whose opinion must be influenced by commercial considerations, should by no means have the deciding vote in this matter.

At the time of the previous revision, a "Committee on Scope" was appointed, to which were referred all questions of additions to and deletions from the Pharmacopeia. The decisions of this committee were to be based on the "therapeutic usefulness" or the "pharmaceutic necessity" of the drugs considered. A majority of the committee consisted of physicians. After a vast amount of work, the Committee on Scope submitted its report, recommending the deletion of a large number of substances which were not considered to be "therapeutically useful" or "pharmaceutically necessary." However, the executive committee (only two members of which may be said to represent those practicing medicine) disregarded the recommendations of the Committee on Scope in many respects, and included or rejected whatever substances it pleased, even including some drugs which had not even been considered by the Committee on Scope. Naturally, the Pharmacopeia thus compiled is an expression of pharmacy and the drug trade rather than of medicine.

To avoid a repetition of these conditions in the next Pharmacopeia, it is essential that each medical organization entitled to representation at the coming meeting of the convention should elect three delegates and three alternates, so that full representation of medical science shall be guaranteed. Delegates should be selected who know what are the interests of scientific medicine in the Pharmacopeia—delegates who realize that physicians, more than any others, are vitally interested in the content of the Pharmacopeia—delegates whose practice and teaching reflect the modern trend to eliminate the unimportant and useless drugs from the Pharmacopeia. The delegates should feel their responsibility and attend and take part in all of the meetings of the convention in order to secure the necessary reforms. It would be desirable that the convention pass a resolution which would make the composition of the Committee on Scope subject to the will of the whole convention. Obviously it is desirable that pharmacologists and physicians should comprise at least the majority of the members of the Committee on Scope, and that the decisions of this committee should be final and not subject to revision by any other committee, general or special. Particularly, its action should not be revised by any committee on which manufacturing pharmacists predominate.

ORAL SEPSIS AND THE ELECTIVE LOCALIZATION OF BACTERIA

Six years have elapsed since Billings¹ published the extensive clinical observations made by himself and his co-workers to demonstrate the importance of septic foci, even when small, as sources of chronic infection conveyed by the blood stream. It was shown that these foci may harbor the same type of bacteria as are found in distant lesions, and that specific types tend to localize in definite organs or tissues. Rosenow,² in particular, has been most energetic in the attempt to demonstrate conclusively the elective localizing power of freshly isolated streptococci found in the focus or systemic lesions of a number of diseases, including appendicitis, ulcer of the stomach, chronic endocarditis, and rheumatic fever.

Inevitably the possible relationship between ill health and oral sepsis has come into prominence in connection with the recent studies on what has lately been termed focal infection. To many it has seemed of late as if tonsillectomy and extraction of the teeth were vying with each other in popularity as procedures for removing objectionable bacterial foci. Rosenow³ has recently applied his methods to a study of the possible significance of dental sepsis. He reports that specific lesions have been produced with bacteria from the various types of dental focal infections, such as gingivitis, pyorrhea, infected pulps, apical abscesses, discharging sinuses, and granulomas. He believes that his newer findings warrant the conclusion that chronic foci of infection about the teeth are potentially or actually detrimental to the health of the persons who harbor them. According to him, the lesions which are more or less enclosed, and which drain only into the circulation, are probably the most dangerous, and that sooner or later, alone or in connection with predisposing factors, they will break down the resistance of the patient and produce disease. Pulpless teeth and blind abscesses are regarded as the most dangerous form of dental sepsis.

In view of the growing favor in which the extraction of teeth is being held, several precautions need to be emphasized. Teeth should never be sacrificed unless the indications for removal are clear. Rosenow avers that tonsillectomy as now so commonly practiced before the condition of the teeth has been corrected is illogical. The lymphatics of the mouth and jaws drain into the tonsils. Some infections of tonsils improve or even disappear following the extraction of infected teeth. The elimination of a visible focus does not

1. Billings, Frank: Focal Infection: Its Broader Application in the Etiology of General Disease, J. A. M. A. **63**: 899 (Sept. 12) 1914.

2. Rosenow, E. C.: Experimental Infectious Endocarditis, J. Infect. Dis. **11**: 210, 1912; The Etiology of Acute Rheumatism, Articular and Muscular, *ibid.* **14**: 61, 1914; The Etiology and Experimental Production of Erythema Nodosum, *ibid.* **16**: 367, 1915; Elective Localization of Streptococci, J. A. M. A. **65**: 1687 (Nov. 13) 1915. Rosenow, E. C.; Towne, E. B., and von Hess, C. L.: The Elective Localization of Streptococci from Epidemic Poliomyelitis, J. Infect. Dis. **22**: 313 (April) 1918.

3. Rosenow, E. C.: Studies on Elective Localization: Focal Infection with Special Reference to Oral Sepsis, J. Dental Res. **1**: 205 (Sept.) 1919.

necessarily mean the exclusion of all foci of infection. Vigilance must never be relaxed so long as the results are not all that is expected. When it is at length appreciated that the prevention and cure of dental foci is only one of many factors in the management of infection of obscure origin, the dangers of a one-sided therapeutic point of view will be averted, and a more sane hygiene is likely to ensue. However, the failure of the enthusiasm for oral hygiene to produce a cure-all need not blind us to the helpful contributions which a better knowledge and recognition of oral sepsis have brought to modern practice.⁴

TYPHOID A VANISHING DISEASE

THE JOURNAL's annual summary of typhoid fever in the large cities of the United States,⁵ which appears in this issue, is encouraging beyond expectation. Fifteen years ago, typhoid rates of more than 20 in these cities were very common, and rates of less than 10 correspondingly rare. The most sanguine sanitarian would hardly have anticipated the far reaching improvement that has actually occurred. At that time public health workers believed that any rate under 10 was highly satisfactory, and that a better average than this could hardly be expected for a generation. The author of an excellent work on typhoid, published in 1918, felt himself justified in stating at that time that "we have hitherto been extremely backward in applying recognized methods of sanitary prevention which have long prevailed in other lands." This criticism of American sanitary procedure would perhaps have been justified ten or fifteen years earlier, but long before 1918 the work of typhoid reduction was in full swing. Marked improvement began to occur about 1910, and from that time to this nearly every year has witnessed a fall in the typhoid death rate. The 1919 typhoid rate for a population of about 27,000,000 has reached the exceedingly low point of 4.2.

It should not escape notice that the 1919 rate shows a proportionately large diminution. The most plausible explanation would seem to be that given in our special article, namely, that the antityphoid inoculation of the young men in the military camps has proved a continuing safeguard for this age group, which would ordinarily have furnished a considerable number of typhoid victims. It seems to be evident that water supply and milk supply are hardly important factors at present in typhoid causation in our large American cities.

The great reduction in typhoid cases has everywhere the further advantage that it has now become possible for health authorities to investigate promptly and thoroughly each case of the disease as soon as it

appears. It is thus becoming easier all the time to check incipient epidemics, to discover typhoid carriers, and to exercise better control over the surroundings of each typhoid case. The decrease in the number of typhoid carriers that will come inevitably with the lessening of the prevalence of the disease is sure in the long run to lighten the burden of health officers and to facilitate the task of eliminating typhoid fever. For it must now be recognized that the goal which we may set for ourselves is the practical extinction of typhoid fever in this country. When one city of more than 100,000 inhabitants is able to report not a single death from typhoid, and another city has only one death from this disease, while the city of Chicago, with a population of more than two and a half million, reports only thirty-one typhoid deaths, we are perhaps justified in hoping that the day will come when typhoid, already a medical curiosity in some localities, will become, like smallpox, practically a negligible factor in our mortality returns.

Current Comment

ACUTE RESPIRATORY INFECTION IN MONKEYS FROM INOCULATION OF INFLUENZA BACILLUS

As reported recently in THE JOURNAL, Blake and Cecil¹ obtained interesting results by the inoculation of monkeys with a strain of the influenza bacillus isolated from influenzal pneumonia in a man and subsequently raised in virulence by repeated passages through animals. When inoculated in the nose or nose and mouth there developed an acute, self-limited disease with prostration, fever, cough and sneezing, rhinitis and tracheo-bronchitis, and either leukopenia or no special change in the leukocytes. Purulent sinusitis and hemorrhagic pneumonia developed in some of the animals. On intratracheal injections of the same strain of influenza bacillus, there resulted a similar pneumonia and similar general symptoms. Blake and Cecil regard the disease thus produced as "identical with influenza in man in its course, symptomatology, complications and pathology," and they conclude that "it seems reasonable to infer that *B. influenzae* is the specific cause of influenza." While there is no doubt that the influenza bacillus can cause an infection in the respiratory tract in monkeys that somewhat resembles influenza, it does not seem to have been established that this organism is the cause of influenza. Blake and Cecil recently presented their findings before the New York Academy of Medicine; elsewhere² in this issue is a report of the meeting. In the discussion, exception was taken particularly to the claim that it had been demonstrated that the Pfeiffer bacillus was the cause of epidemic influenza. Dr. William H. Park pointed out that the Pfeiffer bacillus has been found in virtually every case of whooping cough, in 90 per cent. of measles cases, and also in a large

4. In this connection the reader is referred to the monograph by Duke, W. W.: Oral Sepsis in Its Relation to Systemic Disease, St. Louis, C. V. Mosby Company, 124 pp.

5. Typhoid in the Large Cities of the United States in 1919, special article, this issue, p. 672.

1. Blake, F. G., and Cecil, R. L.: The Production of an Acute Respiratory Disease in Monkeys by Inoculation with Bacillus Influenzae, THE JOURNAL A. M. A., Jan. 17, 1920, p. 170.

2. Society Proceedings, this issue, p. 696.

percentage of cases of respiratory infections which had been examined. It was his belief that the experience of Cecil and Blake had been important in designating that lesions can be formed in monkeys by the Pfeiffer bacillus similar to those found in the pneumonias occurring in influenza. According to Dr. Zinsser, the work had made it seem somewhat more likely that the influenza bacillus is the etiologic factor; and yet he did not believe that final judgment can be given on this point. The evidence cited by Blake and Cecil does not seem wholly convincing for various other reasons: (1) Possibly the inoculation of monkeys with other bacteria associated with influenza than the influenza bacillus would produce practically the same symptoms and lesions as those described, and on this account extensive control experiments are needed before any conclusions of a definite value can be drawn from the results of these experiments with the influenza bacillus; (2) many bacteriologists would take exception to the statement that the influenza bacillus is associated constantly with early uncomplicated cases of influenza, and (3) pathologists would hesitate to accept the statement that the pulmonary lesions in the inoculated monkeys are identical with those of human influenza. At least the question will remain open until the results of much more detailed studies are available, studies not only of material from inoculations with influenza bacilli but also of material from inoculations with other bacteria associated with influenza. In other words, we must not lose sight of the facts that other bacteria found in influenza may give similar experimental results; that the constant presence of the influenza bacillus in influenza has not been demonstrated conclusively, and that it has not been shown that lesions unquestionably peculiar to influenza have been reproduced in monkeys inoculated with influenza bacilli. It may, however, be stated that virulent influenza bacilli may cause an acute infection of the respiratory tract when inoculated in monkeys.

SNAPPING HIP

It is not always grave and dangerous diseases that bring the patient to the physician; frequently symptoms that are trivial, so far as their effect on health is concerned, are responsible for the call, on account of the annoyance they produce. Such a minor ailment is the peculiar condition "snapping hip." The patient complains that flexion and extension of the hip, such as occurs during walking, produces a peculiar snapping sensation on the outer side of the joint which, at times, may be audible to by-standers even at distances of 20 or 30 feet. Mayer¹ has recently described four cases. In his cases the phenomenon was due to a line of thickened fascia lata catching behind the great trochanter. Flexion of the thigh stretches the fascia, which finally, like a taut bow string, is suddenly released and snaps back in front of the trochanter. Propping² calls attention to the fact that Perrin was the first to describe this phenomenon, before a meeting of the Société de Chirurgie de Paris in 1859, and at that time demon-

strated its mechanism. In 1912 Ebner³ collected the reports of twenty-eight cases, to which Propping has added two more. In one of Propping's cases he demonstrated that the cause was a habitual dislocation of the head of the femur. He believes that in many cases the snapping is wholly under the control of the patient, and that it has a hysterical basis. The patient can produce the snapping sensation and sound voluntarily, whenever he desires. Manon⁴ has also described a case recently. He found that simple transverse section put an end to the disturbance. It has been known for some time that there is normally a line of thickening in the fascia lata which runs from the iliac crest downward just in the line of the posterior margin of the great trochanter—the tractus cristofemoralis. If this tract becomes abnormally thickened or if the trochanter becomes abnormally prominent, the "snapping hip" may be produced, although a third factor is also necessary, namely, relaxation of the gluteus maximus. Mayer shows that the phenomenon may sometimes be controlled by appropriate strapping, but that in other instances it is necessary to excise portions of the tractus cristofemoralis so as to avoid a reformation of this band.

BOILED VEGETABLES FOR DIABETICS

Von Noorden called attention to the fact that the boiling of vegetables removed some of the carbohydrates, and Allen applied this fact by using thrice boiled vegetables in the dietary of diabetics. Until recently, the degree of removal of carbohydrates from different vegetables under repeated boilings had not been extensively studied from the quantitative point of view. This gap in our knowledge has now been partly filled by the work of Cammidge,⁵ who has analyzed seventeen of the commonly used vegetables after boiling once, twice and three times. He found that the number of boilings necessary to remove all carbohydrate varied with different vegetables. In the case of celery, rhubarb and spinach, two boilings sufficed to remove all carbohydrate. In the case of white turnips and carrots, three boilings were sufficient; but in the case of all the other vegetables tested there was still carbohydrate varying from 0.1 to 1 per cent. after three boilings. There appeared to be no direct relation between the amount of carbohydrate originally present and the number of boilings required to remove it. The serious drawback to the use of thrice boiled vegetables has proved to be the lack of palatability that results. It is difficult to serve in an appetizing form the resultant mass of vegetable material, and the removal of the carbohydrates is accompanied by almost complete removal of the original flavor. This can be remedied to some extent by mixing clear broths or similar flavoring substances with the vegetable purée. It was some time ago suggested by Ruth Wardall that repeated extraction of the vegetables at a temperature considerably below boiling might accomplish the same result as boiling, without interfering so seriously with

1. Mayer, Leo: Surg., Gynec. & Obst. **29**: 425 (Nov.) 1919.
2. Propping, Karl: Deutsch. Ztschr. f. Chir. **148**: 251 (Feb.) 1919.

3. Ebner: Deutsch. Ztschr. f. Chir. **107**: 63, 1912.
4. Manon, M.: Snapping Hip Joint, Presse méd. **27**: 635 (Oct. 29) 1919.
5. Cammidge, P. J.: Lancet **2**: 1192 (Dec. 27) 1919; abstr. J. A. M. A. **74**: 358 (Jan. 31) 1920.

the palatability of the vegetables. Cammidge also tested this method of extraction and found that just as satisfactory results could be obtained and that the vegetables were left in a much more palatable condition.

Association News

COMMITTEE ON SCIENTIFIC RESEARCH MAKES GRANTS

The Committee on Scientific Research of the American Medical Association has made these grants for scientific work:

PROF. G. CARL HUBER, University of Michigan, for study of nerve repair, \$400.

PROF. H. M. EVANS, University of California, for study of the influence of endocrine glands on ovulation, \$400.

PROF. E. R. LECOUNT, Rush Medical College, for study of extradural hemorrhage and of the hydrogen-ion content of the blood in experimental streptococcus infections, \$200.

DR. E. E. ECKER, Western Reserve University, for a study of the specificity of antianaphylaxis, \$200.

DR. HENRIETTA CALHOUN, Iowa State University, for a study of the effect of protein shock on diphtheria intoxication, \$400.

THE NEW ORLEANS SESSION

Going to New Orleans by Boat

As previously announced, Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., is arranging for a party to go by boat from Baltimore to New Orleans. He desires to correspond with physicians who would like to join such a party. The tentative plans for the trip provide that the boat shall leave Baltimore, Friday, April 23, and arrive in New Orleans, April 27. It is proposed that those who desire to do so may use their staterooms during the stay in New Orleans, and obtain breakfast on board the boat. On the return trip, it is planned that the boat leave New Orleans, Friday night, April 30, and reach Baltimore, Wednesday, May 5. It is estimated that the expense for the trip will be about the same as for railroad fare and sleeper, plus hotel expenses for the time occupied by the trip.

It has also been announced that the *Comas*, one of the Morgan Line of steamships, will leave New York, April 21, and sail from New Orleans on the return trip on the morning of May 1. This boat carries seventy first-class passengers. There is space also for thirty second-class passengers. Requests for particulars should be addressed to Mr. A. J. Poston, General Agent of the Southern Pacific Lines, 165 Broadway, New York City.

An Entertainment Feature

The Local Committee on Arrangements announces a novel feature of the entertainment to be provided for visiting Fellows, their wives and guests. This will be a carnival ball to be staged at the President's reception. There will be presented a number of interesting and attractive tableaux. This entertainment is characteristic of New Orleans, and promises to be of great interest to those who will be fortunate enough to be in attendance.

Hotel Accommodations

The chairman of the Committee on Hotels, Dr. J. J. Wymer, 921 Canal Street, New Orleans, reports that arrangements have been completed to handle promptly all requests for reservation for lodgings which may be received from Fellows of the Association. In addition to the available accommodations in the hotels, the Hotel Committee has arranged to assign to visitors a large number of rooms in well appointed boarding houses as well as in private homes. It is urged that Fellows who desire to make such reservations shall communicate with Dr. Wymer as soon as possible. When two or more are traveling in company and are willing to occupy the same room, this should be stated.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Nursing Course Postponed.—On account of the prevalence of influenza, the opening of the four months' course of public health nursing, notice of which appeared in *THE JOURNAL* of February 7, has been postponed from March 1 to April 1.

Colorado School of Tuberculosis.—During 1919, the Colorado School of Tuberculosis was organized at Colorado Springs, along the lines similar to the Trudeau School of Tuberculosis. Dr. Gerald B. Webb was elected president; Dr. Philip A. Loomis, managing director, and Dr. George Burton Gilbert, secretary. The next course will begin August 2, and will continue until September 10.

DISTRICT OF COLUMBIA

Legislation to Regulate Practice of Osteopathy.—A bill to "regulate the practice of osteopathy in the District of Columbia" has been introduced in the House by Congressman Johnson of Kentucky. At the present time there are no medical restrictions or limitations on the practice of osteopathy in the national capital and any one can engage in the work. The bill provides for the creation of a board of osteopathic examiners; that all osteopaths must be graduates from legally incorporated schools or colleges, with a four years' course of instruction; that osteopaths shall observe all laws and regulations of the District of Columbia relating to the control of contagious diseases, certifying of births and deaths; a penalty of fine and imprisonment is provided for failure to comply with the provisions of the bill. This same bill passed the House two years ago but failed of passage in the Senate.

GEORGIA

New Officers.—The Association of Railway Surgeons of Georgia was organized at Macon, January 28, and the following officers were elected: president, Dr. Allen R. Rozar, Macon; vice presidents, Drs. George R. Maner, Warrenton, Thomas J. McArthur, Cordele, and Thomas H. Hancock, Atlanta, and secretary-treasurer, Dr. Jarrett W. Palmer, Ailey. The next meeting of the association will be held in Atlanta in August.—Emanuel County Medical Association held its annual meeting at Swainsboro, January 21, and elected Dr. Rufus C. Franklin, Swainsboro, president; Dr. Andrew C. Johnson, Garfield, vice president, and Dr. Thomas E. Blackburn, Wesley, secretary-treasurer.

Personal.—The residence of Dr. William J. Little, Vineville, Macon, was damaged by fire to the extent of \$4,000.—Dr. John M. Sigman, Macon, has resigned as director of the United States Public Health Service Hospital at Atlanta and resumed practice in Macon.—Dr. Horace C. Robles, Albany, has been elected health officer of Dougherty County.—Dr. Henry R. Slack, La Grange, was elected president of the Georgia branch of the Johns Hopkins Alumni Association at its annual meeting in Atlanta, February 21.—Dr. Walter E. Barber, Atlanta, has been reelected vice chairman of the Fulton County Board of Health.—Dr. William H. Myers, Savannah, has been appointed chairman of the Savannah health survey.—Dr. Willard E. Quillian, Atlanta, has been elected vice president of the Atlanta Board of Health.—Dr. James T. Ross, Macon, has been reelected chairman, Dr. J. H. Hurd, Rutland, vice chairman, and Dr. Herring Winship, Macon, secretary of the Bibb County Board of Health.

IDAHO

Barracks Made Into Hospital.—The government barracks at Boise have been converted into a military hospital which will accommodate 200 patients. This hospital will care for disabled service men and will in addition be utilized as a general hospital.

Society Organized.—Physicians of Shoshone County met at Wallace recently and organized the Shoshone County Medical Society, electing Dr. Francis Leo Quigley, Wallace,

temporary chairman; Dr. William C. Lindsay, Kellogg, temporary vice chairman, and Dr. Leonard E. Hanson, Wallace, temporary secretary.

ILLINOIS

Personal.—Dr. George W. Alverson, Sciota, is said to have been found guilty, February 28, of the murder of Lawrence Clugston at Bushnell, in July last, and to have been sentenced to imprisonment for life in the penitentiary.

Illinois State Medical Society Proposes Section for New State Constitution.—The Illinois State Medical Society, through a special committee headed by Dr. Charles E. Humiston, has proposed the following section for the new constitution of the state, now before the constitutional convention in Springfield:

Section. The health of the people is essential to the welfare and perpetuity of the state.

"The General Assembly may enact laws to preserve and safeguard the health of the people and to impose licenses upon those undertaking to treat or cure the sick or infirm or to preserve from sickness and infirmity, persons within the state.

"No power shall exist to impose, hereafter, any term or restrictions or give power to any person or persons to treat or undertake to treat any ailment, infirmity or disease of another for pay, reward or compensation, upon any different terms, limitations, qualifications or prerequisites from those granted or limited to every other person or persons, who may hereafter be licensed to undertake to treat or cure the sick or infirm, or to preserve from sickness and infirmity, persons within the state.

The proposition has been submitted to the committee on miscellaneous topics consisting of O'Brien, chairman, Coolley, Lohman, Michaelson, Meinert, Hill, Pincus, Brandon, Paddock, Johnson, W. A. and Hollenbeck. The bill was presented to the convention by delegate George F. Lohman. Physicians and others who are interested in this section may communicate directly with the members of the committee apprising them of their interest in its adoption.

Chicago

Surgeons Hold Clinical Meeting.—The Chicago Surgical Society held an all-day clinical meeting, March 5. Throughout the day there were clinics at St. Luke's Hospital and the dinner and scientific program were held at the University Club in the afternoon.

The Augustana Hospital Drive.—The seven day drive conducted by 1,000 workers to raise \$700,000 for the erection and equipment of a new building for Augustana Hospital closed, February 26, with \$153,266 in the hands of the campaign committee. The construction of the new building will go forward.

Home Nursing School.—The fourth class in the Free Municipal Training School for Home and Public Nursing will open, March 7, with a class of 650. The third class of 831 women was graduated, February 24, and received the diplomas after completing an eight weeks' course in the training school.—It is said that 862 graduates of this school attended 10,360 cases during the recent prevalence of influenza.

Personal.—Dr. Edwin O. Jordan, chairman of the department of hygiene and bacteriology in the University of Chicago, has been made a member of the International Health Board of the Rockefeller Foundation, but will remain with the university.—Dr. Georgiana M. Dvorak Theobald, the only woman physician to serve with the American Red Cross in Siberia as a surgeon of the Czecho-Slovak army, returned from Siberia, February 28.—Dr. Alice K. Hall has been appointed a medical intern in the Los Angeles County (California) Hospital.

Medical Staff Appointments.—The following appointments to the attending staff of Cook County Hospital in the department of medicine have been announced as the result of a competitive examination given Dec. 4, 1919, by the Cook County Civil Service Commission: Drs. Charles H. Spencer Williamson, Ernest E. Irons, Ellis Kirk Kerr, Joseph L. Miller, Arthur F. Byfield, Joseph A. Capps, Walter W. Hamburger, James G. Carr, Willard W. Dicker, Sidney Strauss, Don C. Sutton, Lee C. Gatewood, Frederick Tice, Ludwig M. Loeb, Karl K. Koessler, and Theodore Tieken.

INDIANA

Tuberculosis Association Meeting.—At the annual meeting of the Indiana Tuberculosis Association held at Indianapolis, February 3 and 4, Dr. Gardner C. Johnson, Evansville, was elected president; Dr. Alfred Henry, Indianapolis, vice presi-

dent; Mrs. Ella B. Kahrer, Anderson, recording secretary, and Mr. James W. Lilly, Indianapolis, treasurer.

Leave of Absence to Dr. Hurty.—The state board of health has granted a leave of absence to Dr. J. N. Hurty, its secretary. He will spend his leave in Florida, and during his absence Dr. William F. King, Indianapolis, will be in charge of the office.

New Hospital for Muncie.—The city council of Muncie, after having refused to make an appropriation of \$25,000, requested by the citizens who were seeking to buy the Home Hospital for \$105,000 and convert it into a city hospital, has agreed to make a cash donation of \$15,000 and to give an additional \$10,000 whenever the board of governors desires to enlarge the institution. Home Hospital will continue as a public institution but with a city official represented on the board of governors.

Personal.—Dr. Herman W. MacDonald, New Castle, has been appointed local surgeon for the Big Four System succeeding Dr. Oliver J. Gronendyke.—Dr. Frederick J. Schulz, for thirteen years surgeon of the General Electric Company at Fort Wayne, has resigned.—Dr. Harry E. Sharrer, Hammond, has resigned as district surgeon of the New York Central Line.—Dr. Edgar C. Loehr, Noblesville, has been appointed health officer of Hamilton County succeeding Dr. Frank Hershey, deceased.—Dr. Harvey W. McKane, Indianapolis, has been appointed a director of the division of tuberculosis, one of the new divisions of the department of health created by the last state legislature.—Dr. Paul E. Bowers, superintendent of the Northern Indiana Hospital for the Insane, near Logansport, has resigned to accept the position of superintendent of a hospital in California.

IOWA

Hospital Notes.—The Samaritan Hospital, formerly the City Hospital, Des Moines, has recently been opened to the public and it can accommodate seventy-five patients.

Health Laboratory Finished.—The new bacteriologic laboratories of the Sioux City Health Department have been completed and are in charge of Mr. W. D. Hayes, city bacteriologist.

Personal.—Dr. John M. Knott, who has practiced medicine in Sioux City for over half a century, announces that he will retire from active practice this month and will move to Southern California.

MARYLAND

Increased Appropriation for Medical School.—The governor of Maryland has recommended to the legislature an appropriation of \$42,500 per year for the next two years for the University of Maryland School of Medicine, which is an increase over the former appropriation of \$25,000. The college has also received \$1,000 from the City of Baltimore for its outdoor obstetric department.

Night Clinics at the Hebrew Hospital.—The board of directors of the Hebrew Hospital have opened a night clinic at the hospital which will be held every Tuesday and Thursday evening. There are a number of free day dispensaries connected with the hospitals in this city, but no night dispensaries for the treatment of general diseases in this city or in this part of the country. The visiting physicians of the hospitals will be in attendance at the clinics.

Personal.—Dr. Elmer V. McCollum, Ph.D., Baltimore, of Johns Hopkins University has been made a corresponding member of the Royal Academy of Medicine of Belgium.—Col. Henry Page, commanding officer at U. S. A. General Hospital No. 2, Fort McHenry, who has been recuperating at Raleigh, N. C., from an attack of influenza, has returned to the post to make preparations for his transfer to Denver, Colo., where he will be in charge of General Hospital No. 21.—Dr. James H. Jarrett, Towson, nestor of the medical profession at Towson, where he has practiced since 1865, celebrated his eighty-eighth birthday last week at his home.—Dr. Ross McC. Chapman, first assistant physician and chief executive officer of St. Elizabeth's Hospital, Washington, has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital. Dr. Chapman, who will assume his new duties March 15, will succeed Dr. Edwin N. Brush, Towson, resigned after a service of nearly thirty years. In addition to his duties at St. Elizabeth's, Dr. Chapman holds the position of clinical associate in psychiatry and clinical neurology of the faculty of George Washington University, Washington.

MISSOURI

Personal.—Drs. Andrew W. McAlester, Columbia, and Woodson Moss, Columbia, were elected honorary active members of the Boone County Medical Society on account of their long and distinguished service in the profession, and as an expression of the esteem in which they are held.

Electro-Therapeutic Clinic in Kansas City.—The week of May 24 has been selected for the second graduate course of lectures in electrotherapeutics by Dr. Burton B. Grove, Colorado Springs, Colo. The course will precede the annual meeting of the Western Electro-Therapeutic Society which is to be held at the Little Theater, Kansas City, May 27 to 28.

State Medical Association Meeting.—The annual meeting of Missouri State Medical Association will be held at the state house, at Jefferson City, April 6 to 8. The house of delegates and scientific assembly will hold sessions simultaneously on the first day. A bronze tablet in memory of the nine members of the association who died in service during the World War will be dedicated at this meeting.

St. Louis

Memorial to Dr. Steer.—The council of the St. Louis Medical Society has granted a request made by Dr. William T. Coughlin as chairman of the committee of Washington University Alumni Association to erect a memorial to the late Dr. Justin Steer in the hall of the St. Louis Medical Society building.

Dean Resigns.—Dr. G. Canby Robinson, dean of Washington University Medical School, has resigned to accept a position as dean and professor of medicine in Vanderbilt University, Nashville, Tenn. This is the first appointment to the faculty of Vanderbilt since the donation of \$4,000,000 by the general education board to the university.

NEW YORK

Health Center at Hornell.—The common council of Hornell has set apart rooms in a city owned building to house a tuberculosis clinic, which has been in operation for several years, a child welfare station more recently established and a venereal clinic.

Trudeau School Quota Filled.—The Edward L. Trudeau Foundation for Research and Teaching in Tuberculosis of the Trudeau Sanatorium, Saranac Lake, announces that the Trudeau School of Tuberculosis, which will hold its sixth session, June 16 to July 27, has for six months had a capacity enrolment and will be unable to admit any more students.

Personal.—Dr. LeRoy W. Hubbard has resigned as a member of the health board of Mount Vernon and has been succeeded by Dr. John H. Tallman.—Dr. Malcolm F. Lent, Albany, formerly medical director of the Stony Wold Sanatorium, has been appointed supervisor of the division of tuberculosis of the New York State Department of Health.

Division of Industrial Welfare Advocated.—One of the most important works conducted by the public health council of the state department of health during the year 1919 was an investigation of the industrial welfare needs of the state. As a result of a general survey of industrial conditions throughout the state, the council and the health commissioner have recommended the establishment within the department of health of a division of industrial welfare. The council has during the year provided for a period of isolation for typhoid and paratyphoid fever patients; for the exclusion from schools of children suffering with epidemic influenza; for the regular attendance of a physician at all day nurseries in the state, and for the taking of smears in cases of ophthalmia neonatorum.

New York City

Harvey Society Lecture.—The seventh lecture of the Harvey Society series will be delivered at the New York Academy of Medicine, March 13, at 8:30 p. m., by Dr. Otto Folin, professor of physiologic chemistry in Harvard University, on "Blood Chemistry."

Personal.—Thomas J. Preston, Ph.D., dean of the New York Homeopathic Medical College, has resigned.—Col. Henry D. Thomason, M. C., U. S. Army, retired, has been appointed superintendent of the Flower Hospital.—Dr. Frederic L. Barnum, Brooklyn, a member of the Red Cross commission to Siberia, who was recently captured by the bolsheviks, has been released.

Campaign Against Violators of Harrison Law.—At a conference between representatives of the Internal Revenue Department, February 23, plans for a vigorous campaign

against dealers, smugglers and physicians who violate the Harrison narcotic law were formulated. The narcotic squad has been greatly enlarged and the enforcement of the law placed under the direction of James S. Shevlin.

PENNSYLVANIA

Radium Manufacturer Dies.—Mr. Joseph M. Flannery, Pittsburgh, prominently associated with the Standard Chemical Company which is the pioneer industry in producing radium for use by American physicians from native ore, died recently.

Hospital Library Association Organized.—The St. Joseph Hospital, Pittsburgh, has organized a library association to be open to those who patronize the hospital as well as to the physicians of the city and vicinity. Dr. Richard J. Behan is president and Dr. Jacob Rockman, secretary of the association.

New Influenza Cases in Pennsylvania.—Until February 24, the health department figures showed 1,262 new cases of influenza and 383 of pneumonia, with 438 deaths in three days. The Philadelphia reports were: influenza, 193; pneumonia, 161, while Pittsburgh reported 42 of influenza and 53 of pneumonia.

Case Against Physician Non-Suited.—In the case of John W. Conrad against Dr. George N. Highley, Conshohocken, in which damages of \$20,000 were claimed for alleged malpractice in the neglect of his wife during delivery, Judge Swartz granted a non-suit on the grounds that no negligence on the part of Dr. Highley has been proved.

Personal.—Dr. Hugh Hamilton, Harrisburg, is president, and Dr. Samuel P. Heilman, Lebanon, secretary of the Pennsylvania Federation of Historical Societies.—Dr. Joseph Scattergood, West Chester, has been appointed local surgeon of the Pennsylvania Railroad at West Chester, succeeding Dr. Percy C. Hoskins, deceased.—Dr. Charles T. Horn, Lehigh, is president of the newly organized Lehigh Board of Health.—Dr. Ira J. Hain has been made health officer for Reading.

Philadelphia

Personal.—William G. McAllister, superintendent of the bureau of hospitals in the health department, resigned, February 27, the resignation to take effect April 1. He was appointed provisionally to the new bureau a few weeks ago.

Prison Goods for Hospitals.—According to E. J. Lafferty, secretary of the prison labor board, authority to sell prison made goods to all institutions receiving state aid will be asked of the next legislature. An effort will be made to secure the passage of such a law for at present the sale of prison made goods is restricted to county institutions while the product cannot be sold in Philadelphia County. There are approximately 3,200 state wards in the penal institutions of the state at present. Of this number only 10 per cent. are employed. Under the new law all could be employed and made self supporting by manufacturing supplies used by hospitals such as beds, mattresses, sheets and blankets; and the adoption of such a law would make it possible for the Philadelphia Hospital and similar institutions throughout the state to buy largely from the prison labor board.

SOUTH CAROLINA

New Hospital.—A new Salvation Army home and hospital is to be erected at Greenville to cost \$200,000.

Ambulance Given to Roper Hospital.—Having no further use for a motor ambulance, the Charleston Chapter of the American Red Cross has presented its Silver Thimble Fund ambulance to the Roper Hospital at Charleston.

Personal.—Dr. Allard Memminger has been appointed chairman of the board of health of Charleston. The other members are Drs. John Mercer Green, secretary, and Charles P. Aimar, Henry W. DeSaussure and Archibald J. Buist.—Dr. William T. Brockman has been elected mayor of Greer.

SOUTH DAKOTA

Personal.—Dr. George S. Adams, Yankton, has been appointed superintendent of the State Hospital for the Insane, succeeding Dr. Leonard C. Mead, deceased.

New Officers.—Huron Medical Society at its annual meeting elected Dr. Benjamin Thomas, Huron, president; Dr. John C. Shirley, Huron, vice president, and Dr. Lorenzo N. Grosvenor, Huron, secretary-treasurer.—Dr. Mathew J. Hammond, Watertown, has been elected president of the Watertown District Medical Society.

TENNESSEE

State Association Meeting.—The eighty-seventh annual meeting of the Tennessee State Medical Association will be held at Chattanooga, April 6 to 8, under the presidency of Dr. Andrew F. Richards, Sparta.

Chiropractors Enjoined.—Six chiropractors of Memphis were enjoined, January 28, from practicing, in a decision given by Judge Heikell in a case brought by representatives of the osteopathic and medical profession. An appeal was taken to the supreme court.

Personal.—Dr. John S. Freeman, Springfield, has been reelected for a term of four years as health officer for Robertson County.—Dr. Howard M. Francisco has been appointed assistant superintendent of the Central State Hospital, Nashville, and also chief of the neuropsychiatric clinic of Vanderbilt Medical School. He is holding two clinics a week at the medical college and one clinic a week at the Central State Hospital.—Dr. George A. Hatcher, formerly assistant physician at the Central State Hospital, Nashville, has entered private practice at Fayette.

TEXAS

Trachoma Survey.—Asst. Surg. Joseph L. Goodwin, U. S. P. H. S., who has been assigned to make a survey of trachoma in the state, has begun work in Jefferson County, where he will ascertain the prevalence of this disease among school-children.

Unwarranted Liquor Prescriptions.—The criminal district attorney has notified sixteen physicians of Houston to appear before a board of five state officials to explain why hundreds of prescriptions for liquor have been written by them. One of the physicians cited to appear is said to have a record of 388 prescriptions written in December alone.

Course in Public Health Nursing.—With the opening of the winter term the University of Texas will inaugurate a course in public health nursing, consisting of three months' theoretical work to be given at the university in Austin and two months' field work in Houston. This course is similar in length and content to those given in Columbia, Yale, Northwestern, California, Syracuse, Missouri and other universities.

Influenza Closing Order Upheld.—Declaring that the board of health of San Antonio was clothed with power to maintain quarantine measures deemed necessary to protect the public health, and that the state sanitary code is not exclusive, the petition of the First Church of Christ, Scientist, of San Antonio asking for an injunction to restrain the city from closing the churches, theaters, and other public places on account of influenza, was denied by Judge Taylor, February 13.

New Officers.—The board of directors of the Texas Public Health Association, February 10, elected the following officers: president, Dr. Zachary T. Scott, Austin; vice presidents, Dr. Elva A. Wright, Houston, and James H. Allison, Fort Worth; secretary, J. E. Rawlings, Fort Worth, and treasurer, H. A. Rowe, Austin. Dr. Morris H. Boerner, Austin; Frank C. Gregg, Austin; Charles S. Venable, San Antonio; William C. Farmer, San Antonio, and John Potts, Fort Worth, were elected directors.—At a recent meeting held at Angleton, the Brazoria County Medical Association was reorganized with the following officers: president, Dr. Samuel B. Maxey, Angleton; vice president, Dr. Moses H. Eades, Sweeney, and secretary-treasurer, Dr. George G. Wyche, Angleton.—The Central District Medical Association at its annual meeting, January 15, elected Dr. Howard M. Lanham, Waco, president, and Dr. N. D. Buie, Marlin, secretary. Marlin was selected as the next place of meeting.—Johnson County Medical Society at its annual meeting held in Cleburne, elected: president, Dr. Walter R. Washburn; vice president, Dr. Cariolanus V. Ezell, and secretary-treasurer, Dr. William E. Lucey, all of Cleburne.

VIRGINIA

Graduate Course for Colored Physicians.—During the last week in January a graduate course in early diagnosis of tuberculosis was given at Piedmont Sanatorium, Bergeville, for the benefit of the colored physicians of the state.

New Officers.—Wise County Medical Society in Norton, January 20, elected the following officers: president, Dr. John A. Gilmer, Big Stone Gap; vice presidents, Drs. Charles C. Carr, Inman, David A. Dunkley, Tom's Creek, and Daniel M. Moore, Stonega, and secretary, Dr. Claude B. Bowyer,

Stonega. It was unanimously voted that the physicians of Wise County increase their rates 75 per cent.

Personal.—Dr. Joseph E. Taylor has been appointed coroner of Danville succeeding Dr. Edward Howe Miller, resigned.—Dr. John Garnett Nelson, Richmond, was elected commander of the Richmond Chapter of the American Officers of the World War at its meeting for organization, January 30.—Dr. Stuart McGuire, Richmond, was elected president of the Richmond Chapter of the University of Virginia Alumni at its meeting, February 13.

CANADA

Influenza Epidemic Situation.—Influenza is declining in Toronto and other parts of Ontario, and in Montreal and Quebec the situation is said to be well in hand.

Personals.—Dr. James R. Cox who has been spending the last year in Ottawa is leaving for China about the middle of March. Dr. Cox has been a medical missionary in China for a number of years.—Dr. John G. Fitzgerald, Toronto, has been appointed professor of hygiene at the University of Toronto succeeding Dr. John A. Amyot, Toronto, who has been appointed deputy minister of health of the Federal Department of Health, Ottawa.—Dr. Charles K. Clarke, Toronto, dean of the medical faculty of the University of Toronto, has intimated that he will resign shortly.—Dr. Allan Kinghorn paid a visit to Toronto lately before sailing for England on his way to South Africa where he will resume work with the South African Company. Dr. Kinghorn was formerly at Saranac Lake.—Dr. Thomas Archibald Malloch, Montreal, is among the appointments to the Beit Memorial Fund for Medical Research.

GENERAL

Gifts to Medical Schools.—The general education board announces the following contributions for the advancement of medicine: Washington University, St. Louis, \$150,000; Johns Hopkins University, \$400,000, and Meharry Medical School, Nashville, Tenn., \$150,000. The fund given to Johns Hopkins was for the establishment of a full-time teaching system, with complete facilities for a department of obstetrics.

Influenza Statistics.—The health index of the United States Bureau of Census, for the week ending February 14, shows a slight increase in the incidence of influenza and pneumonia in the forty large cities. There was an excess annual mortality of 1,306 per hundred thousand of population as compared to the corresponding week of the median year in the period 1910-1916. At the height of the epidemic of 1918, the excess annual mortality was 4,695 per hundred thousand.

Throat, Nose and Ear Men Meet.—The annual meeting of the middle section of the American Laryngological, Rhinological and Otological Society was held in Cincinnati, February 21, and the following officers were elected: chairman, Dr. Joseph C. Beck, Chicago; vice chairman, Dr. George M. Coates, Philadelphia; secretary, Dr. William B. Chamberlin, Cleveland, and executive committee, Drs. Francis P. Emerson, Boston, Greenfield Sluder, St. Louis, and Lee Wallace Dean, Iowa City.

Medical College Association Elects Officers.—At the annual meeting of the Association of American Medical Colleges held in Chicago, March 2 and 3, Dr. William Pepper, Philadelphia, was elected president; Dr. Thomas Hough, Charlottesville, Va., vice president, and Dr. Fred C. Zapffe, Chicago, was reelected secretary-treasurer. The new executive council consists of Drs: Irving S. Cutter, Omaha; Isadore Dyer, New Orleans; James Ewing, New York City; Charles R. Bardeen, Madison, Wis, and George Blumer, New Haven, Conn.

New Tri-State Officers.—The twenty-second annual meeting of the Tri-State Medical Society of the Carolinas and Virginia was held in Charlotte, February 18 and 19, under the presidency of Dr. Robert C. Bryan, Richmond, Va., and the following officers were elected: president, Dr. John P. Munroe, Charlotte; vice presidents, Dr. John A. Williams, Greensboro, N. C., William W. Fennell, Rock Hill, S. C., and Halstead S. Hedges, Charlottesville, Va., and secretary, Dr. James K. Hall, Richmond, succeeding Dr. Rolfe E. Hughes, Laurens, S. C., who had occupied the position for twelve years and declined reelection. Spartanburg, S. C., was selected as the meeting place for 1921.

Plans of Red Cross.—Dr. Livingston Farrand, chairman of the central committee of the American Red Cross, announces the following plans for the completion of war time obli-

tions and carrying forward the peace time activities. A fund of \$30,000,000 is appropriated for various uses at home and abroad. For obligations to soldiers, sailors and their families, relief demands incident to disaster, and the establishment of a peace program in America, \$13,750,000 is allotted; for general European relief, especially in Eastern Europe, an appropriation of \$15,000,000 is made, and it is estimated that the work of the American Red Cross in Siberia will call for an appropriation of \$1,250,000.

American Congress on Internal Medicine.—The fourth annual meeting of the American Congress on Internal Medicine was held in Chicago, February 23 to 28, under the presidency of Dr. Glentworth R. Butler, Brooklyn. The scientific program included clinics, lectures and laboratory demonstrations in the mornings; clinical talks and demonstrations in the afternoons, and on Wednesday evening a joint meeting of the congress and the Chicago Medical Society at which Dr. Alfred S. Warthin of the University of Michigan, Ann Arbor, delivered an illustrated address on the "Medical Aspects of Gassing in Warfare, with Particular Reference to Mustard Gas." On Thursday the members of the congress inspected the Chicago Municipal Tuberculosis Sanatorium. Baltimore was selected as the next place of meeting.

Physician as British Ambassador.—The medical profession will be interested in the appointment of Sir Auckland Geddes as British ambassador to the United States which marks another chapter in the public career of a physician. Our London correspondent commented on the singular fact that two qualified physicians held the rank of cabinet minister in the British government—Sir Auckland Geddes and Rt. Hon. Christopher Addison, first minister of health. Sir Auckland Geddes, who was born in Scotland in 1879, was a pupil of Sir William Turner at Edinburgh, where he graduated M.D. in 1903, and later served as demonstrator and assistant professor of anatomy. From Edinburgh he was called to the chair of anatomy at the Royal College of Surgeons of Ireland, and during this period he made many contributions to the literature of anatomy and embryology, with here and there a note on the mechanical and structural factors of pathologic process. In 1913, Dr. Geddes was appointed professor of anatomy at McGill University. At the outbreak of the European war, he obtained leave from McGill University to enter military service. In 1916 he was appointed director of recruiting and when in August, 1917, recruiting was placed under civilian control, Sir Auckland became minister of national service. His election to parliament from Hampshire and his appointment to the ministry of reconstruction followed. In addition he assumed for a time the duties of president of the Local Government Board, in which position he was instrumental in the passage of the act creating the ministry of health. In April, 1919, he was appointed principal of McGill University and it was expected that he would assume the duties of the position in the fall, but this was prevented by his subsequent appointment as president of the board of trade and now as ambassador to the United States. His active interest in medical education is evidenced by his critical remarks on the record of the medical profession of England during the war, as reported in *THE JOURNAL*, Jan. 3, 1920, p. 43.

Annual Congress on Medical Education and Licensure.—The Annual Congress on Medical Education and Licensure under the auspices of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, was held this week at the Congress Hotel, Chicago. The sessions lasted three days. There were about 250 delegates present. This has been the most satisfactory conference held on medical education for several years. Instead of three disjointed programs as heretofore held by the three organizations above named, this year a joint session was arranged, by which duplications were avoided, the program as a whole was better arranged and more ample time given for discussion. It appears also

that the speakers were invariably men of ability and competent to speak with authority on the subjects with which they dealt.

Besides the usual reports of progress by the officers of the Council on Medical Education and the presidents of the other organizations, papers were presented; there was a symposium on "The Needs and Future of Medical Education," by Dr. George E. Vincent, president of the Rockefeller Foundation, New York City; Dr. Ray Lyman Wilbur, president of Leland Stanford University, California; Dr. Charles F. Thwing, president of the Western Reserve University, Cleveland; Mr. Abraham Flexner, secretary of the General Education Board, New York City. This was followed by a paper on "The Larger Function of State University Medical Schools," by Dr. Walter A. Jessup, president of the State University of Iowa, Iowa City. Two papers on "Research in Medical Schools" was given by Dr. Oskar Klotz, professor of pathology, University of Pittsburgh School of Medicine, Pittsburgh, and Dr. G. Canby Robinson, dean, Washington University School of Medicine, St. Louis. A great deal of discussion was given to the subject of "Full-Time Clinical Professors" following the remarks by the chairman of the Council on Medical Education and the paper by Dr. William Darrach, dean of Columbia University College of Physicians and Surgeons, New York City.

The subject of medical licensure was presented in the address on "Coordination of Effort in Medical Licensure,"

by Dr. David A. Strickler, president of the Federation of State Medical Boards, Denver, and in a paper on "Interstate Relations in Medical Licensure," by Mr. Francis W. Shepardson, director of the Department of Registration and Education of the State of Illinois. "Graduate Medical Education in the United States and Europe" was presented in articles by Dr. Louis B. Wilson, director of the Mayo Foundation for Medical Research, Rochester, Minn., and Dr. Walter L. Bierring, secretary of the Federation of State Medical Boards, Des Moines, Iowa.

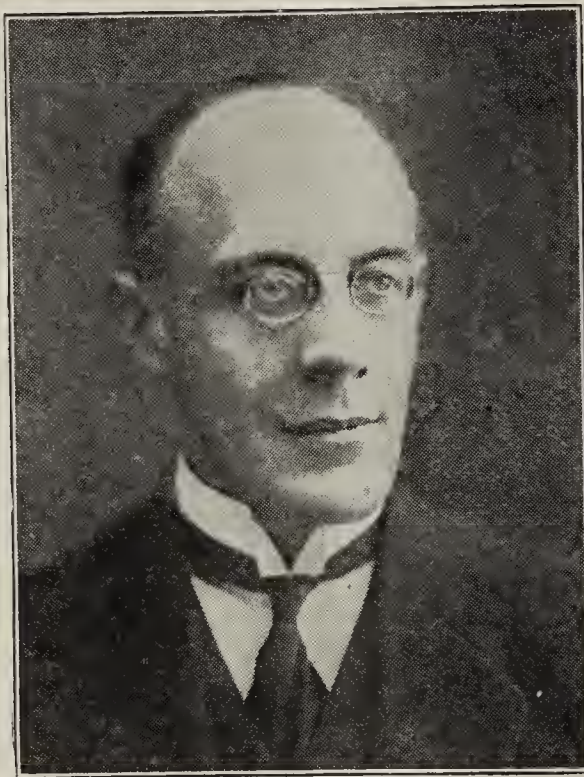
Following were a series of reports on the teaching of the various pre-medical sciences by members of the Committee on Medical Pedagogy of the Association of American Medical Colleges. Among those presenting reports were: "Anatomy," Dr. Charles R. Bardeen, dean, University of Wisconsin Medical School, Madison; "Histology and Embryology," Dr. F. C. Waite, professor of histology and embryology, Western Reserve University School of Medicine, Cleveland; "Neuro-Anatomy," Mr. Irving Hardesty, professor of anatomy, Tulane University School of Medicine, New Orleans; "Physiology," Dr. E. P. Lyon, dean, University of Minnesota Medical School, Minneapolis; "Biological Chemistry," Dr. Otto Folin, professor of biological chemistry, Medical School of Harvard University, Boston; "Pharmacology," Dr. C. W. Edmunds, assistant dean, University of Michigan Medical School, Ann Arbor; "Pathology," Dr. James Ewing, professor of pathology, Cornell University Medical School, New York City; "Bacteriology and Parasitology," Dr. A. I. Kendall, dean, Northwestern University Medical School, Chicago, and "Public Health and Preventive Medicine," Dr. Victor C. Vaughan, dean, University of Michigan Medical School, Ann Arbor.

It had been frequently stated that a difficulty in previous conferences was the failure to provide ample time for discussion. The present conference, therefore, was all the more successful owing to the fact that there appeared to be no difficulty in this respect.

A more complete report, including abstracts of the various papers and discussions, will appear beginning in the next issue of *THE JOURNAL*.

FOREIGN

Cancer in Workers on Coal Briquettes.—The authorities in Germany are now collecting data in regard to cancer in persons engaged in making coal briquettes. In the last five years there have been ten cases of epithelioma recorded in a total of 2,500 workers. It was on the face or arm in five



SIR AUCKLAND GEDDES, M.D.

cases and the scrotum in five others. Conjunctivitis is also common among these workers.

Appointments.—The president of the Royal College of Physicians, London, has appointed Francis W. Andrew, Harveian orator, and Dr. Reginald C. B. Wall, London, Bradshaw lecturer for 1920.—The council has appointed Dr. Martin W. Flack, London, Milroy lecturer for 1921, and has awarded the Oliver-Sharpey prize for 1920 to Prof. Emil Roux of the Pasteur Institute, Paris.

Memorial to Revilliod.—A bronze medallion with the bust of the late Professor Revilliod in bas relief is to be installed in the amphitheater of the medical department of the University of Geneva, Switzerland, the scene of his labors. The memorial is to be presented by his former pupils and friends, and subscriptions of 30 francs or more entitle the donor to a replica in bronze of the medallion. Address Dr. Maillart, 6rue de la Synagogue, Geneva.

Diffraction Phenomena in Blood Cells.—The *Nederlandsch Tijdschrift* relates that Dr. A. Pijper of Bethal, Transvaal, in the midst of the difficulties of practicing medicine in Africa, has undertaken research which has demonstrated certain diffraction phenomena in blood cells and in cocci, which may serve for micrometric purposes. The South African Institute for Medical Research has awarded him 100 guineas as a token of appreciation.

Deaths in the Profession Abroad.—Dr. M. Candela Plá, a pioneer in the introduction of operative gynecology and radium treatment into Spain, professor of obstetrics and gynecology at the University of Valencia, aged 73.—Dr. C. Bozzolo, senator and professor emeritus of clinical medicine at the University of Turin, one of the first to study the spread of cancer by the lymphatics, and author of numerous works on pneumonia, meningitis and ankylostomiasis, aged 75.—Dr. L. Barajas, one of the best known specialists in ear and throat work at Madrid.

Data on Anesthetics.—Prof. W. Denk of Vienna appeals to the members of the profession for data on untoward by-effects or after-effects of all kinds from local anesthesia and nerve blocking, including intraspinal anesthesia. He is compiling records for an address on the subject to be delivered at Vienna in June, 1920, and he states that he would be very grateful for any information to aid him in the task. He inquires particularly for the reasons if any have abandoned the use of any of these methods for anesthesia. He is first assistant at the Klinik Eiselsberg, Alserstrasse 4, Vienna, Austria.

Reappearance of the Liège Médical.—After five years' suspension, the *Liège Médical* makes its appearance anew as the organ and mouthpiece of the profession in the Liège district, as in the seven years before the war. The editorial staff is all local, and includes many well known names, Nolf, Stassen, Malvoz, Fraipont, Beco, Henrijean, Delrez, Fredericq, Weekers and Stockvis, all members of the medical faculty of the university. The first issue tells of the presentation of a souvenir album to Dr. Herman, president of the *Fédération Médicale Belge*, in token of appreciation of his "superhuman efforts in medical care for 600,000 families during the war."

LATIN AMERICA

Epidemic Poliomyelitis in Argentina.—The *Brazil-Medico* states that Dr. Kraus, director of the public health service of Argentina, has gone to Santa Fé to investigate some cases said to be infant paralysis.

Deaths in the Profession.—At Rio de Janeiro, Dr. H. Cesidio Samico, aged 74, and Dr. J. Saturnino de Brito of the public health service.—Dr. E. G. Figueroa, a well known stomach specialist of Buenos Aires.—Dr. F. de la Vega, for many years connected with Hospital Rivadavia at Buenos Aires, was killed, December 30, by a bandit.

Quarantining Against Influenza at Rio.—Several ships arriving at Rio de Janeiro from Europe with influenza on board and several deaths from alleged influenza during the passage, have been quarantined and the passengers held, by order of the director-general of the public health service, Dr. C. Chagas, pursuing the policy inaugurated by his predecessor and demanded by the public press.

Influenza in Mexico.—Influenza continues to spread in Mexico. In Mexico City there were 106 deaths, February 24; 100, February 25, and 86, February 26. All churches, moving picture houses and schools have been closed. It is stated that there are 3,000 persons sick with the disease at Tampico, the disease having taken a virulent form of late.

Numerous cases are also reported from the state of Sonora and the city of Puebla.

Personal.—Dr. Louis Shapiro of the Rockefeller Institute is now in Colombia at the request of the Colombian government, making a study of the prevalence of leprosy, malaria and hookworm disease, in order to submit a plan for its eradication.—Dr. Victor G. Heiser of the Rockefeller Foundation has just returned to New York after a trip to Porto Rico with Dr. Grant to make a study of sanitary conditions of the island, especially as regards hookworm disease. Since the appearance of the hookworm infection in Porto Rico, the government of the island has spent several hundreds of thousands of dollars to combat the disease.

Government Services

MEDICAL OFFICERS, UNITED STATES NAVY,
RELIEVED FROM ACTIVE DUTY

ILLINOIS		NEW YORK	
Chicago—Glaubits, B. J.		New York—Goodchild, F. M.	
MARYLAND		Victor—Aldridge, A. H.	
Grayton—Speake, T. C.		PENNSYLVANIA	
MISSOURI		Emsworth—Plumer, J. S.	
Kansas City—Ridge, F. I.		Philadelphia—Saska, A.	
NEBRASKA		SOUTH CAROLINA	
Genoa—Davis, K. S.		Charleston—Layimer, J. B.	

Health Conditions in the Army

For the week ending February 20, there was continued improvement in the health of the troops, although influenza and pneumonia cases still appear. The number of new cases reported showed a marked decline. There was an increase in the number of new cases of measles. The admission and noneffective rates also declined, the death rate being slightly more than half the rate for the preceding week. Among the American forces in Germany, influenza and pneumonia remained practically the same, while measles showed a decline. Among the American forces in Siberia, twelve new cases of pneumonia were reported as against two for the previous week.

Army Reorganization Bill

The Army Reorganization Bill has been reported from the House Committee on Military Affairs by Congressman Kahn of California, chairman. Under its provisions, there will be 1,820 officers of the medical department. Medical officers who served in the Army during the World War and are now in the Medical Reserve Corps will be eligible for appointment in the regular Army on July 1, 1920, under the terms of this bill. Approximately 700 such vacancies will have to be filled, and the selections will be made from medical men who served in the war and who are now in private life, or from medical officers who are now holding temporary commissions effective until May 1, 1920, only.

The bill provides that a colonel in the Medical Corps shall be not less than 48 years of age; lieutenant-colonel, 45; major, 36; and that no person shall be appointed to a grade higher than that held by him on Nov. 11, 1918—the date of the armistice.

The selection of these medical officers will be made by a board consisting of the general of the Army, three bureau chiefs and three general officers of the line.

It is intended to use the material developed and trained during the war in filling vacancies and the high age limit of 54 years is set in order to obtain the services of men of advanced years and high abilities for some of the technical staff positions.

The bill provides for commissioned rank to members of the Army Nurse Corps. As a result of a caucus of House members, the bill contains no provision whatever regarding a policy for universal military training. There apparently is no prospect whatever that this policy will be established by the present Congress. Its future enactment into law will depend on some program to establish it in schools and colleges and in that way educate the people to its merits. The bill as reported by Congressman Kahn will be the basis of all Army legislation which must be enacted by July 1, because the present law applying to Army personnel is effective only to that date.

Foreign Correspondence

MEXICO CITY

Feb. 22, 1920.

Dr. Noguchi in Mexico

Next to the death of Dr. D. Eduardo Licéaga, already mentioned in *THE JOURNAL*, the event that has attracted most attention among the medical profession in this city has been the visit of Dr. Hideyo Noguchi. He arrived from Yucatán, February 3, and remained here until the 8th, when he returned to New York. Accompanied by Israel J. Kligler, Ph.D., a member of the Rockefeller Institute for Medical Research, he attended the first session of the National Academy of Medicine, of which he is an honorary member. Two days afterward, by special invitation of the board of trustees of the Mexican Medical Association, he gave a brilliant lecture relative to his scientific work on the etiology of yellow fever, carried out in Ecuador and more recently in the city of Mérida. The lecture was illustrated with slides and was given in Spanish, in which the New York bacteriologist can make himself understood. He said that his mission in this country was not a personal undertaking, but that he had been sent by the Rockefeller Institute to try to confirm in Mexico the discovery he had made in South America of *Leptospira icteroides*. He added that, using the well-known technic, he had been able to demonstrate the presence of this germ in four cases of fever he had observed at Mérida, and that he had delivered several specimens of the micro-organism to the superior board of health. He showed several live cultures of *Leptospira* in the dark field and in various stains, as well as the vaccine prepared from these germs, which, it is hoped, may serve to immunize against yellow fever, as similar products have done in other diseases. He also showed the specific serum which possesses curative properties, and the preserved bodies of guinea-pigs that had died of experimental yellow fever, in which could be seen lesions very similar to those produced by the disease in man. He ended by saying that in his work he had been assisted by Kligler and several Mérida physicians. Noguchi was very much applauded by his audience, which included several hundred physicians and many medical students. It can be said that while this lecture did not add to our knowledge of the bacteriology of yellow fever, it strengthened the belief in the causal rôle of *Leptospira*, through its having been isolated in the cases studied recently. Noguchi also demonstrated before several Mexican physicians in one of the departments of the board of health his modification of the Wassermann reaction. While in the city, Noguchi was lavishly entertained both by officials and by private citizens. The impression left by the visit of the Rockefeller representatives could not have been better, and we hope that more American scientists of the same category may come to this country to help us in our struggle for the improvement of health conditions and to cement the bonds that unite the members of the medical profession in the two countries.

The Influenza Situation

Against our hopes based on the long intervals that usually separate the epidemics of influenza, this disease has reappeared. As in previous instances, the epidemic has extended from north to south, after having presented itself in the United States. Owing perhaps to the fact that we are having very mild weather, or for some other reason, the number of those attacked is smaller than in the United States. The disease so far has been mild, the simple catarrhal form exceeding the hemorrhagic cases. The cases of influenzal pneumonia, pleuritis, and bronchopneumonia are also less numerous and there have been no nervous sequelae. There are no official statistics on which to base my opinion, but the general impression is that the mortality has not increased as in 1918; that the persons who contracted the disease in the preceding epidemic have not been attacked this time, and the largest morbidity has been among children.

Personal

Dr. G. Mendizábal, president of the Mexican Medical Association, has been made by the king of Spain commander of the Real Orden de Isabel la Católica.—Dr. José León Martínez, former professor of clinical medicine in the School of Medicine, has been appointed director of the Military Hospital of this city, and of the Military Medical School attached to it, receiving the rank of colonel.—Dr. Germán

Díaz Lombardo, vice president of the Academy of Medicine, has returned from his trip to the United States, where, for the purpose of study, he visited the cities of Chicago and New York.—Dr. Agustín Chacón, an ophthalmologist, member of the academy and former professor of the School of Medicine, has died as a result of a gastrorrhagia.

PARIS

Jan. 29 1920.

The Creation of the Office of Minister of Hygiene

Prime Minister Clemenceau having resigned, M. Millerand, his successor, was charged with the organization of a new cabinet. He has introduced an innovation by creating a new ministerial office, that of ministère de l'hygiène, de l'assurance et de la prévoyance sociales (social hygiene, social insurance and social provision). The question of appointing a special minister of public health has been considered for some time. The question first came up in 1902, at the time the law in regard to the protection of public health was passed. It was again agitated when the application of the law was extended so as to include the antituberculosis and social hygiene dispensaries. In 1913, Dr. Vaillant, a Paris deputy, had taken the initiative and demanded the creation of the office of minister of public health, and M. Mirman, at that time directeur de l'assistance et de l'hygiène publiques au ministère de l'intérieur, had favored such action. In 1916, Jules-Louis Breton, deputy of the department of Var, presented a more modest proposal to the chamber of deputies. He requested that the office of undersecretary of state for hygiene, in connection with the service of the minister of the interior, be established. The year before, on the initiative of M. Millerand, at that time minister of war, the government had created the office of undersecretary of state for the Service de santé militaire. But during the great epidemic of influenza that raged in France in 1918, it was found that the duties and functions of two duly appointed officials clashed, namely, the undersecretary of state for hygiene, associated with the office of minister of the interior, and the undersecretary of state associated with the Service de santé militaire. In view of this fact, M. Clemenceau organized, under his chairmanship, a ministerial conference, grouping together all the services having to do with health and hygiene, which at that time were scattered through five ministerial departments. Under Prime Minister Millerand this temporary arrangement has taken on a permanent form, and the office of minister of hygiene has been conferred on J.-L. Breton, as already stated. Having been chemical engineer, adviser to the chamber of deputies in matters of social hygiene, and author of the bill aiming to suppress the use of white lead in building paint, Breton was the logical choice for the new post.

A Physician's Responsibility in Accidents Following Subcutaneous Injections

A physician residing in one of the departments outside of Paris is facing, as the result of the death of a client, in whom an abscess developed after an injection, a charge of homicide through imprudence. The Société de Médecine de Paris has interested itself in the case, and has drawn up and approved the subjoined conclusions, which will be presented to the court by the counsel for the defendant:

The Société de Médecine de Paris hereby gives expression to the following opinions: 1. The use of subcutaneous injections of camphorated oil and of strychnin is absolutely indicated in cases of severe typhoid, in order to keep up the general condition of the patient and to forestall cardiac insufficiency. 2. The dose of strychnin employed (6 mg.) is less than the amount that may be injected with safety during a twenty-four hour period. 3. Abscesses may occur during the course of typhoid without giving rise to the presumption of error in the matter of asepsis. 4. The physician in charge of the case is always the judge of the treatment to be employed, and he can modify it according to the exigencies that arise.

Medical Service in the Liberated Regions of France

The minister of liberated regions offers the following conditions to physicians who desire to take up their residence, at least temporarily, in such localities of the liberated regions as are deprived of civilian physicians: 1. The physicians accepted for such service will be placed by the minister of war at the disposal of the minister of liberated regions, but with the stipulation that, whenever local conditions will permit, a certain limited amount of military service may be required. 2. They will continue to be governed by military statutes. 3. Those who are receiving a salary of less than 1,000 francs a month will receive from the minister of liberated regions such additional sum as will make up such total

mount. 4. They will be engaged for a period of three months, which will be renewable, and will be authorized to accept a paying clientage. 5. The minister of liberated regions will provide them with an automobile, and will furnish them gratuitously with tires and gasoline in such amounts as may be necessary to cover their allotted territory.

The first vacancies to be provided for are permanent posts in infirmaries and hospitals, which must be installed and organized in connection with the establishment of certain important centers where laborers needed in building up the isolated regions will be brought together.

A Commemorative Ceremony

A ceremony commemorative of the members of the medical corps who died at the post of duty was held at the Sorbonne, January 25, under the auspices of the Association générale des médecins de France and the Association générale des pharmaciens. The various medical faculties and schools of pharmacy, the academy of medicine, the learned and professional societies and the Service de santé militaire felt called on to take part in this solemn occasion. M. J.-L. Breton, minister of hygiene, presided at the ceremony. He was assisted by Dr. Mourier, former undersecretary of state for the Service de santé militaire, and by Dr. Roger, dean of the Faculté de Médecine de Paris.

In his opening address, Dr. Bellemontre, president of the Association générale des médecins de France, mentioned the fact that out of 22,000 French physicians and surgeons 18,000 were mobilized, and that the percentage of losses in the Service de santé militaire was next to that of the officers of the infantry.

LONDON

Feb. 7, 1920.

Medical and Surgical Units at the London Hospitals

The system of forming medical and surgical units for teaching and investigation at the London hospitals, described in previous letters, is extending. At St. Thomas's, Dr. E. H. Starling, F.R.S., professor of physiology at University College, has been appointed director of the medical unit, and assistant directors in pathology and clinical medicine are about to be appointed. Sir C. Wallace, surgeon to the hospital, has been appointed director of the surgical unit. At University College, Dr. T. R. Elliott, F.R.S., physician to the hospital, has been appointed director of the medical unit, and Dr. J. W. McNee, recently assistant to the regius professor of medicine and to the professor of pathology at Glasgow, has been appointed deputy and first assistant. Dr. M. R. Walshe has been appointed second assistant to the director to control neurologic teaching and research, and also to take charge of electrotherapeutics and massage. The director of the surgical unit is Mr. C. C. Choyce, with two assistants. The directors of units are responsible for the general arrangements of systematic teaching on the principles of medicine and surgery. The instruction of junior students in physical signs and elementary laboratory methods, and the systematic demonstrations and lectures for senior students are to be organized by them, although the teaching of these courses is in certain cases given by other members of the staff. Every student is to take duty during his first year for two months' clerking and two months' dressing with the medical and surgical units, respectively. These terms of clerking and of dressing are intended to follow as far as possible a four months term of duty with other members of the staff. Thus, every student will in due course pass through one or the other unit. During his course of two months' duty under the director of the medical unit, the student will be attached for clinical clerking to some of the special departments, such as the cardiographic, under Dr. T. Lewis. The directors of the units and their assistants have ample accommodation and facilities for research work in the Graham laboratories of pathology.

The Vaccination Position

In his report to the late Local Government Board (now merged in the Ministry of Health), the principal medical officer, Sir George Newman, refers to a number of isolated outbreaks of smallpox, comprising 206 cases in all and affecting fifty-eight sanitary areas. Thanks to the anti-vaccination agitation and the recognition by law of the conscientious objector, the percentage of children successfully vaccinated in 1917 was only 43.3, and the percentage exempted from vaccination was as high as 37.9. Compared with twenty years ago, these figures are significant, for in

1898, 61 per cent. of the children were successfully vaccinated and only 5 per cent. were exempted. In the years following the last serious epidemic of smallpox (1901-1904), the percentage of vaccinated children rose above 70. On the other hand, the war has led to a great increase of the revaccinated. Although revaccination was not made compulsory on all men who joined the army, a large proportion were revaccinated. At present a greater number of the male population between 20 and 40 years of age have been revaccinated than in former years. Revaccination has also extended to women, for a large proportion of women who joined the auxiliary services of the war were revaccinated. The position, therefore, is that while the adult population is better protected than before, children are less well protected. In the recent cases of smallpox, prompt notification, speedy isolation and diligent inquiry as to contacts, to secure their immediate vaccination, were successful in preventing the spread of infection. But it is held that such measures cannot be relied on when smallpox breaks out in a population unprotected by vaccination. In prevaccination days, the deaths from smallpox were most numerous at ages under 10, and the majority occurred at ages under 5. The unprotected state of the child population of this country is therefore a great danger.

Tests of Cure in Venereal Diseases

The Ministry of Health has issued a memorandum suggesting tests which should be applied before patients suffering from gonorrhea and syphilis can be considered cured. In the case of gonorrhea, a careful search should be made with the urethroscope for signs of urethral disease. While under examination the patient resumes his ordinary mode of life, sexual abstinence alone being enjoined. On three occasions at intervals of a week he comes for the test. Films are prepared from any moisture obtainable from the urethra, secretions expressed from the prostate and seminal vesicles and centrifugalized urine. On at least one occasion the examination of the films is supplemented by the taking of cultures, and when possible a complement fixation test is performed on the serum. In order to provoke a urethral discharge, the patient is encouraged to resume his usual habits as regards alcohol, pickles, curries, etc. For the same purpose full-sized bougies are passed, and instillations of silver nitrate are made, or a provocative injection of gonorrheal vaccine is given. If all these tests prove negative he is provisionally discharged as cured, but is warned to return should he notice anything suspicious. In the case of women the difficulty of being certain of cure is greater. The tests are best made immediately before or after the periods. Provocative treatment is carried out by the application of 15 per cent. silver nitrate solution to the cervical canal or by vaccine injections. Films and cultures are prepared from the cervical canal and urethra. Culture methods are essential in the female owing to the difficulty of finding the gonococcus in films. Whenever possible, the complement fixation test should likewise be employed.

In syphilis, the time factor is of great importance. When more than four years have elapsed since the original infection, the risk of contagion is minimal. Until this period has elapsed, the patient should report for examination at intervals of one month during the first year and of three months during the second. The examination includes inspection of all surfaces of the skin and mucous membranes, and the Wassermann test. At the end of the first and second years of the treatment, a small provocative dose of an arsphenamin compound is given, and the Wassermann test is performed a week later. If four years have passed since infection, the patient is regarded for all practical purposes as noninfectious. He is advised, however, in his own interest to continue under observation until it becomes probable that the disease has been eradicated.

Marriages

EMORY GRAHAM ALEXANDER to Miss Harriet C. Deaver, both of Philadelphia, February 17.

ABRAHAM JABLONS to Miss Ruth Leona Taylor, both of New York City, January 20.

ALBERT G. MILLER to Miss Katherine E. Frutchev, both of Philadelphia, February 10.

Deaths

Edward Chauncey Register, Charlotte, N. C.; University of the City of New York, 1895; aged 59; editor of the *Charlotte Medical Journal* since 1891; president of the Medical Society of the State of North Carolina in 1906, and the Charlotte Medical Society, and president of the State Board of Medical Examiners from 1898 to 1902; of the American Medical Editors' Association in 1915, Medical Councilors of North Carolina from 1903 to 1906, and of the Tri-State Medical Association of the Carolinas and Virginia in 1915; physician in charge of St. Peter's Hospital, Charlotte; formerly professor of practice of medicine in the North Carolina Medical College, Charlotte; president and chief physician of the Charlotte Sanatorium from 1906 to 1916; one of the most prominent and beloved physicians of North Carolina; died in the Charlotte Sanatorium, February 18, from pneumonia.

John Van der Poel ☉ New York City; College of Physicians and Surgeons in the City of New York, 1881; aged 62; a member of the American Association of Genito-Urinary Surgeons and its president in 1910; a member of the American Urological Association, and a fellow of the New York Academy of Medicine; a member of the staff of New York and Mount Sinai hospitals, and attending genito-urinary surgeon to Washington Heights Hospital; lecturer on obstetrics and later lecturer in clinical genito-urinary diseases in the University of the City of New York; a member of the staff of a hospital at Chateau Annel, France, during the World War; died, February 22.

James Freer Richardson, Winnipeg, Man.; University of London, 1911; M.R.C.S. (Eng.), 1911; L.R.C.P. (Lond.), 1911; aged 35; a medical missionary of the Church Missionary Society at Peshawur, and Dera Ismail Khan, India, who on the outbreak of the World War enlisted and was sent to Mesopotamia as captain of the Thirtieth Advance Casualty Clearing Station, then transferred to Mosul, and later to the Forty-Ninth Indian General Hospital on the Afghan frontier; died in Afghanistan, Nov. 27, 1919, from pneumonia.

Frank James Schoenenberger ☉ New York City; Bellevue Hospital Medical College, 1896; aged 44; adjunct professor of urology in Fordham University, New York City; a member of the New York Academy of Medicine; assistant genito-urinary surgeon to the City and Sydenham hospitals; genito-urinary surgeon to the Correctional Hospital and surgeon to the state penitentiary; died in Roosevelt Hospital, New York City, February 20, after an operation for the removal of gallstones.

Henry Ardagh Kingsmill, London, Ont.; Western University, London, Ont., 1895; aged 52; demonstrator of anatomy in his alma mater; surgeon of the Seventh Regiment Fusiliers, and after the outbreak of the World War president of the standing medical board of western Ontario; then captain, C. A. M. C., with service in England, and later adjutant and registrar of the Military Hospital, London; died, February 11, from pneumonia following influenza.

Philip Thomas Kennedy ☉ Hartford, Conn.; Harvard University Medical School, 1909; aged 36; a specialist in pediatrics; for two seasons in charge of the Boston Floating Hospital; pediatricist to St. Francis' and the Baby hospitals and St Agnes' Home, Hartford; died in St. Francis' Hospital, February 14, after an operation for abscess of the lungs.

Wilford Hall Crutcher, Bartlesville, Okla.; Barnes Medical College, St. Louis, 1908; aged 37; formerly assistant superintendent of the Nebraska State Hospital for the Insane, Ingleside; who served during the World War as lieutenant, M. R. C., U. S. Army, and was discharged, Jan. 27, 1919; died, February 12, from pneumonia.

Arthur Brownell Wright ☉ Hartford, Conn.; College of Physicians and Surgeons in the City of New York, 1895; aged 51; for eight years a member of the staff of the Manhattan Institute for the Insane; and since 1903 chief medical examiner for the Traveler's Insurance Company; died, about February 4.

José Maria Ferrer ☉ New York City; College of Physicians and Surgeons in the City of New York, 1879; aged 62; a native of Cuba; a member of the New York Academy of Medicine; visiting physician to St. Vincent's and French hospitals, New York City; died, February 23, from heart disease.

Joseph Patrick Murphy, Brookline, Mass.; Harvard University Medical School, 1884; aged 58; also an attorney; assistant chief of the division of child hygiene of the Boston Board of Health since 1911; died in the Peter Bent Brigham Hospital, Boston, February 18, from bronchopneumonia.

Dwight Culver Smith, Goff, Kan.; University Medical College of Kansas City, Mo., 1904; aged 41; a member of the Kansas Medical Society; captain, M. C., U. S. Army, during the World War, with service overseas, and discharged, March 7, 1919; died, February 15, from influenza.

Thomas Alexander Lee, Jr., Hibbing, Minn.; George Washington University, Washington, D. C., 1908; aged 36; who served during the World War as lieutenant, M. R. C., U. S. Army, and was discharged, Aug. 15, 1919; died at the home of his father in Washington, February 19.

Albert Mealey Dunlap, Cleveland; Cleveland College of Physicians and Surgeons, 1905; aged 37; lieutenant, M. C., U. S. Army, during the World War, and discharged, Jan. 16, 1919; was taken ill with pneumonia at the home of a patient, and died there, February 10.

George William Brock ☉ Atlanta, Ill.; Northwestern University Medical School, Chicago, 1910; aged 41; who served as captain, M. R. C., U. S. Army, during the World War, and was discharged, March 18, 1919; died, February 17, from an infection following influenza.

John Beriah Ellis, Springfield, Mass.; Bellevue Hospital Medical College, 1871; aged 74; for many years a practitioner of Little Falls, N. Y., and health officer and coroner of Herkimer County; died at the home of his daughter in Springfield, February 10.

Ernest Henry Noyes ☉ Newburyport, Mass.; Harvard University Medical School, 1880; aged 66; city physician of Newburyport; a member of the staff of the Anna Jaques Hospital; died, February 7, from valvular heart disease.

Samuel Dixon Sturgeon, New Galilee, Pa.; Western Reserve University, Cleveland, 1884; aged 69; a member of the Medical Society of the State of Pennsylvania; died at the home of his sister in New Brighton, Pa., February 12.

Willet Jeremiah Herrington ☉ Bad Axe, Mich.; University of Michigan, Ann Arbor, 1882; aged 63; for fourteen years surgeon in chief of the Hubbard Memorial Hospital; died in that institution, February 10, from pneumonia.

John H. Baldwin, Calera, Okla.; Memphis (Tenn.) Hospital Medical College, 1895; aged 60; for two terms a member of the state legislature from Bryan County; died, February 14, from pneumonia following influenza.

Lovick W. Philips, Girard, Ala.; Tulane University, New Orleans, 1861; aged 84; surgeon of the Thirty-Second, Georgia, Infantry, C. S. A., and later captain of cavalry during the Civil War; died, January 22.

Theophilus W. Bennett, Long Beach, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 67; formerly of Lenox, Iowa, and for three terms a member of the Iowa state senate; died, February 3.

Joseph Antoine Beaudry, Montreal; University of Victoria College, Cobourg, Ont.; 1878; aged 67; inspector general of the superior council of hygiene of the province of Quebec since 1888; died, Dec. 2, 1919.

Jeptha Dillon, Fillmore, Calif.; Medical College of Ohio, Cincinnati, 1873; aged 75; once president of the Greenwood County (Kan.) Medical Society, and a practitioner of Eureka; died, February 9.

Loren L. Gray, Powersville, Mo.; Northwestern Medical College, St. Joseph, Mo., 1884; aged 58; a member of the Missouri State Medical Association; died, Dec. 20, 1919, from acute pancreatitis.

Henry Beauregard Disharoon, Roanoke, Ala.; College of Physicians and Surgeons, Baltimore, 1885; aged 59; a member of the Medical Association of the State of Alabama; died, February 11.

Charles A. Wakeman, Tawas City, Mich. (license, Michigan, five years' practice, 1900); aged 66; died at Pinconning, Mich., January 25, from dilatation of the heart due to bronchial asthma.

William J. Willim, Wynne, Ark.; College of Physicians and Surgeons, Keokuk, Iowa, 1882; aged 66; formerly a practitioner of Joplin, Mo., and physician of Jasper County; died, January 21.

John Stanley Thibaut, Donaldsonville, La.; Tulane University, New Orleans, 1883; aged 60; vice president of the Bank of Ascension; died in Touro Infirmary, New Orleans, February 12.

Robert John Gordon, U. S. I. S., Gordon, Wis.; George Washington University, Washington, D. C., 1917; an Indian physician; aged 25; died, February 10, from pulmonary tuberculosis.

John William MacKay, Calgary, Alberta; Western University, London, 1907; aged 39; captain, C. A. M. C.; died, Oct. 25, 1919, from pulmonary embolism following appendectomy.

James T. Douglas, Ferguson, Mo.; Washington University, St. Louis, 1859; aged 84; a member of the Missouri State Medical Association; died in St. Louis, Nov. 29, 1919, from uremia.

George Levi Alexander, Milwaukee; Hahnemann Medical College, Chicago, 1888; aged 54; a member of the staff of Hanover Hospital; died, February 13, from cerebral hemorrhage.

John Wesley Ishmael ☉ Winchester, Ky.; Jefferson Medical College, 1872; aged 70; president of the medical staff of Clark County Hospital; died, February 6, from pneumonia.

James H. Shepperd, Peoria, Ill.; Meharry Medical College, Nashville, Tenn., 1899; aged 54; captain, M. C., Ill. N. G., and assigned to the Eighth Infantry; died, February 10.

Earl C. Rieger ☉ Kansas City, Mo.; University Medical College of Kansas City, Mo., 1906; aged 41; also an attorney; died, January 28, from pneumonia following influenza.

Edgar Parker Hershey ☉ Denver; Jefferson Medical College, 1888; aged 58; once president of the Denver and Arapahoe County Medical Society; died, January 27.

Anna T. Dunn Roe Murphy, Detroit; Michigan College of Medicine and Surgery, Detroit, 1894; a member of the Michigan State Medical Society; died, February 14.

Hannah C. Reinhold, Williamsport, Pa.; State University of Iowa, Homeopathic College of Medicine, Iowa City, 1892; aged 64; died, February 11, from pneumonia.

Robert C. Forsyth ☉ Kirkwood, Mo.; Washington University, St. Louis, 1902; aged 40; died in St. Luke's Hospital, St. Louis, February 8, from influenza.

Jerome A. Heath, Cleveland, University of Wooster, Cleveland, 1884; aged 60; one of the founders of St. Clair Hospital, Cleveland; died, Dec. 10, 1919.

John Paul Golden, Pittsburgh; University of Pittsburgh, 1888; aged 56; a member of the Medical Society of the State of Pennsylvania; died, February 7.

Zenas Cather Clayton, Chicago; Kansas City Hospital College of Medicine, Kansas City, Mo., 1885; aged 62; died, February 10, from heart disease.

William Gage Potter, South Dartmouth, Mass.; University of the City of New York, 1888; aged 55; died, Dec. 18, 1919, from tuberculosis of the lungs.

Irvine Ketcheson Mott, Cincinnati; Pulte Medical College, Cincinnati, 1883; aged 59; died in Covington, Ky., February 7, from cerebral hemorrhage.

George Maurice Stelzleni, St. Louis; Washington University, St. Louis, 1880; aged 58; died, February 14, from pneumonia following influenza.

William John Martin, Philadelphia; Jefferson Medical College, 1881; aged 61; a practitioner of dentistry for many years; died, February 12.

Cincinnatus C. Maddox, Alpharetta, Ga.; Atlanta (Ga.) Medical College, 1880; aged 61; died in a sanatorium in Atlanta, January 6.

Andrew B. Spinney, Ionia, Mich.; Homeopathic Hospital College, Cleveland, 1859; aged 84; an itinerant practitioner; died, February 7.

Robert Edward Bradsher ☉ Marmaduke, Ark.; Memphis Hospital Medical College, 1904; aged 43; died, February 8, from pneumonia.

Louis Kaelin, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1894; aged 62; died, Dec. 29, 1919, from bronchiectasis.

Alexander Franklin Durham, Sparta, Ga.; Jefferson Medical College, 1887; aged 54; died, January 30, from valvular heart disease.

Nelson Gregory Hall, Nut Plains, Conn.; Yale University, New Haven, 1860; aged 86; died, January 15, from senile debility.

Hal Augustine Hardeman, Melrose, Texas; Atlanta (Ga.) Medical College, 1891; aged 60; died, February 3.

Charles Frederick Sporman, Headland, Ala.; University of Alabama, Mobile, 1886; died, January 31.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

GREEN'S DROPSY REMEDY

For some years THE JOURNAL has been receiving inquiries regarding "Green's Dropsy Remedy," put on the market by "Dr. H. H. Green's Sons," Atlanta, Ga. It is now sold by Dr. Thomas E. Green, who claims to be a successor to "Dr. H. H. Green's Sons," and it now comes from Chatsworth, Ga.

The business is a mail-order one. As with others of a similar type, the advertising claims in the past few years have undergone the usual modifications from the "lie direct" to the "lie with circumstance" as the following quotations—italicized by us—will show:

OLD CLAIMS

"Dr. H. H. Green's Sons *Cure Dropsy In All Its Various Forms.*"

"Have *cured* many thousand cases after having been pronounced *utterly* hopeless by eminent physicians."

"The Only Reliable and Successful Dropsy Treatment Known."

"We have *cured* thousands of seemingly hopeless cases."

"We have *cured* many patients after the family doctor had said there was *no* hope for recovery."

RECENT CLAIMS

"Dr. H. H. Green's Sons *Treat Dropsy In All Its Various Forms.*"

"Have *relieved* many thousand cases after having been pronounced *almost* hopeless by eminent physicians."

[Statement eliminated.]

"We have *relieved* hundreds of seemingly hopeless cases."

"We have *entirely relieved* many patients after the family doctor has said there was *little* hope for recovery."

The methods by which the Green concern gets in touch with prospective purchasers are the usual ones: Advertisements in the cheaper grades of magazines and in not-too-particular newspapers. In some cases advertising booklets have been mailed to small towns in various parts of the country addressed to "The Mayor or Any Minister of the Gospel." Those who answer the advertisements (which offer "a free trial treatment") are sent a question blank which must be filled in and returned before the sample is sent. With the sample is a statement to the prospective purchaser to the effect that if he wishes to take a course of "regular treatments" these will cost \$10 or \$15 each, as the case may be.

The "treatment" itself comes in the form of large black balls or boluses which when first sent out are moderately soft but become harder on keeping. One treatment seems to consist of six large boluses and six small ones—even the small ones are heroic in size. In addition, some purchasers receive "Tonic Tablets." The purchaser is directed to take "a large ball dissolved in a little water at nine o'clock at night and a small ball at midnight." At six o'clock the next morning and *every hour* thereafter until eleven a. m. a substantial dose of Epsom salt is to be taken in quantities sufficient to create a large number of bowel movements. This dosing is to be repeated "every other night and day until all dropsical accumulation is removed from the system"! The boluses and tonic tablets were examined by the Association's chemists who have reported as follows:

CHEMISTS' REPORT

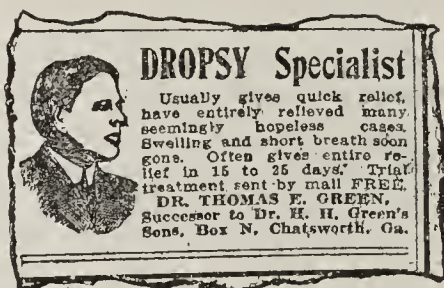
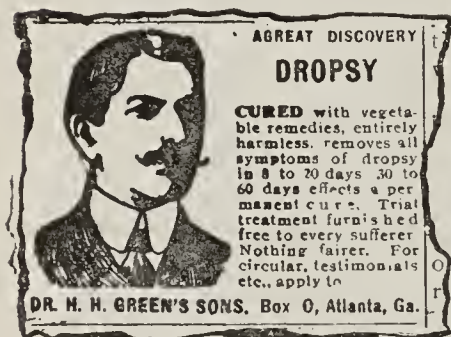
"One 'treatment' of Green's Dropsy Remedy, consisting of large balls or boluses, small balls or boluses and 'Grey Tonic Tablets' was examined. The small balls and the large balls appear to be of the same composition. The masses are brownish-black in color. When first received they were of about the consistence of a stiff pill mass but they became harder on keeping. Iodids, alkaloids, emodin-bearing drugs and magnesium sulphate were absent. The boluses yielded about 4.2 per cent. of ash in which were found iron, calcium, a sulphate and a phosphate, each in small amounts. Microscopic examination revealed the pres-

ence of a vegetable drug which appeared to be powdered squill. The preparation contained a considerable amount of dark colored extractive but this could not be identified. It was darker in color than would be expected from squill. It resembled licorice extract but tests for glycyrrhiza were negative. Reducing sugars were present.

"Examination of the 'Grey Tonic Tablets' failed to reveal any potent drug except an iron salt, equivalent to about 2.65 per cent. of iron. The iron was present in both the ferric and ferrous condition, which would warrant the suspicion that dried ferrous sulphate is the salt used in the manufacture of the tablets. Large quantities of starch and calcium sulphate were present. Alkaloids, iodids and emodin bearing drugs were absent.

"To sum up: The boluses, large and small, appear to contain powdered squill as the chief medicinal ingredient. The tablets contain an iron salt, probably dried ferrous sulphate, as the chief medicinal ingredient."

Obviously there must be no small amount of danger for a person in a dropsical condition to dose and drastically purge himself. Yet, as in all cases of self-dosing, accidents that might follow would seldom be reported and in many instances might be suppressed by relatives who shunned publicity. One physician has reported that he had seen two patients in a state of collapse after taking the Green treatment—whether from the purging or the Green nostrum he was unable to say. Some years ago a newspaper reported the sudden death of a woman following the Green treatment but the coroner's inquest failed to elicit sufficient evidence to place the responsibility for the death on the Green



Facsimiles (reduced) of old and more recent advertising.

product. No necropsy or analysis was made in the case. In the case of another woman who also died suddenly while taking the Green dropsy cure, the local health office sent Green a death certificate advising him that the family declared that he was treating the woman at the time of her death. The only information given in the certificate as returned was the name and age of the woman and the statement that the primary cause of death was "Heart and Kidney trouble producing Anasarca."

Whatever part the Green "cure" may have played in these cases, one thing is certain: The product is one that has no legitimate place among home remedies. The public does not realize that dropsy is a symptom and not a disease and usually a symptom of serious import. For a person suffering from either heart or kidney trouble to attempt to treat himself with powerful drugs for the dropsical condition that may follow is the height of unwisdom. The idea that such serious conditions can safely and intelligently be handled on the mail-order plan without any physical examination of the patient or even seeing the patient is, of course, preposterous.

Deaths from Tuberculosis.—According to official census figures the death rate from all forms of tuberculosis in Wilmington, N. C., had fallen from 272.3 in 1912 to 180.9 per hundred thousand in 1917, which is the last year for which federal figures are available. This annual saving averages twenty-three lives a year for five years from tuberculosis alone. Capitalizing each life at the very low estimate of \$2,000, shows an annual saving of \$46,000, or \$230,000 for the five years, which is an amount greatly in excess of what was contributed both for Red Cross Christmas seals and the health department.—*Our Communal Health*, October, 1919.

Correspondence

CONDITION OF THE OLIVES RESPONSIBLE FOR THE NEW YORK OUTBREAK OF BOTULISM

To the Editor:—In an editorial entitled "Botulism from Ripe Olives" (*THE JOURNAL*, Feb. 21, 1920, p. 530), the following sentence appears relative to the physical characteristics of the olives responsible for the recent outbreak of botulism in New York City, a report of which is printed in the same issue of *THE JOURNAL*: "Although a half bottle of ripe olives, probably the one that contained the toxin, was found in the home of the victims, no statement is made about the physical condition of these olives." The following information might well have appeared in the article:

The three olives received for examination were in a turbid, brownish tinged with red, watery fluid which was very difficult to see through. There was a slight flocculent precipitate in the bottom of the bottle. The olives themselves were lighter in color than ordinary ripe olives, having a tan, buff, almost straw color. They were somewhat spotted, each olive having several distinct black spots in it which stood out sharply from the lighter, general color of the olive, possibly areas from which the normal black color had not yet faded. In addition there were small, whitish, flocculent, irregular, lichen-like spots, giving somewhat the impression of being deposited on the surface, scattered irregularly over each olive. They had lost the shining luster usually seen in normal ripe olives. In consistency they were softer and not so firm as normal ripe olives. They were not, however, actually mushy, and could be lifted out of the bottle on the point of a knife.

The odor, in addition to that of ripe olives, had a weak but apparently quite definite putrefactive tinge. There was no suggestion of butyric acid. There was considerable controversy in the laboratories in New York and Boston as to whether the odor present in the olives could be considered characteristic enough to be of protective value to the average individual. Among those men who had worked with *B. botulinus*, and particularly those who had handled the olives from the Canton and Detroit outbreaks, there seemed to be no question as to the definiteness of the odor. Some of these men were so sure of their sense of smell that they ate olives from bottles of the same brand which were being investigated and which did not hold the suspicious odor. On the other hand, laboratory workers who had not had particular experience with *B. botulinus* were very skeptical and not inclined to feel that the average individual would have refused to eat these particular olives on account of a disagreeable odor. In our own laboratories, even among men who had frequently smelled *B. botulinus* cultures in various mediums, there was considerable controversy.

At present, almost seven weeks after the outbreak, these olives present the same picture, much accentuated in every way. They are now light tan, the black spots are not so numerous (owing possibly to gradual loss of the normal black color as the process of putrefaction progresses), the liquor is perhaps more turbid and deeper in color than it was, and the flocculent precipitate is more abundant. The liquor is covered with a thin, greenish mat of mold. The whitish, lichen-like spots are more numerous than before. The olives are now so mushy that they cannot be lifted on the point of a knife. The odor is much less marked than seven weeks ago. (The bottle has been tightly corked, though not sealed.) It is now a sweetish, spicy, weakly pungent odor, suggestive, but not definitely putrefactive, in character. There is no consensus as to what may be called a "characteristic" botulinus odor. In fact, there is a growing belief that *B. botulinus* does not have a "characteristic" odor any more than other anaerobic putrefactive organisms have. An odor of putrefaction may perhaps, to a greater or less degree, be present, but other than that it seems unwise to say more at present.

DWIGHT L. SISCO, M.D., Boston.

A CABINET OFFICER FOR SUPERVISION OF NATIONAL HEALTH AND EDUCATIONAL PROBLEMS

To the Editor:—Medicine has never been so efficient, so well organized or so thoroughly appreciated as it is now. The power to exercise our knowledge of disease and its control, as shown by our care of the millions engaged in warfare, the use of vaccines, serums and antitoxins by the wholesale, and the results of the surgical treatment of wounds and the prevention of infection, has given the profession a public recognition never before accorded it. This resulted from the enforced medical organization endowed with military authority and opportunity. The examination and supervision of the recruits gave wonderfully valuable information concerning both the lack of supervision of the health of young persons engaged in the occupation of education, and the lack of supervision of education. In our country's rapid commercial advancement we have been glad to use immigrant labor whose cost of production fell on Europe, and little attention was given to the health problems of labor.

In a general way, medical organizations of the past have been wont to criticize the attitude of both the government and the public concerning public health problems, as well as their failure to appreciate the necessity of establishing national standards of medical education and control of medical practice. I have always had a firm conviction that the reward of labor is in a fairly just measure in proportion to what is given; and it is undoubtedly true that medical standards are appreciated by the public as representing the average of medical knowledge so far as the public has had the opportunity to learn of them. Medical men have done little in local or state civic affairs, especially in lines in which they are competent to give advice, that is, education and public health problems. There should be a physician on every school board; also, a member of the city council should be a physician, and local medical organizations should actively support the public health officials. The fact is that the profession is only now ready to do its part in our civic life by reason of these very standards, which have been made as a result of military control of medical affairs and their application. The rapid evolution and advance of medicine in the last few decades has only now made this possible. I feel, then, that there should be no unjust criticism of the President for not appointing on the industrial investigating committees a single physician, large as the personnels have been, although in these conferences there were serious problems of health to be considered in its relation to hygiene, housing, child welfare, food and education, conditions which are properly medical problems.

We now have the greatest power, although it is intangible, which has ever existed, and which may be turned to our aid: that is, the psychic condition that has resulted from the mental concentration of the civilized people of the whole world on war and its problems for a period of five years without a day's intermission. The after-war condition as a result of the mental strain leaves the whole world in a chaos of disorganization and mental instability. In the individual we would call the condition a neurosis. We should take advantage of this psychic condition in our reconstruction problems along educational and public health lines, which are now matters of general discussion in this country, so as not only to serve the people of coming generations but also to maintain the present prestige of medicine. The many bills now before Congress in which the real motive is a health problem show the deep public concern.

In Washington, where medical standards and health problems should be representative, I found after nearly two years' residence that, so far as the government is concerned, medical affairs are most incoordinate. Laws controlling health problems, which have divided medical affairs among every cabinet bureau and numerous committees and boards, numbering about eighteen in all, have been passed as riders on necessary bills and appropriations. These boards seriously overlap in the conception of their functions, and there is apparently no way of securing coordination, although in their general activities much good is accomplished. The

largest service is the Public Health Service under the Treasury Department; under Labor is Child Welfare, Prevention of Industrial Accidents and special boards; under the Department of the Interior is the care of the insane, not otherwise looked after and the Board of Indian Affairs; under Commerce, all statistical records relating to health and mortality, acceptable from about thirty-four states; under Agriculture, the Food and Drugs Act. I mention these few to show the condition. Rather lavish appropriations are made by the government for all the hospitals in Washington, and an equal amount by the board of the District of Columbia. All in all, a sufficient amount is thus expended locally to make government officials feel that they are doing much for the care of public health. Congress stands ready to help in the emergency of sickness like the recent influenza epidemic, when half a million dollars was appropriated for its control, it being much easier to give than to spend wisely.

With the high cost of labor and its rapid turnover, industrial organizations have taken every precaution to look after the health, housing, child welfare and social life of their industrial workers, to them an economic problem. The greatest industry of our country today is education, and we have learned from the examination of our draft recruits that there has been little care in general given to child welfare or to the protection of the health of the youth of our country thus engaged. The national need today for Americanism is intelligent supervision, with authority, of both education and public health, and the most important problem is that of health. While it may not be possible to secure a bureau chief for each, it should be possible to secure an official who would have supervision of health in the United States and coordinate the multitude of health problems now existing, as well as having the supervision of education.

CHARLES H. MAYO, M.D., Rochester, Minn.

DESTRUCTION OF B. BOTULINUS TOXIN BY BOILING RIPE OLIVES

To the Editor:—A number of deaths in various sections of the country have been attributed to poisoning due to toxin formed by *Bacillus botulinus* in canned ripe olives. This toxin is readily destroyed by heat. The flavor of ripe olives is not materially affected nor is the texture destroyed if the olives are boiled for fifteen minutes in the liquid in which they are preserved. This amount of heat is sufficient to destroy the toxin, and the product can be eaten with safety. This method will also exaggerate the odor of decomposition and tend to discourage the serving of olives partially spoiled. In every instance the olives were said to have a "queer odor." This is a simple method, easily applied, and would seem to eliminate the danger from eating ripe olives.

M. GRUNFIELD, Albuquerque, N. M.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF TATTOO MARKS

To the Editor:—During the war, thousands of Armenian girls and children were taken by Turks and Kurds, and their faces tattooed. Now some of them have been brought back as refugees to their parents with their faces bearing these ugly tattoo marks. Please describe a method of treatment for removing these marks without leaving any scar.

DR. M. HOVNERIAR, Aleppo, Syria.

ANSWER.—Replies to this question have appeared several times in Queries and Minor Notes. The methods of Variot and Brault have been recommended. The principle in each is to excite an inflammatory process by means of chemical irritants so as to cause destruction of the superficial layers of skin.

Variot uses as an irritant silver tannate produced by tattooing in a strong solution of tannin and rubbing a silver

nitrate pencil over the spot until it is blackened by the formation of silver tannate.

Brault removes the marks by tattooing the surface with a solution of 30 parts of zinc chlorid to 40 parts of water. A slight crust forms after these applications, the spontaneous removal of which after two weeks is followed by a pink cicatrix which gradually becomes of normal color.

The method is also described in practically all textbooks on diseases of the skin.

MALLORY'S EOSIN AND METHYLENE BLUE TISSUE STAIN
—VLEMINCKX' SOLUTION

To the Editor:—Please supply me with (1) the formula and technic for Mallory's eosin and methylene blue tissue stain; and (2) the formula for Vleminckx' solution. I find frequent references to these items, but am unable to find the formulas and technic in any of my books.

MILES J. BREUER, M.D., Lincoln, Neb.

ANSWER.—1. A formula and technic for the eosin and methylene blue tissue stain may be found in Mallory, F. B., and Wright, J. H.: Pathological Technique, Ed. 6, Philadelphia, W. B. Saunders Company, 1915, p. 328.

The instructions given there are as follows:
Fix in Zenker's fluid.

Stain paraffin section in 5 per cent. aqueous solution of eosin for twenty minutes or longer. To get a deeper eosin stain place the sections in the paraffin oven for from fifteen to twenty minutes.

Wash in water to get rid of the excess of eosin.
Stain in Unna's alkaline methylene blue solution diluted one part to four or five parts of water for ten or fifteen minutes.

Wash in water.
Differentiate and dehydrate in a dish of 95 per cent. alcohol, keeping section in motion to decolorize uniformly. Control results under the microscope; when pink color has returned to the section and the nuclei are still deep blue, finish dehydration quickly with absolute alcohol.

Xylene.
Xylene balsam.
For celloidin sections use 95 per cent. alcohol, blot, and pour on xylene; repeat the last two steps until the specimen is clear.

Unna's alkaline methylene blue solution consists of methylene blue, one part; potassium carbonate, one part; water, 100 parts. For staining, the solution should be diluted 1:10 or 1:5; ripening the solution for a week improves the results.

2. The formula for Vleminckx' solution was published in THE JOURNAL, Jan. 24, 1920, p. 268.

STANNOXYL: A TIN PREPARATION

To the Editor:—I am very anxious to know whether tin or stannous oxid (SnO) has or has had any place among useful drugs. I have seen such a prescription given in the treatment of mucous colitis, and would be very glad to learn what its use may be.

CARLOS MANUEL GARCIA, M.D., Havana, Cuba.

ANSWER.—Recently, on the assumption that tin workers are less troubled with boils than the average person, two French investigators proposed the use of tin compounds in the treatment of staphylococcic infections. Based on their work, a proprietary preparation—StannoxyL—has been placed on the market which is claimed to be "composed of stannous oxide and specially purified metallic tin." Absurd claims are made for the product; for instance: ". . . We have no hesitation in offering STANNOXYL—in Tablets or Cachets—as the only true specific for diseases of Staphylococcus origin." The available evidence is unconvincing and in no way warrants such exaggerated statements.

Industrial Physician.—The industrial physician of the future must be able to interpret industrial processes, understand the operation of mechanical appliances, size up the human requirements for filling a certain job, make scientific studies of the hazards of occupations, make certain that proper working conditions are provided for the industrial population, and interpret these findings in terms of increased production, decreased labor turnover, and healthier and happier workers. He should also be able to tune up the home, community and industrial environment so that each would bear its part of carrying forward the great commercial life of the Nation.—F. L. Rector: *Public Health Rep.*, Jan. 9, 1920.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

- ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.
- COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
- CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.
- DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.
- FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.
- IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.
- IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.
- MAINE: Portland, March 9-10. Sec., Dr. Frank W. Searle, 140 Pine St., Portland.
- MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.
- MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lorry Bldg., St. Paul.
- MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.
- NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.
- OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.
- RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.
- WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Oregon July Examination

Dr. Frank W. Wood, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, July 1-3, 1919. The examination covered 11 subjects and included 90 questions. An average of 75 per cent. was required to pass. Twenty-seven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Bennett College of Eclectic Med. and Surg.	(1906)		1
Rush Medical College	(1919)*		1
University of Illinois	(1913)		1
Keokuk Medical College	(1895)		1
College of Physicians and Surgeons, Baltimore.....	(1891)		1
Harvard University	(1916)		1
Kansas City University of Phys. and Surgs.	(1919)		1
University Medical College of Kansas City	(1908)		1
Lincoln Medical College	(1917)		1
Fordham University	(1917)		1
University of Oregon	(1908), (1918, 3), (1919, 6)		10
Jefferson Medical College	(1912), (1917)		2
Medico-Chirurgical College of Philadelphia	(1916)		1
University of Pennsylvania	(1894)		1
Marquette University	(1919)		1
McGill University	(1902)		1
University of Amsterdam	(1910)†		1

* Received certificate of four years' work; will receive M.D. degree on completion of intern year.
† Graduation not verified.

Wisconsin October Meeting

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports that 3 candidates were licensed by reciprocity and 17 candidates were licensed by virtue of a commission in the Medical Corps, at the meeting held Oct. 27, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College	(1919, 2)		Illinois
St. Louis University	(1917)		Missouri

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago Homoeopathic Medical College	(1897)		U. S. Army
Hahnemann Medical College, Chicago	(1916), (1917)		U. S. Army
Northwestern University	(1909), (1916, 2)		U. S. Army
Rush Medical College	(1916, 2)		U. S. Army
University of Louisville	(1917)		U. S. Navy
University of Minnesota Medical School	(1912), (1917)		U. S. Army
Washington University	(1916), (1917)		U. S. Army
Columbia University	(1917)		U. S. Navy
New York Homeopathic Med. Coll. and Flower Hosp.	(1917)		U. S. Army
University of Pennsylvania	(1916)		U. S. Army
Vanderbilt University	(1915)		U. S. Army

Book Notices

REPORT ON THE PRESENT STATE OF KNOWLEDGE CONCERNING ACCESSORY FOOD FACTORS (VITAMINES). Medical Research Committee, Special Report Series. No. 38. Boards. Pp. 103, with illustrations. London: His Majesty's Stationery Office, 1919.

This gives an excellent summary of our knowledge of these unknown essential substances, which go by various names and are concerned in different clinical conditions. A sentence selected from the introduction emphasizes our need for future investigation in this field, and expresses well the feeling of all investigators of this topic: "The practical importance of the facts will not be understood unless it be recognized that a deficiency in food, which when complete or extreme leads to actual disease, may, when only relative, be responsible for ill health of a vague but still important kind." The accessory food factors are classified according to the division made by McCollum, that is, fat-soluble A and water-soluble B, evidence being set forth that the latter is identical with the antiberiberi factor. In addition, the antiscorbutic vitamin is given an equally prominent place as a third distinct factor. The chemical and resistant properties and the distribution among foodstuffs of each are discussed. In the table on the protective value of various foodstuffs against scurvy, the tomato is not included. Since Hess has demonstrated the value of this food as an antiscorbutic, it ought to appear in such a table. Two instructive chapters on the application of experimental work to the practical problems of adults' and infants' diets give many useful data for the dietitian. Rickets is classified as a deficiency disease in which the antirachitic factor has a possible identity with the fat-soluble A factor. Pellagra is likewise considered a deficiency disease, but one in which the underlying cause is more or less undetermined. The appendix is a guide for those who wish to know what foods are rich in the accessory food factors, and gives instructions on the prevention of the well-known deficiency diseases.

PRÄTIKUM DER MEDIZINISCHEN CHEMIE. Einschliesslich der Forensischen Nachweise für Mediziner und Chemiker. Von Dr. Sigmund Fränkel, Professor der Medizinischen Chemie an der Universität in Wien. Paper. Price, 18 marks. Pp. 439, with illustrations. Berlin: Urban & Schwarzenberg, 1918.

By those familiar with Fränkel's "Arzneimittelsynthese," the Praktikum der medizinischen Chemie will be examined with interest. The book aims to be sufficiently comprehensive to be used as a guide book in the instruction of physicians and chemists who desire more than usual knowledge of pure and applied medicinal chemistry. It contains methods for qualitative and quantitative inorganic analysis, the detection and analysis of many organic substances used in medicine, and the methods used in physiologic, pathologic and forensic chemistry. In a work of less than 450 pages the subdivisions in such a comprehensive task must necessarily be brief; yet no subject important to the field appears to have been omitted. The methods are given without much discussion concerning the interpretation of results, the latter being left to the teacher and analyst using the book. No bibliography is given, although usually the methods are described under the author's name. The work should prove useful to the chemists of municipal and public health laboratories, but will not be of much value to practicing physicians.

ANAPHYLAXIS AND ANTI-ANAPHYLAXIS AND THEIR EXPERIMENTAL FOUNDATIONS. By A. Besredka, Professor at the Pasteur Institute. Preface by Dr. E. Roux. English Edition by S. Roodhouse Gloyne, M.D., D.H.P., Pathologist, City of London Hospital for Diseases of the Chest, Victoria Park. Cloth. Price, \$2.25 Pp. 143. St. Louis: C. V. Mosby Company, 1919.

For a monograph of 130 pages this book is abundantly introduced, there being four introductions, one each by Vaughan, Roux, the author and the translator. It is principally valuable as summarizing the important work of Besredka and his associates on anaphylaxis up to a time shortly before the war. There is a brief chapter by the translator which purports to bring the work up to date, but

it is by no means complete or adequate in this respect. It is far from being a full statement of our present knowledge of this subject but does give much information in a very readable form. Besredka is among those who hold that there is no anaphylactic poison or anaphylatoxin, believing that the antibody makes possible the entrance of the antigen into certain nerve cells, where it causes the observed disturbances. He discusses at particular length the resistance conferred to man or animals by injection of a nonfatal dose, for which condition he uses the term "antianaphylaxis," although the term "desensitization" is to be preferred. The work is attractively written and well translated, although there are several errors to be noted.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA AND ON THE NATIONAL FORMULARY FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1915. By A. G. DuMez. Hygienic Laboratory Bulletin No. 118. Paper. Price, 35 cents. Pp. 456. Washington: Government Printing Office, 1919.

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA AND ON THE NATIONAL FORMULARY FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1916. By A. G. DuMez. Hygienic Laboratory Bulletin No. 119. Paper. Price, 20 cents. Pp. 316. Washington: Government Printing Office, 1919.

Reviews of this annual volume have appeared in THE JOURNAL from time to time. The digests were formerly prepared by M. I. Wilbert, who died in 1916. The interruption caused by his death and the selection of a successor delayed the appearance of the 1915 volume until now, so that the volumes for 1915 and 1916 have appeared simultaneously. A part of the manuscript on the former volume had been prepared by Mr. Wilbert, and Dr. DuMez has continued the compilation according to the system inaugurated by his predecessor. The digests contain not only the abstracts of criticisms that have been made on drugs that are described in the U. S. Pharmacopeia and National Formulary, but also comments on all kinds of substances that are used in medicine or which are likely to be so used. The abstracts are unbiased, commendatory and condemnatory comments being given equal prominence. The physician or pharmacist who owns the work has at his command the consensus on the therapeutic status of drugs, as well as their market quality, tests for their identification and purity, and methods for making their preparations. Within certain limits for free distribution, copies may be obtained by application to the Surgeon-General of the Public Health Service, Washington, D. C. They may also be obtained at a nominal price from the Superintendent of Documents, Washington, D. C.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago, and Frederick Peterson, M.D. Ninth edition. Cloth. Price, \$7 net. Pp. 949, with 350 illustrations. Philadelphia: W. B. Saunders Company, 1919.

The authors state that no radical changes have been made in the new edition, and that they are suspending judgment concerning certain advanced views until time and experience have determined whether or not these matters are to become established. The subjects of general paresis and traumatic insanity have been rewritten. There is brief mention of the newer views concerning lethargic encephalitis. The work is a standard text of well merited popularity.

THE OPERATIVE STORY OF GOITER. The Author's Operation. By William S. Halsted. The Johns Hopkins Hospital Reports, Volume 19, Fasciculus 2. Price, \$3.50. Paper. Pp. 257, with illustrations. Baltimore: Johns Hopkins Press, 1919.

As might be surmised from a glance at the title, in this book is presented a historical account of the development of the operative treatment of goiter. It brings out in a striking manner the enormous influence of the introduction of general anesthesia, and with it a more deliberate method of operating; of the development of aseptic technic, and of a third factor of which little is written, namely, the invention of the artery clamp. Hemorrhage, with or without infection, was the cause of death in most of the early strumectomies, and it might almost be said that the invention of the artery clamp made goiter operations possible. To the shallow faddist who gets his information from the advertising pages of his med-

ical journals, and whose chief aim therefore is to be "up to the minute," this book will make no appeal; to the earnest student of surgery, to the man who appreciates broad, deep foundations, to the real builders in medicine, it will afford inspiration to increased effort and better work.

Social Medicine and Medical Economics

THE PHYSICIAN'S BURDEN UNDER WORKMEN'S COMPENSATION ACTS

M. L. HARRIS, M.D.
CHICAGO

The physician, as a rule, gives too little attention to the affairs of life outside his own line of work. Even when the matter is one that concerns him more or less directly, he seldom gives it sufficient thought or study to protect his own interests, and he often submits to injustice uncomplainingly rather than take the time and trouble to assert his rights.

This characteristic indifference of the profession is well known to legislative bodies, and as a result, when economic questions in which the physician should be interested are before these bodies for legislative action, the profession receives little or no consideration and, in fact, is often not even consulted. I need not now take the time to analyze the reason for this persistent indifference of the profession to matters of this kind, but will simply state that in many instances it has resulted in great detriment to the welfare of the people as a whole and to the medical profession in particular.

THE WASHINGTON WORKMEN'S COMPENSATION ACT

A good illustration of what amounts almost to contempt of the medical profession is shown in the first workmen's compensation act which was passed by the state of Washington in 1911. As is well known, workmen's compensation laws were enacted for the purpose of providing some compensation to workmen for injuries arising out of and in the course of their employment.

The first thing that an injured person needs in the way of compensation is medical attention for his injuries; but in the Washington act, not only was no provision made for paying a physician for his services to the injured, but many onerous duties were thrust on him which he was obliged to perform gratuitously. Naturally, the physician is the first person who is usually called when a workman is injured, and under the law he was required to make out an elaborate report of the case on blanks furnished for the purpose and send these to the industrial commission. On the blank form the following note was printed:

This form should be made out and forwarded to the office of the commission in Olympia as soon as the surgeon has made such careful examination as will enable him to make an intelligent report of the case. No fee is paid for making out this blank, but the commission respectfully urges the cooperation of attending physicians in getting the real facts of each case before it. N. B. Your patient cannot receive any compensation from the state until this form is received and passed upon by the chief medical officer of the commission.

How gently the physician is sandbagged into making out his report for nothing: no report, no money for the injured workman—the inference, of course, being: no money for the patient, no money for the physician. When the patient was discharged by the surgeon, the surgeon was obliged to make out another elaborate report and send it to the office of the commission. In this report, in addition to other facts, the physician was required to state the cost of medical and surgical treatment, cost of medicine, medical and surgical supplies, cost of crutches and apparatus, hospital charges, ambulance charges, and cost of nursing. There was still

another "form of surgeon's special report with charts," to be made out and sent to the commission; and finally, in case of death, the physician was obliged to fill out and file "form of proof of death by physician." In addition to his duty as a physician, the law stated:

... and it shall be the duty of the physician to inform the injured workman of his rights under this act and to lend all the necessary assistance in making out his application for compensation and such proof of other matters as required by the rules of the department without charge to the workman.

Commenting on this last section, the industrial board naively remarked that what the physician does is simply a duty which he owes to the state; hence no payment is allowed therefor. The physician must not only take care of the injured workman, but under the act he was made the agent of the commission for the purpose of collecting and furnishing it with information, and was made the legal adviser of the injured workman and had to inform him of his rights under the act and "assist in making such proof of other matters as required by the rules of the department," for all of which services he was not only not allowed any compensation by the state, but was prohibited from making any charge to the workman for the simple reason that it was all a duty which he owed the state.

In order that physicians might not delay in performing their "duty to the state," the law provided that any person who fails to furnish the information and reports required by the commission shall be deemed guilty of a misdemeanor, the penalty for which is imprisonment in the county jail not to exceed ninety days or by fine not to exceed \$250. This would certainly be amusing were it not a fact and were it not of such vital importance to the economic welfare of the profession. When did it become a "duty which the physician owes the state" to work for nothing? When did it become a duty of physicians to give legal advice to injured workmen and to assist them in making out their claims for compensation and to assist them in furnishing proof of such other matters as may be necessary, and all without recompense? It seems that in the state of Washington it was thought that the physician owed it to the state to work for nothing, and was encouraged to do it under a penalty of ninety days in the county jail or a fine of \$250. If the physician is only meek and lowly enough he will soon have sufficient duties and obligations thrust on him by the state so that he will eventually be able to work his way into the state poorhouse. Such an absurd law as the Washington workmen's compensation act of 1911 never could have passed had the physicians been alert to their own welfare. It took some years to change that law so that the medical profession was given some consideration.

PRINCIPLE UNDERLYING WORKMEN'S COMPENSATION LAWS

While no other state has passed such a shameful workmen's compensation law as the Washington act of 1911, in the majority of the states the physician under workmen's compensation acts is meekly performing "the duty which he owes to the state" by caring for injured workmen for nothing. The fundamental principle underlying workmen's compensation acts is that the industry should bear as part of the cost of production the expense incident to injuries to workmen arising out of and in the course of their employment. In other words, the workman is to be looked on as a part of the general machinery of the industry and, like any other piece of machinery when injured, he should be repaired if possible, the cost of the repairs to be charged to general operating expense. The only difference between the human machine—the workman—and the inhuman machine is that the human machine loses his earning power while laid up during repairs, but must live at an expense to himself; hence he is allowed as part compensation a certain percentage of the wages he was earning when injured to tide him over until

he is again able to earn as before; or in case he is permanently incapacitated, until a predetermined amount has been paid to him.

It will be granted that the principle underlying workmen's compensation laws is sound. All state legislative bodies in enacting such laws recognize the principle that the burden of caring for accidental injuries to workmen arising out of and in the course of their employment is a legitimate expense of the industry chargeable to production. Such being the case, why is it that the majority of the workmen's compensation acts, which are based on the principle just announced, deliberately take a large part of the burden off the industry or the employer, and put it on the medical profession? Why should the medical profession, which has nothing to do with production, be compelled by law to assume a large part of the expense of caring for injured workmen, which expense, the same law announces on principle, should be borne by the industry or the employer? If the principle is correct, then the employer should pay all the expense and not a part of it while the physician pays the balance. How is it that the physician is obliged to assume without remuneration a large part of the expense of caring for injured workmen under workmen's compensation acts?

HOW IT WORKS OUT

In defining the amount and terms of the compensation to be paid, the acts state that the injured workmen shall receive medical and surgical care, including drugs, medicines and surgical appliances, hospital care and nursing, however, not to exceed \$100, or \$200, as some states have it. Any intelligent person knows that \$100 or even \$200 will not pay hospital and nursing bills and the expense of drugs, medicines and surgical dressings and appliances, and leave anything for the physician in a serious injury requiring one or more surgical operations and several weeks' careful attention. What happens is something like this:

A workman is injured, and a physician is called and told to do everything he can for the patient. It is necessary to have him removed to a hospital, and perhaps a serious operation must be performed, such as an amputation of a leg or, what even is more difficult, the repair of a bad compound fracture with the necessary subsequent care, etc. The hospital has its bills paid weekly, and after a time the physician sends in a bill, possibly, on account. He shortly receives a letter from the employer, who seems quite grieved to think that he should be sent a bill, for he has already paid the bills at the hospital, amounting to so and so much, which of course he thought included medical and surgical services. When informed to the contrary, he comes back with the statement that he has already paid all that the law requires, namely, \$100 or \$200, as the case may be, and has therefore discharged his liability and that the physician will have to look to the injured person for his bill. As the man is out of employment for many weeks or months on account of his injury; as the cash compensation which he received was barely sufficient to keep his family in food while he was laid up; as he is back in house rent and other necessary living expenses, and as he was working under the compensation act which he supposed paid for medical care when injured, the physician is left, as is said in the vernacular, "to hold the bag."

Another way in which some of these cases work out is this: A man is injured and the physician is called as before. When the bill is sent to the employer the physician is informed that the employer is insured in the X Y Z accident insurance company, to which the physician is referred. The insurance company asks the physician kindly to fill out numerous blanks giving all the details of the accident, the character and extent of the injuries, the duration of the disability, if any, etc., and

when it has obtained all the free information it desires out of the physician it breaks the news to him that it has already paid hospital bills, etc., to the extent required by law and that it has no further liability in the case. Or if the insurance company cannot hide behind that technicality, it asks the physician for the amount of his bill so as to have it on record, and then informs the physician that the rules of the home office require that all doctors' bills be fully itemized, and that it will be necessary for him to itemize his bill, setting forth the exact charge made for first aid and for every subsequent attention and exactly what was done each time. When this is done the reply comes back that the company allows only so much for first aid, so much for this operation and that, and so much for subsequent care, etc., which fees are about 30 per cent. of what they should be for the work actually done, and the physician may accept that or not as he likes.

NEED OF COOPERATION BY PHYSICIANS TO SECURE JUSTICE

These are merely some of the ways physicians are carrying, without remuneration, a large part of the burden of workmen's compensation acts which should fall on the industries. And they will be obliged to submit to this imposition and to carry this burden, and others which seem imminent in the way of compulsory health insurance acts, unless they wake up and are willing to cooperate to secure common justice.

Medicolegal

Privilege as to Physician Employed Prior to Injury

(*Hirschberg v. Southern Pac. Co. (Calif.)*, 183 Pac. R. 141)

The Supreme Court of California, in affirming a judgment in favor of the plaintiff, in this action to recover damages for personal injuries, holds that, under the statute with regard to privileged communications which was in force when the cause of action arose, the plaintiff did not, by testifying as to her injuries and by permitting a physician who treated her for them to testify regarding them, waive her privilege with reference to a physician who had treated her several years before her injury. The court says that it has been held that if a patient offers the testimony of one of several physicians attending the case at the same time, or who were present at a consultation, the privilege has been waived, so that the testimony of all of them will be received. Likewise, when different physicians have treated the patient at different times for the same injury and the patient calls one of the physicians to testify, it has been held that this constitutes a waiver as to all the physicians. But the court has found no authority supporting the contention in this case that because the plaintiff and her physician testified fully as to her condition after her injury, the ban of privilege was thereby waived as to information acquired by another physician while acting as her physician several years prior to the injury complained of. Nor does the court think that it ought to hold otherwise in this case than as stated, although the tendency of the decisions in recent years has been toward a less liberal application of the ban of privilege, and in California privilege in cases of damages for personal injuries has been abrogated since this cause of action arose (*Statutes of 1917*, p. 954).

Evidence of Violating Harrison Narcotic Law

(*Thompson v. United States (U. S.)*, 258 Fed. R. 196)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment of conviction of defendant Thompson of violating the Harrison Narcotic Law, says that a careful reading of the testimony was convincing beyond a doubt that the defendant, under the cloak of a practicing physician, sold narcotics, and not in the regular practice of

his profession for the purpose of curing addicts, and it was the duty of the trial court to submit the issues of fact to the jury, whose finding was conclusive in this court. It was assigned as error that physicians were permitted to testify as experts as to the well-recognized methods among the medical fraternity of treating persons addicted to the use of narcotic drugs for the purpose of curing them of the habit. Such evidence was admissible, but not conclusive. If physicians and the others mentioned in the exceptions of Section 2 can sell and dispense these narcotics, regardless of the fact whether it is done in good faith for the relief of a patient, then the moral object of the act is entirely defeated. It certainly cannot be claimed that a physician selling these narcotics, not in good faith, for the purpose of securing a cure of one suffering from an illness, or to cure him from the morphin habit, is doing so "in the course of his professional practice only," as prescribed by the express language of the act. For the purpose of establishing the intent and bad faith of the defendant, the testimony of other witnesses to having purchased narcotics from him, without his personally attending them, he sending the narcotics to them by express, they living in other states, was admissible. The defendant requested that the jury be instructed that under the act of Congress a physician cannot be convicted for dispensing the prohibited narcotics in the treatment of a patient, whose application is made by letter, and although the physician never comes into personal contact with such patient, provided he reduces the amount on each succeeding shipment of morphin, and furnishes it as in treatment for a morphin habit, in the course of professional practice only. But this requested instruction was in conflict with the act. It lacked two indispensable conditions: first, that the physician furnished the drug in good faith; and, second, that he made and kept the required record.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting, held Feb. 19, 1920

The President, DR. GEORGE DAVID STEWART, in the Chair

The Prevention and Serum Treatment of Lobar Pneumonia

DR. RUSSELL L. CECIL: The old theory was that most persons carry pneumococci in the upper respiratory tract, and that with lowered resistance autogenous infection occurs; more recent studies indicate that the normal mouth rarely harbors a virulent type of pneumococcus except when the person has been exposed to the disease, Types I, II and III being rarely found in healthy persons except among physicians and nurses who have been caring for some one with the disease. In the treatment of pneumonia, the patient should be isolated. Everything that has come in contact with him should be sterilized. Prophylactic vaccination may possibly offer more effective protection against pneumonia than is afforded by sanitary measures. Observations were

made as to the value of prophylactic vaccination against Types I, II and III pneumonia at Camp Upton, where about 40 per cent. of the camp strength of 12,500 men were vaccinated and 60 per cent. remained unvaccinated. Those vaccinated received three injections of a pneumococcus saline vaccine of Types I, II and III, the first dose being 3 billion, the second 6 and the third 9 billion. The plan was to keep the men under observation for five or six months; but they departed at the end of ten weeks, during which time no case of pneumococcus Type I, II and III infection developed among the men who had received the three inoculations of the vaccine. There were only seventeen cases of pneumonia of all types among those receiving the vaccines, while there were 173 cases of pneumonia among the unvaccinated. Among the unvaccinated the mortality was 28 per cent., as against 11 per cent. among the vaccinated.

Further experiments at Camp Wheeler under somewhat different conditions, and with the use of a lipovaccine instead of the saline vaccine used at Camp Upton, indicated that the lipovaccines did not possess so great a degree of antigenic action as the saline vaccine. Here there were under observation about 16,000 men, 80 per cent. of whom were vaccinated against Types I, II and III pneumonia. Among the vaccinated there were thirty-two cases of pneumonia, and among the unvaccinated, forty-two cases. The mortality among the vaccinated was 21.7, and among the unvaccinated, 22.3. In connection with the use of the lipovaccines, it was found that the antibodies did not develop until a week after vaccination. A revision of their figures on this basis showed eight cases of pneumonia of the types vaccinated against.

Dr. Blake and I have conducted animal experiments at the Army Medical School at Washington with a view to confirming these results. The monkey is especially suited to such investigation, as it has pneumonia almost like man. When given large doses of the pneumococcus the monkey always died, and at necropsy the same kind of consolidation of the lung was found as in man. We were able to protect monkeys with vaccine made from living cultures of pneumococci, but with the killed cultures we have not been able to get a satisfactory immunity. When, however, large doses of killed culture were administered in three subcutaneous injections, none of the monkeys thus protected by vaccination got pneumonia, but the controls did. Experiments on Philippine monkeys showed them much more susceptible than the rhesus monkey. Small doses of pneumococcus vaccine given intravenously to rhesus monkeys gave complete protection. These experiments gave a rational basis for human pneumococcus vaccination. The reactions following these injections were about the same as those following antityphoid inoculations, but larger doses were required. There is certainly indication for vaccination against pneumonia in the army, in recruiting stations, during epidemics of influenza, in institutions, and in outdoor workers. It is perhaps also indicated for nurses, physicians and hospital attendants exposed to pneumonia, and in persons subject to repeated attacks of pneumonia. Vaccination against pneumonia is contraindicated in those suffering from pulmonary tuberculosis and in acute respiratory infections. Type I antipneumococcus serum is effective against Type I pneumonia, and by its use in the work at the Rockefeller Institute the mortality of that type of pneumonia has been reduced from 30 to about 7 per cent. All the monkeys treated with Type I serum recovered, though they had been infected with lethal doses of Type I culture. The controls died. If serum was given early, the disease was practically aborted.

DISCUSSION

DR. FRANCIS G. BLAKE: This study of prophylactic vaccination in influenza and pneumonia offers great hope of supplying us with the means of preventing pneumonia, at least to a certain extent. These experiments have brought out three points very definitely: 1. The importance of beginning treatment early, a point which cannot be too strongly emphasized. The serum treatment should not be regarded as a last minute effort to rescue the patient from the grave, and that is the general rule in any disease treated by serum. 2. There should also be a great deal of enthusiasm in maintaining persistent treatment at least three times a day and

not desisting until the patient is well. 3. Even though, through unavoidable circumstances, treatment cannot be begun early, it should always be tried in the hope that severe cases may be saved as in the monkeys.

DR. HENRY T. CHICKERING: In the clinical study of pneumonia, Dochez and others have found that immune bodies and agglutinins last for only a short period; but these may not be the only index of immunity. It is important to emphasize the advantage of early use of the serum. If one is able to type the case within forty-eight hours of the chill and there are signs of incomplete consolidation, one or two treatments with the serum may be sufficient, whereas later on eight or ten treatments will be required. The time to get the sputum is at the first examination when, in attempts at deep breathing during percussion, coughing and expectoration are usually started. Treatment should be continued as long as the temperature is above 101 F. and one is certain it is not due to complications. There is an impression that empyema occurs more frequently in pneumonia cases treated with serum than in those not receiving this treatment, and it has been observed that empyema is rather infrequent in Type III pneumonia. The reason is that, in the severe cases of Type III pneumonias, death usually supervenes before the empyema stage is reached. When serum is used, more of the cases are saved and reach the empyema stage. In working with mice, it has been observed that there are certain maximum doses of pneumococci above which the serum exerts no effect. The same thing is probably shown in patients seen late when seventy-five or a hundred colonies of the pneumococci are found in the field, and in whom serum, even if given persistently, has no apparent effect, the patient dying either of pneumonia or of some complication.

DR. RUSSELL L. CECIL: My impression is that pneumococcus immunity lasts several months, and that it will be necessary to repeat vaccination every year in order to give protection during the season when pneumonia is prevalent. This is a subject we expect to investigate in the near future. There seems to be no relation between the degree of immunity and the amount of protective substance in the serum of the monkeys. An argument against the influenza bacillus as a cause of influenza is that it is difficult to obtain this organism by culture. We have found that with monkeys the influenza bacillus in some instances appeared and then suddenly disappeared, and that it spread rapidly from one part of the respiratory tract to another.

Relation of the Influenza Bacillus to Influenza

DR. FRANCIS G. BLAKE: None of the objections usually raised can be maintained as valid reasons for abandoning the conception of the possible etiologic importance of the Pfeiffer bacillus in relation to influenza, since it is well known that many bacteria whose etiologic relationships to various diseases affecting the respiratory tract is fully established may be found in the upper respiratory tract of healthy persons, and are often found in association with other pathologic conditions than those which they commonly cause. It has been thoroughly established that *B. influenzae*, at least certain strains of the organism, may be pathogenic for man, since it has been found as the only organism present in cases of meningitis, endocarditis, pneumonia and other conditions. That during the epidemic many laboratory examinations failed to show the presence of this organism is probably due to the fact that such examinations were carried out under the stress of war conditions, frequently without the use of adequate mediums or sufficient attention to the cultural peculiarities of the influenza bacillus. The failure to reproduce the disease in animals may be explained by the fact that in the majority of animal experiments reported in the literature, the methods of inoculation have been subcutaneous, intraperitoneal or intravenous, and it is not to be expected that a disease that may safely be classified as a respiratory infection could readily be reproduced in animals by the introduction of the virus by other than the natural mode of infection. That attempts to reproduce the disease by inoculation of the mucous membranes of the respiratory tract have been unsuccessful may be due to failure to take into consideration that such pathogenicity as the influenza bacillus

possesses may be rapidly lost on artificial cultivation outside the animal body. Our experiments show that *B. influenzae*, when attention is paid to maintaining it at a proper grade of virulence, can initiate in healthy animals an infection of the mucous membranes of the upper respiratory tract which may spread by continuity to the lower respiratory tract, producing a tracheobronchitis and, in a certain proportion of the cases, a characteristic type of bronchopneumonia. Control experiments with highly virulent strains of pneumococci and hemolytic streptococci have shown that these organisms do not possess this property, and that they must gain admission to the bronchi before they can initiate an infection of the respiratory tract. The disease experimentally produced by inoculation of the nasal and buccal mucous membranes with *B. influenzae* was essentially identical with influenza in man with respect to its symptoms, clinical course and complications. *B. influenzae* can produce in animals a characteristic type of bronchopneumonia which is identical with the kind of pneumonia that has been described as typical influenzal bronchopneumonia of man and has been ascribed to infection of the lungs with *B. influenzae*. In short, *B. influenzae* can produce in animals the clinical syndrome of influenza. As harmonizing apparently opposing facts, I would suggest that the pandemic disease was primarily initiated by a yet undiscovered organism, and that there resulted under the influence of this virus a concomitant infection with *B. influenzae* which was responsible for the principal clinical manifestations of the disease influenza. Only future investigation can determine whether this assumption is correct.

DISCUSSION

DR. WILLIAM H. PARK: Four of our laboratory assistants at different times have been sprayed with fresh cultures of influenza bacilli accidentally. Two of these persons developed a moderate infection, and in both of these the type of culture which was sprayed into the nostrils was the type obtained during the infection and for many days afterward. The other two did not develop the infection, although one became a carrier for several weeks. Dr. Blake spoke of the fact that the early fulminating cases might show during the first day the Pfeiffer bacillus in pure culture or nearly pure culture, and later would show mainly the streptococcus, pneumococcus or other organisms. We have not found this always to be the case. Only a minority of our acute cases (20 per cent.) at death showed only influenza bacilli in the lungs. Dr. Williams and her associates have tried to find a filtrable virus, but with negative results. Inoculations in students of filtrates from nasal washings had also not produced infection. The simple finding of a filtrable virus in a few cases would, of course, prove nothing more as to the etiology of influenza than finding an unidentified new pathogenic microbe. It would still be necessary to prove that such a virus was the cause of the pandemic and not one of the complicating infections. One of the questions that must be considered in etiologic investigations is: "What are the marks of a case of epidemic influenza?" Dr. Williams has searched the cultures from over 100 cases but has not found the epidemic strain. When investigators have spoken of the significance of the Pfeiffer bacillus in 100 per cent. of the cases, they used the name in a very liberal way; they really meant that they had found very different types of the organism. These could not be from the same epidemic source. These findings supported strongly the belief that these persons were influenza bacillus carriers before they were attacked by influenza. Earlier investigations have always indicated this. The Pfeiffer bacillus has been found in virtually every case of whooping cough, in 90 per cent. of measles cases, and also in a large percentage of cases in other respiratory infections. In her search for the epidemic strain, Dr. Williams has taken cultures from separate groups and has isolated ten or twenty colonies from the cultures of each. In order not to miss the infecting strain, she selected those developing first on the plates, those developing later, and those developing last. She has picked out these colonies from the cultures from undoubted epidemic influenza; but instead of finding an epidemic strain, she found a multitude of types. These findings have convinced us that the Pfeiffer

bacillus has not been established as the cause of influenza, and have led us to believe that it was some other micro-organism. These experiments of Drs. Cecil and Blake have to my mind been very important in designating that lesions can be formed in monkeys by the Pfeiffer bacillus similar to those seen in the pneumonias occurring in influenzas.

DR. HANS ZINSSER: Drs. Cecil and Blake have, indeed, carried out Koch's postulate with the influenza bacillus and have produced lesions similar to those produced by this organism in some human cases, but the question as to whether the condition they have produced is true epidemic influenza or corresponds merely to a secondary condition analogous to pneumococcus and streptococcus lesions is still open. The conditions that Dr. Cecil and Dr. Blake produced in the monkeys' lungs, and the similar condition often spoken of as influenza at the present time, are not those seen in the cases of influenza during its early epidemic stages in France, and as I understand in this country as well, a condition characterized by rapid dissemination, sudden onset, violent headache, muscular pain and fever, but absence of respiratory or other local symptoms. It usually lasted three days, and all the patients recovered. Later, throat symptoms appeared; and in these, influenza bacilli were found. This was certainly not the disease that was seen later in the camps in this country and is being seen in the hospitals, associated with the pneumococcus or the hemolytic or other streptococcus. It is difficult to understand why a patient should be so terribly ill with nothing but a small focus of influenza bacilli in the throat; this can be explained only on the basis of the production of a poison by the organisms comparable to exotoxins of other bacteria. Recent work in the Columbia Medical School laboratory by Mrs. Parker shows that the influenza bacilli produce powerful poisons in the early stage of their growth in liquid mediums, which are toxic for rabbits. Just what these poisons are is not yet clear to us; but it is not impossible that they may actually be formed in the body, and would account for severe symptoms accompanying the localized infections. At Dr. Longcope's clinic we are beginning to examine convalescent patients by complement fixation with influenza bacilli. A great many of them seem to have shown complement fixation with various antigens, but the work is just beginning and it is very difficult to obtain serums from any one at present and be sure that they are normal. The work of Drs. Cecil and Blake has made it seem somewhat more likely that the influenza bacillus is responsible for what is commonly spoken of as influenza, but it does not bring positive proof of this particular phase of the problem; and while I am inclined to favor the etiologic significance of the influenza bacillus, final judgment must be withheld until some of the apparently contradictory points of evidence have been more thoroughly cleared up.

DR. FRANCIS G. BLAKE: The point to be emphasized is that although we can produce pneumonia by the influenza bacillus, this bacillus was able to initiate an infection of the upper respiratory tract which seemed the same as the type that appeared in the spring of 1918. I saw a great deal of that type at Fort Sam Houston, and believe it was the same as the type they were having in France. Is it not possible that a number of strains of the influenza bacillus were responsible for the epidemic? In an epidemic of pneumonia among monkeys, at least four types of the pneumococcus were concerned.

Treatment of Influenza

DR. SAMUEL A. BROWN: In the treatment of influenza, toxicity is the factor to be kept in mind from the beginning of the disease to the very end. Treatment must be directed first toward the destruction of the invading organism locally and generally. All cases, though very mild, should be regarded seriously. The treatment should consist of rest in bed, a cathartic, and local treatment of the nasal and respiratory mucous membranes with alkaline irrigations and a solution of argyrol or other preparation of silver. Of the drugs of value in the constitutional treatment, the preparations of quinin stand out as fundamentally the nearest to a specific which we have, though we are entirely unable to prove its destructive power on the specific bacteria. Quinin should be

given in 2 or 3 grain doses every two or three hours until there is evidence of cinchonism. In addition, phenacetin for the control of pain, headache and temperature, small doses of codein for control of the cough and salicylates as analgesics may be given as required. Another plan of treatment in which there is dryness of the skin, cough and restlessness consists in the administration of Dover's powder, 3 grains, and 3 grains of quinin every three or four hours. The former plan seems preferable. It is important to increase elimination by the ingestion of alkaline waters and by means of high colonic irrigations. The depression associated with the end of the active stage should be counteracted in the beginning by moderate alcoholic stimulation and forced feeding. The treatment during the convalescent stage is most important and often neglected. Associated with the use of quinin, camphor may be used hypodermically. During convalescence the hypodermic administration of strychnin or arsenic on alternate days should be prescribed, together with absolute rest and stimulating massage. In recent prescribing many have omitted to use some of the old-fashioned preparations which have been useful for generations and which are just as useful today if selectively applied.

DISCUSSION

DR. HUBERT V. GULE: Influenza is of such short duration, and the outcome is so invariably favorable, that it is difficult to say just how much the results are due to treatment and how much to the patient's own immunity. One is almost justified in regarding any case of influenza that has persisted more than five days as more than likely to have developed pneumonia. Here, again, with the exception of pneumonia of Type I, the treatment is purely symptomatic. At present I fear the great bulk of treatment in pneumonia is directed to the prevention of circulatory and heart failure when it is by no means certain that this is a frequent cause of death. Haldane has recently brought to notice the importance of the administration of oxygen inhalations in the treatment of anozemia, which he defines as a condition in which the rate of supply of oxygen to the tissues by the blood in the systemic capillaries is insufficient for the normal processes of life. This he maintains is a common situation in the bronchopneumonias of the so-called influenzal type. Another procedure that has proved useful, the result of our experience abroad, is the use of intravenous hypertonic glucose solution. This seemed to be of distinct value in the critically ill presenting marked toxic symptoms, its beneficial effects being attributed to the restoration of dehydrated tissues, to its slight caloric value, and to its possible tonic effect on the heart muscle. Nonspecific protein therapy has been applied in bronchopneumonia, and seems to promise some assistance along these lines. The same statement holds true of passive immunity obtained by the use of the serum of convalescent patients. Lumbar puncture is occasionally of value in delirious patients, and is of value in ruling out the possibility of meningeal involvement. For emergency stimulation in pneumonia, camphor and caffeine in my experience are most efficient, with epinephrin if the blood pressure is unduly low. Pituitary extract has been useful in combating tympanites. The patient should, of course, be digitalized early in the course of the disease.

Obstetric Teaching Hospitals in London.—By all means let the small number of hospitals which can do so enlarge their existing accommodation for maternity cases and at the same time take steps to improve their teaching, which at present is admittedly defective; but the total number of beds which these hospitals will be able to set aside for midwifery will be quite inadequate to fill the demand. It would be suicidal for all the medical schools of London to try to establish maternity wards with a sufficient number of beds; this should be attempted by not more than three or four schools and the students of the other schools should obtain their clinical instruction either at one of the schools furnished with a maternity ward, or, better, at one of the new and large midwifery institutions, of which at least half a dozen will be required in the different areas of London.—*Lancet*, Dec. 13, 1919.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Review of Tuberculosis, Baltimore

January, 1920, 3, No. 11

- *Occult Tuberculosis. H. Sewall, Denver.—p. 665.
*Serologic Studies on Tuberculosis. Complement Fixation. S. A. Petroff, Trudeau, N. Y.—p. 683.
*Early Roentgen Ray Diagnosis of Ulcerative Tuberculous Colitis. L. Brown and H. L. Sampson, Trudeau, N. Y.—p. 698.

Occult Tuberculosis.—A large group of patients suffer symptoms from a tuberculous infection which is nonprogressive. The symptoms are caused by a subtle intoxication which undermines the functional powers and coordination of all vital tissues. This condition Sewall terms "occult tuberculosis." The patients, as a rule, are not definitely sick. There is a general functional insufficiency with lack of staying power that is brought out by slight physical strain. Neuralgic pains, headache, dizziness, undue fatigue and nervousness are common symptoms. In women, menstruation is apt to be scanty, or is frequently missed. The temperature is usually not elevated but may rise slightly after exercise. The lungs are rarely suspected, but they give auscultatory and roentgen-ray evidences of slight sclerosis involving, especially, the hilum lymph nodes and the upper bronchial radiations. The symptoms may often be traced to circulatory or hormonal insufficiency. Many of these patients, Sewall says, have probably been classified under the title of "effort syndrome" or "neurocirculatory asthenia." The most valuable objective sign of occult tuberculosis is the reaction of the blood pressure to slight strain, such as changing from the supine to the erect position. Most of these patients have vascular hypotension but the most significant feature is an abnormal lowering of pulse pressure and its tendency to progressive subsidence when the erect posture is assumed. This may be due to inordinate fall of systolic pressure or to rise of diastolic pressure in the upright as compared with the recumbent position. This pressure change is not specific of occult tuberculosis, but after exclusion of focal infection, it should suggest this condition and lead to the application of diagnostic methods.

Complement Fixation in Tuberculosis.—Petroff reviews a number of antigens that have been employed and discusses their nature and chemical composition. He has isolated substances corresponding to lecithin, kephalin, sphingomyelin, carnithin and cuorin from tubercle bacilli, and compared their antigenic properties with those of various tuberculo-proteins. Lipins are anticomplementary in large doses, and have no antigenic properties in small doses. Proteins do not give as strong reactions as proteins combined with lipins. The primary incubation time is very important and from one and one-half to two hours is best. Complement fixing antibodies are probably globulins or substances absorbed with the globulins. To get satisfactory results, it is important to have a proper hydrogen ion concentration of the salt solution, to have the glassware thoroughly cleaned and to incubate at a temperature of between 35 and 40 C. Petroff claims that the test in tuberculosis is more specific than the Wassermann test in syphilis.

Roentgen-Ray Diagnosis of Tuberculous Colitis.—According to Brown and Sampson, the clinical picture in the early latent stages of tuberculous colitis contributes little to diagnosis. However, certain roentgen-ray shadows seen from six to twenty-four hours after a barium meal show definitely the presence of colonic ulceration, although their absence does not exclude it. They also show hypermotility and spasm of filling defects, and such a picture in a patient with pulmonary tuberculosis should lead to a definite diagnosis of colonic tuberculosis. The condition is far more frequent than has been hitherto taught, and must be excluded in all advanced as well as early cases with abdominal symptoms, before submitting them to radical treatment. No examination of a patient with pulmonary tuberculosis can be considered complete without a roentgen-ray study of the intestines.

Boston Medical and Surgical Journal

Feb. 19, 1920, 182, No. 8

- Bodily Mechanics and Nutrition. L. T. Brown, Boston.—p. 187.
Illegitimacy from Standpoint of Physician. F. S. Keller, Boston.—p. 191.
Report of Neurologic Sequels of Influenza in Boston City Hospital Neurological Outpatient Department from July, 1918, to July, 1919. M. D. Ordway, Boston.—p. 194.
*Placental Tumor. R. D. Margeson, Boston.—p. 200.
*Rupture of Pectoralis Minor Muscle. W. P. Coues, Boston.—p. 200.

Placental Tumor.—Margeson reports what he believes to have been an angioma of the placenta. The tumor measured 10 by 6 by 3 cm. and was completely surrounded by amniotic membrane, being attached to the placenta by a structure similar to the umbilical cord, containing vessels, and measuring 6 cm., thus differing from a succinturiata by having no uterine attachment. The specimen was destroyed by mistake before a microscopic examination could be made.

Rupture of Pectoralis Minor Muscle.—While lifting on a tackle and falls with the left arm high in the air, Coues' patient gave a quick jerk on the rope and felt a sudden severe pain above the nipple of the left breast. The load was between 800 and 900 pounds. The patient complained of pain about the left breast on attempting to use his arm since that time, eight months ago. The region of the left breast was distinctly more prominent than the right. There was a diffuse globular swelling under the breast, extending from the anterior border of the axilla to just above the nipple line. The mass was soft, doughlike and somewhat tender to direct pressure. It was most marked near the axillary line. Its general shape was somewhat that of a cucumber. Elevation of the shoulder was possible but painful. Adduction of the arm caused distinct pain in the pectoral region. The grip of both hands was equal and strong. There was no disturbance of sensation of hand, forearm or shoulder. There was no atrophy. The greater pectoral muscle was very well developed, and seemed to be functioning perfectly well. The nature of the injury and appearance of the soft tumor mass in the direct position of the lesser pectoral muscle, would seem to make the diagnosis of this unusual injury fairly certain.

California State Journal of Medicine, San Francisco

February, 1920, 18, No. 2

- Botulism. E. C. Dickson, San Francisco.—p. 40.
*Pneumoperitoneum: Roentgenographic Study of Abdominal Organs After Inflation of Peritoneal Cavity. W. A. Alvarez, San Francisco.—p. 42.
Practitioner's Contribution to Embryology. A. W. Meyer, Palo Alto.—p. 44.
Problem of Uterine Cancer. F. W. Lynch, San Francisco.—p. 47.
*Refinement of Colorimetric Methods; Indigocarmine as Functional Test. G. G. Reinle and E. S. DePuy, San Francisco.—p. 49.

Pneumoperitoneum.—According to Alvarez, the first one to show roentgenograms taken after injecting air into the abdomen of a patient who had been tapped for ascites was Lorey in 1912. Weber began to work out this technic on animals and cadavers in 1912. The harmlessness of this procedure in suitable cases seems to have been well established, as no accidents have been reported from the clinics in which it has been used extensively. Rabbits and guinea-pigs can be distended with oxygen or carbon dioxide to a degree not approachable in man, without producing any signs of distress or concern. The rapid absorption of these large quantities of gas does not bother their respiratory centers. Alvarez is convinced that this is the biggest advance in roentgenologic technic since the introduction of the bismuth meal by Cannon in 1898.

Indigocarmine as a Functional Test.—Two standards are used by Reinle and DePuy in each determination: (1) a standard aqueous phenolsulphonephthalein, 0.006 to 1,000; (2) a standard dark amber urine phenolsulphonephthalein, 0.006 to 1,000. By a dilution of the urine standard with the water standard, a separate standard was established in each case, and that standard was compared with the urine under investigation. In one of the parallel tubes to the colorimeter the patient's urine, diluted to some multiple of 1,000, is brought up to the 10 c.c. mark. In the opposite tube is

placed 4 or 5 c.c. of either of the standards. A glance shows whether there is too much or too little yellow coloring matter, and either the aqueous standard or the urine standard is added until an exact match is obtained. The whole process is said to occupy probably five minutes, and is so easily accomplished that the test can be performed by any trained attendant. Having solved the problem of actually matching colors, which the authors are able to do within 0.5 per cent., they then check their findings with reflected light against the findings of transmitted light. The authors use indigocarmin instead of phenolsulphonaphthalein. The amplified indigocarmin test is not offered as in any wise a substitute for the phenolsulphonaphthalein test, except under conditions where the latter cannot be used, but it is proposed as either an alternative test or as a supplementary test when urine is uncontaminated by blood.

Georgia Medical Association Journal, Atlanta

December, 1919, 9, No. 8

- What the Public Should Know About Cancer. J. L. Campbell, Atlanta.—p. 1.
Treatment of Gunshot Wounds of Abdomen. M. C. Pruitt, Atlanta.—p. 5.
Degenerative Diseases: The Most Formidable Foe of Human Life. O. M. Haywerd, Reeves.—p. 9.
Radium in Uterine Cancer and Other Gynecologic Conditions. C. C. Harrold, Macon.—p. 14.
Present Status of Meningococcic Infection. A. H. Bunce, Atlanta.—p. 16.

Illinois Medical Journal, Oak Park, Ill.

February, 1920, 37, No. 2

- Report on Otolaryngologic Features of Influenza at Camp Hancock, Ga., September-December, 1918. G. Fetterhoff, Philadelphia, and W. J. Rideout, Freeport, Ill.—p. 77.
Spasmophilia. J. W. Van Derslice, Oak Park.—p. 82.
Influenza and Its Relation to Septic Laryngitis. C. H. Long, Chicago.—p. 85.
Acute Mastoiditis. R. J. Tivnen, Chicago.—p. 87.
Diagnosis and Treatment of Gastric and Duodenal Ulcers. E. F. Stevenson, Waterloo, Iowa.—p. 96.
Early Recognition and Treatment of Intussusception. C. S. Krause, Cedar Rapids, Iowa.—p. 98.
Typhoid and Paratyphoid in Vaccinated Troops; Report of Twenty-Five Cases in Army of Occupation. L. Unger, Chicago.—p. 101.
Typhoid Fever at Moline. M. C. Sjoblom, Springfield.—p. 103.
General Health Activities and Their Effect in Tuberculosis. G. T. Palmer, Springfield.—p. 106.
Tuberculosis Infection in Relation to Public Health. W. B. Metcalf, Chicago.—p. 111.
Hyperesthetic Ethmoiditis. H. L. Pollock, Chicago.—p. 113.
Definite Treatment of Pneumonias; Treatment of Influenza. S. S. Cohen, Philadelphia.—p. 117.
Oral Foci of Infection from Dentist's Standpoint. H. H. Schumann, Chicago.—p. 119.

Journal of Mental and Nervous Diseases, Lancaster, Pa.

January, 1920, 51, No. 1

- Tonus of Autonomic Segments as Causes of Abnormal Behavior. E. J. Kempf, Washington, D. C.—p. 1.
Paranoid Psychoses. K. A. Menninger, Topeka, Kan.—p. 35.
Dilatation of Lateral Ventricle as Common Brain Lesion in Epilepsy. D. A. Thom, Palmer, Mass.—p. 41.

Dilatation of Lateral Ventricle in Epilepsy.—The brains of seventy-five epileptics were examined postmortem by Thom. Fifty-seven of these specimens presented gross brain lesions; thirty-one presented cortical lesions as well as dilated ventricles; sixteen presented lesions of the cortex alone, while fourteen, with normal appearing cortex, presented dilated lateral ventricles. Of the whole number of forty-three brains presenting cortical lesions, the hind portion of the brain was by far the most frequently affected, especially the occipital lobes. The convolutional shrinkage in this region was often marked on the brains so that the condition was acquired rather than of congenital origin. Next in order of frequency was the general cerebral gliosis, where the entire cerebellum appeared to be involved. Softenings were noted only six times, once being general and five times focalized. In only two cases of the seventy-five was there evidence of arterial rupture. Gliosis and atrophy of one hemisphere alone was noted in eight cases of the forty-one with dilated ventricle; twenty-seven brains presented abnormalities of the cortex; in fourteen instances the cortex was not grossly abnormal but the ventricular dilatation was of such a degree as to

leave no doubt of its abnormality, thus raising the question whether the lesions affecting primarily the white matter can be a factor in the production of epilepsy.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

December, 1919, 14, No. 4

- *Active Principles of Pituitary Gland. H. W. Dudley, London, England.—p. 295.
*Perfusion of Medulla of Turtle with Atropin, Caffein and Strychnin. A. D. Bush, Columbia, Mo.—p. 313.
*Comparative Toxicity of Local Anesthetics and of Antipyretics for Earthworms. T. Sollmann, Cleveland.—p. 319.
*Anthelmintic Action of Benzyl Alcohol and Benzyl Esters. D. I. Macht, Baltimore.—p. 323.
Modification of Action of Epinephrin on Heart by Morphin. W. J. R. Heinekamp, Chicago.—p. 327.
*Action of Curara on Output of Epinephrin from Suprarenals. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 343.
Cocain Intoxication in Rabbit. C. A. Mills, Cincinnati.—p. 355.

Active Principles of Pituitary Gland.—A method of preparing crystalline residues, very active physiologically, from extracts of the posterior lobe of the pituitary gland is described by Dudley. It consists in extraction of the dried and powdered infundibulum with acidulated water, treatment of the solution with colloidal ferric hydroxid and subsequent continuous extraction of the filtrate with butyl alcohol at reduced pressure. This extract yields a crystalline residue which contains all the uterine stimulant, together with some of the pressor principle and contaminating substances. Dudley claims the uterine stimulant and histamin are not identical, as suggested by Abel and Kubota, but are two distinct chemical substances. The only point of similarity observed is that both are readily extracted from alkaline solution by butyl alcohol. The pituitary uterine stimulant is more readily extracted from acid solution than the pressor principle.

Perfusion of Medulla of Turtle.—The experiments reported by Bush seem to indicate that on the isolated medulla of the striped turtle, atropin, 0.02 per cent., and caffein, 0.04 per cent., exert little or no registrable influence; whereas strychnin, 0.0033 per cent. produces a prompt, though temporary, stimulation of the cardio-inhibitory center.

Comparative Toxicity of Local Anesthetics and of Antipyretics for Earthworms.—The investigation made by Sollmann furnishes data of the toxic concentrations of local anesthetics and of antipyretics for earthworms. These are not paralleled to the toxicity for mammals, since the mechanism of the fatal effects is different.

Anthelmintic Action of Benzyl Alcohol and Benzyl Esters.—Experiments were made by Macht on both earthworms and roundworms of the pig with benzyl alcohol, benzaldehyd, benzyl acetate and benzyl benzoate. It was found that all of these drugs exerted a toxic effect on the worms but not in the same degree. The least effective was benzyl benzoate. Its weak action, however, must be for the most part due to its poor solubility and penetrating power. Benzyl alcohol was found to be the most powerful anthelmintic of the drugs studied. A 0.5 per cent. solution of it, and even weaker solutions, killed earthworms rapidly. Benzaldehyd came next in its efficiency and benzyl acetate was third.

Action of Curara on Output of Epinephrin from Suprarenals.—Stewart and Rogoff found the curara in doses sufficient to paralyze the skeletal muscles in the cat markedly depresses the output of epinephrin from the suprarenals. The depression begins promptly and may be still well marked when paralysis of the muscles has begun to wear off. While no attempt was made to compare exactly the doses required to paralyze the epinephrin secretory fibers and the cardio-inhibitory fibers, a marked diminution in the epinephrin output was observed in samples of blood collected from the suprarenals at a time when stimulation of the vagus caused inhibition of the heart.

Kentucky Medical Journal, Bowling Green

February, 1920, 18, No. 2

- Extensive Carbuncle of Neck. J. G. Sherrill, Louisville.—p. 38.
Value of Neuropsychiatric Examination in Certain Obscure Cases of Internal Medicine and Surgery. B. L. Jones, Detroit.—p. 40.

Medical Record, New York

Jan. 31, 1920, 97, No. 5

- Epidemic of Influenza Occurring in the U. S. Naval Hospitals in Philadelphia in 1918. J. Daland, Philadelphia.—p. 173.
Dispensary Situation in New York City. E. H. Lewinski-Corwin, New York.—p. 180.
Barbarous Custom of Smoking. W. A. Bloedorn, M. C., U. S. Navy.—p. 185.
*Unusual Symptoms and Signs Observed in the Last Influenza Epidemic. D. Greenberg, New York.—p. 188.
*New Method of Treating Remote Manifestations of Gonorrheal Infections. M. Stern and I. S. Ridler, New York.—p. 190.

Unusual Symptoms and Signs Observed in Last Influenza Epidemic.—The cases cited by Greenberg were: influenza with intestinal hemorrhages; influenza with onset of hematemesis; influenza followed by acidosis and toxic vomiting; influenza with acute nephritis and suppression of urine in a patient suffering from pulmonary stenosis and paroxysmal tachycardia (auricular fibrillation).

New Method of Treating Remote Manifestations of Gonorrheal Infections.—For nearly one year, Stern has been treating all cases of arthritis with intravenous injections of 20 c.c. of a solution of sodium iodid, 2 gm. in 20 c.c. of water. This treatment was repeated every four days. After having treated ten arthritis patients with extraordinary results, intravenous injection of sodium iodid was resorted to in cases of acute orchitis, with rapid subsidence of the acute symptoms. Prostatic infections also behaved in a manner quite different from that which Stern had been accustomed to seeing. By thus extending the field of application of this treatment he now has records of 100 patients discharged germ free and apparently cured, though no follow-up system was possible.

Feb. 7, 1920, 97, No. 6

- Bronchoscopic Treatment of Bronchiectasis and Pulmonary Abscess. H. L. Lynah, New York.—p. 215.
Dilatation and Plication of Caput Coli. D. H. Stewart, New York.—p. 218.
Angioma of Stomach. W. S. Lemon, Rochester, Minn.—p. 220.
*Case of Congenital Total Hemihypertrophy. H. R. Coston, Birmingham.—p. 222.
Amaurotic Family Idiocy or Infantile Amaurotic Idiocy. J. Epstein, New York.—p. 224.
*Desirability of Instituting a Special Medical Board Which Should Correspond to the Patent Office. A. L. Soresi, New York.—p. 227.
Anesthesia in Cerebral and Spinal Surgery. A. M. Palermo, New York.—p. 231.
Wine in François Rabelais' Day. D. W. Montgomery, San Francisco.—p. 233.
Influenza; Confirmatory Report on Abortive Action of Quinin Dihydrochlorid. W. F. and E. C. Burrows, New York.—p. 235.

Case of Congenital Total Hemihypertrophy.—Coston's patient was 22 months old, the fourth child of healthy parents of rather low mentality. The other three children were normal and healthy, and mentally above their parents. This one had never been sick, and seemingly was of good mentality. The mother was well during the pregnancy. There is no history of defective development in any member of the family, except a second cousin of this child's on the mother's side, who has six toes on his right foot. This child was born after a very quick and easy labor. It was observed immediately on his birth that one side was much larger than the other. This involved the whole left side from the crown of the head to the soles of the feet.

Special Medical Board, Corresponding to Patent Office.—Soresi's idea is that the function of this medical board should be to establish and protect the priority of ideas relating to medical subjects.

Philippine Journal of Science, Manila

July, 1919, 15, No. 1

- Philippine Bees of Genus Noami. T. D. A. Cockerell.—p. 1.
Metallic Colored Halictine Bees of Philippine Islands. T. D. A. Cockerell.—p. 9.
New Records and Species of Philippine Membracidae. W. D. Funkhouser.—p. 15.
Osteologic and Other Notes on the Monkey Eating Eagle of Philippines, Pitheophaga Jefferyi Grant. R. W. Shufeldt.—p. 31.
General Facts in Biology of Philippine Mound Building Termites. L. B. Uichanco.—p. 59.
Malayan Machaerotine (Cercopidae). C. F. Baker.—p. 67.
Habits of Tropical Crustacea: III. R. P. Cowles.—p. 81.
Milk Produced in Southern China. C. O. Levine.—p. 91.
Analysis of Portland Cement Raw Mixture. J. C. Witt.—p. 107.

Milk Produced in Southern China.—Three classes of milk animals were studied by Levine: European cattle, the native water buffalo (known in the Philippine Islands as carabao) and the native humped cattle. The work has been done chiefly in the vicinities of Canton and Hongkong, the only regions in Kwangtung (which is the southernmost province in China) where dairying has yet developed into an industry of any extent. The milk of the Canton buffalo contains nearly four times as much fat as the European cow, twice as much protein, but only two thirds as much sugar. The ash content is about the same; the water content is slightly less. The food value of the milk of the water buffalo was discussed fully in an article by Cadbury, published in the *American Journal of Diseases of Children*, January, 1920, and abstracted in THE JOURNAL, Jan. 17, 1920, p. 202.

Southern Medical Journal, Birmingham, Ala.

February, 1920, 13, No. 2

- Focal Infection. T. D. Coleman, Augusta.—p. 79.
*Subacute Combined Degeneration of Spinal Cord. W. G. Somerville, Memphis.—p. 84.
*Three Cases of Spinal Muscular Atrophy Probably of Werdnig-Hoffman Type. J. H. M. Knox, Jr., and G. F. Powers, Baltimore.—p. 86.
*Infectious Meteorism. M. Einhorn, New York.—p. 92.
An Improved Stomach Tube. G. C. Mizell, Atlanta.—p. 96.
State Department of Health and Child Welfare Problem of South. E. A. Hines, Seneca.—p. 98.
*Uncinariasis and Manifest Tuberculosis. R. D. Adams, Washington.—p. 105.
Treatment of Acute Abdomen. J. P. Runyan, Little Rock.—p. 110.
Plastic Surgery of Face. E. D. Highsmith, Atlanta.—p. 113.
Urologic Treatment of Vesicovaginal Fistula. J. R. Caulk, St. Louis.—p. 116.
Ureteral Stones. E. P. Merritt, Atlanta.—p. 118.
*New Uses of Scrotum. J. E. Johnson, Memphis.—p. 120.
Pruritus Ani. E. H. Terrell, Richmond.—p. 123.
Interpreting Muscular Imbalance. H. Woods, Baltimore.—p. 126.
Two Cases of Eye Inflammation Due to Infected Teeth. C. M. Miller, Richmond.—p. 132.
Relation of Medical Education to Group Medicine. S. R. Roberts, Atlanta.—p. 136.
National Board of Medical Examiners. L. A. LaGarde, Washington, D. C.—p. 138.
National Board of Medical Examiners. J. S. Rodman, Philadelphia.—p. 140.

Subacute Combined Degeneration of Spinal Cord.—Under this heading Somerville cites a case of anemia and a combined degeneration of the posterior and lateral columns of the cord, running a fairly acute or subacute course. The patient was a woman, aged 55 years. Her trouble began insidiously fifteen months previously, with numbness and tingling in the feet and legs, which has gradually extended up above the umbilicus. Recently, there developed numbness and tingling of the hands and wrists, weakness of the lower extremities and a rather marked ataxia; some difficulty in voiding urine, but no retention nor incontinence. She complained of a sensation in the lower extremities as if they were tightly bound with bandages. She had had intestinal attacks with some rise of temperature at intervals of every few weeks. Her color was pale and sallow; heart and lungs were negative. Hemoglobin was 63 per cent.; red blood corpuscles numbered 2,300,000, with slight variation in size, but no nucleated cells. In every stool examined there was found the *Cercomonas intestinalis*. Somerville calls attention to the very great importance of examination of the intestinal discharges of these patients, because of the possibility that the symptoms are produced by an intestinal parasite.

Spinal Muscular Atrophy Probably of Werdnig-Hoffman Type.—Knox and Powers report three cases occurring in one family, one boy and two girls, aged 14 months, 6 weeks and 3 months, respectively. The authors incline to the belief that the symptoms in these three cases, namely general symmetrical muscular weakness, noted at birth, with loss of reflexes and diminution in response to electrical stimulation, can be explained most satisfactorily on the assumption of a primary spinal atrophy and secondary muscular involvement, although the possibility of a reverse process cannot be excluded. The third patient, who is still living, has apparently improved somewhat, which is accounted for by the development of certain intact and enervated muscle fibers.

It would seem to the authors, from a consideration of the growing literature, that many transitional cases do occur between the group of cases described as amyotonia congenita (Oppenheim) and those of infantile spinal muscular atrophy (Werdnig-Hoffman); that both these conditions may be due to a congenital defect in development of the lower motor neuron tract, affecting both certain ganglion cells of the cord and the muscles they supply. In general, it is true that the cases of amyotonia congenita represent the less intense and progressive involvement.

Infectious Meteorism.—In the two cases cited by Einhorn a laparotomy was performed. There existed no mechanical obstruction along the digestive tract. The small intestine in parts and the entire colon were filled with gas, and the peritoneal covering of these organs looked glittering and reddish, showing the presence of peritonitis. Both patients died soon after the operation. The disease, appearing in both patients in an acute form with the accompaniment of fever, suggested an infection (probably bacterial) as its cause. Einhorn also cites one case in which this condition followed an attack of influenza. Treatment should be directed toward combating the infection and relieving the bowel difficulty. Absolute rest, flushing of the system with water, and relieving the digestive tract of accumulated gas and stagnant contents are the main aims to be accomplished.

Uncinariasis and Manifest Tuberculosis.—In forty-six cases of suspected tuberculosis, Adams failed to find any evidence justifying the diagnosis of tuberculosis but established the presence of existing infection with hookworm in thirty-two cases, and developed clear histories of previous infections of considerable severity in the remaining fourteen cases. The provisional diagnosis had been made in each instance chiefly because of the presence of adventitious sounds over the upper chest. Investigation disclosed the entire absence of râles and demonstrated the presence of joint sounds ranging from coarse grating to fine crepitations, the latter distinguished only with difficulty from true râles. The majority of these sounds are to be heard over the sterno-costal articulations and are transmitted out to the ribs, especially in the vicinity of the clavicle. A comparative study, on one hand, of 100 individuals with clinical evidence of uncinariasis, and of 100 normal subjects, on the other, showed a preponderance of confusing crepitations of about three to one in favor of the former. In old cases of hookworm infection the adventitious joint sounds are not confined to the shoulder girdle and adjacent parts, but are to be heard over several or many of the articulations. In Adams' opinion there is no evidence establishing any specific relationship between the two diseases, and, he says, inasmuch as it has been demonstrated that the mortality from tuberculosis may be reduced by a measure so simple as elimination of hookworm where double infection exists, the obligation of the physician with regard to diagnosis and treatment is apparent.

New Uses of Scrotum.—Two cases are reported by Johnson in which an excess of scrotum was used to advantage in relieving two conditions which have not yielded always to the usual treatments. The first case was one of intractable pruritus ani, in which the skin of the involved area had to be removed. A pendulous scrotum was used to supply the defect. The second case was one of lymphedema of the leg following an operation for right inguinal adenitis. During the operation, which had been performed about six months before, the saphenous vein was injured and the hemorrhage was controlled by sutures en masse. There was an obstruction of the lymph return through the right inguinal lymphatics. The leg did not recede to normal when elevated. The scrotum was not edematous. As the return lymph could not go through the right groin, the problem was to find another course. Finding an unusually long scrotum, Johnson decided to use the entire left side of the scrotum with its subcutaneous tissues and lymphatic channels as a tissue flap below the obstructed area, with the idea of carrying the lymph, which normally returns through the right groin, through the left groin. At the end of two months the edema was entirely relieved.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

January, 1920, 14, No. 1

Some Aspects of Tuberculosis Problem in Life Assurance. O. May.—p. 1.

*Roentgen Rays in Early Diagnosis of Pulmonary Tuberculosis. M. Berry.—p. 12.

Reformation in Sanatorium Management. G. B. Roatta.—p. 16.

Next Stage in Tuberculosis Movement: A Criticism and a Suggestion. W. M. Crofton.—p. 19.

City of Liverpool Sanatorium for Tuberculosis at Fazakerley. V. Hooper.—p. 25.

Diminution of Diaphragm Movement in Tuberculosis of Lungs.—Air entry into the lung is dependent on diaphragmatic and costal movements, hence any diminution in these movements will give rise on the fluorescent screen to diminution of the difference in illumination between inspiration and expiration, and on percussion to the difference in the notes obtained during these two phases of respiration. Berry claims to have seen this many times. Therefore, he regards the use of the roentgen ray as of value in the early diagnosis of pulmonary tuberculosis because this functional derangement of the diaphragm may be seen before there is any evidence of organic change. The same observation has also been made by others.

British Medical Journal, London

Jan. 31, 1920, 1, No. 3083

Psychopathology and Dissociation. W. Brown.—p. 139.

*Importance of House Fly as Carrier of *Endameba Dysenteriae* (Histolytica). P. A. Buxton.—p. 142.

*Analysis of One Hundred Consecutive Cases of Cardiac Disease. W. B. Jones.—p. 145.

*Direct Cultivation of Tubercle Bacilli from Tissues. G. H. Wilson.—p. 146.

Nasal Drill: An Investigation of Its Value in Treatment of Adenoids. G. H. Hickling.—p. 147.

Case of Ectopia Vesicae Treated by Implantation of Ureters in Rectum. C. C. Holman.—p. 149.

House Fly as Carrier of *Endameba Dysenteriae*.—It appears from Buxton's research that in a well sanitated area in lower Mesopotamia more than 60 per cent. of all the flies carry human feces; more than 4 per cent. of them carry actual human entozoa and probably at least 0.5 per cent. the cyst of *Endameba dysenteriae*. He believes it justifiable to regard the fly in that country as not only a potential, but an actual and major factor in the carriage of the bowel disorders which are there so numerous. In fact, the egg of any human intestinal worm, or the cyst of any protozoan may be found in the fly if only one looks long enough.

Analysis of One Hundred Consecutive Cases of Cardiac Disease.—Of the 100 patients cared for by Jones, seventy-three complained of pain over the heart or neighboring part of the chest; nine complained of pain in the region of the lower ribs on the left side; in many of the cases the pain was only a dull ache; in all the pain was intermittent. Of these seventy-three patients, thirty-three experienced an increase in the area of the pain; thirty referred the pain to the left arm, two to both arms, and one to the right arm only. Fifty-one patients attributed the pain to exertion. Thirty-six persons stated that mental excitement caused the pain. Thirty-four persons attributed attacks of pain to digestive disturbances. Twenty-one patients complained of pain in bed. Eighty-nine patients complained of shortness of breath after slight exertion. Exhaustion after exertion occurred in eighty-five cases. Palpitation was noticed by thirty-six persons. Faintness was noted in six cases. Giddiness occurred in twenty-nine cases. The rate of the pulse was 76 or under in seventy-one cases; it was above that rate in twenty-nine cases. In two of the latter it was markedly irregular owing to auricular fibrillation. Thirty-six persons had high blood pressure; of these, twenty-five had symptoms of anginal pain. In sixty-one cases the heart was dilated, and in twenty-two of these a murmur was present. Albumin was present in the urine in three cases and sugar in one case.

Direct Cultivation of Tubercle Bacilli from Tissues.—The method of isolating tubercle bacilli from tuberculous tissues devised by Wilson depends on the use of (a) special medium for culture, and (b) the trituration of the tissue with dry quartz sand before the application of antiformin to destroy contaminating organisms. The tissue is cut up into small pieces and is thoroughly rubbed up in a mortar with a small amount of dry sterile quartz sand. The fibrous tissue is disintegrated as far as possible, and the material forms a slightly moist, crumbling mass. The contents of the mortar are then washed into a wide test tube with from 15 to 20 c.c. of sterile saline solution. The sand is allowed to sediment for a few minutes; as it falls, it carries down with it any coarser particles of tissue which remain. The supernatant fine suspension is then pipetted off, and thoroughly mixed with an equal volume of 15 per cent. antiformin. After five minutes, during which it should be stirred continuously, the mixture is centrifugalized at high speed for a few minutes, and the supernatant fluid is discarded. The sediment is shaken up with sterile saline solution and centrifugalized three times so that no trace of antiformin remains. The sediment resulting from the final centrifugalizing is used for making cultures, or, after emulsifying with a convenient amount of sterile saline solution, it is injected into a suitable animal. The medium used is a modification of Dorset's medium in which the contents of eggs are mixed with a three weeks' tryptic digest of horse heart instead of with water.

Journal of Industrial Hygiene, London

February, 1920, 1, No. 10

Industrial Diseases Under Mediaeval Trade Guilds. T. M. Legge.—p. 475.

Mortality of Bituminous Coal Miners from Influenza Pneumonia, October to December, 1918. L. I. Dublin, New York.—p. 483.

Influenza in Eastern Group of Telephone Companies, Bell System, 1918. J. S. Billings and S. W. Wynne, New York.—p. 484.

Unreported Cause of Occupational Dermatitis. R. P. White.—p. 498.

Pneumokoniosis in Man and Horse. R. P. White.—p. 500.

Control of Infectious Diseases in Industrial Communities. H. Zinsser, New York.—p. 501.

Unreported Cause of Occupational Dermatitis.—Attention is directed by White to a skin complaint which attacks certain employees engaged in the fellmongers yard. From four to twelve small ulcers, the size of a split pea, will be seen on the sides of the knuckles and on the interdigital skin of the fingers. The pullers scrape off the hair or wool by rubbing down the woolly skin with the balls of the naked thumbs and the ulnar edges of the palms of both hands. The characteristic rash and holes appear on these parts in the pullers. If neglected, the ulcers penetrate deeply, the pores easily becoming infected, causing inability to work. An effective trade-shop remedy is a drop of Stockholm tar applied to each hole. This appears to act as a protective, enabling the men to "carry on." Frequent washings of the hands in a weak solution of vinegar and water, followed by the thorough rubbing in of an ointment are helpful preventives. The ointment White prefers is as follows:

	Gm. or Cc.	
℞ Zinci oxidi	30	℥j
Acidi oleici	270	℥ix
Emplastri plumbi	300	℥x
Paranol (petrolatum 65; wool fat, 15; warm water to make 100 parts)	1140	℥xxxviii
Hydrargyri ammoniati	180	℥vj
Misce. Fiat unguentum.		

Lancet, London

Jan. 31, 1920, 1, No. 5031

Position of Medical Profession in Relation to National Physical Education. K. D. Bell.—p. 231.

Indications for Cesarean Section. H. B. Whitehouse.—p. 235.

Cerebrospinal Fever in Infants and Young Children. Treatment and After Effects. H. M. M. Mackay.—p. 238.

Edema as Symptom in So-Called Food Deficiency Diseases. A. D. Bigland.—p. 243.

Treatment of Chronic Gonorrheal Rheumatism by Vaccines Given Intravenously. A. R. Fraser and A. G. B. Duncan.—p. 248.

A New Pylorus; Posterior Gastrojejunostomy with Jejunojejunostomy as a Routine in All Cases of Pyloric Obstruction; Duodenal or Pyloric or Chronic Gastric Ulcer. G. G. Gillon.—p. 251.

Case of Mediastinal Tumor Associated with Acute Leukemia. C. R. Harrison and D. McKelvey.—p. 252.

Indications for Cesarean Section.—During the past twelve months Whitehouse performed cesarean section eleven times. The indications were as follows: pelvic contraction, flat pelvis, two cases; pelvic contraction, round pelvis, five cases; placenta praevia (central), one case; eclampsia, three cases. The maternal mortality was nil, and only one baby was lost. This baby died on the fifth day, and its death was caused by neglect on the part of the nurse. Four cesarean sections were performed in the patients' own houses, as emergencies, without any preparation, such as is the usual routine before a prearranged abdominal section. There was no mortality and no morbidity, which, Whitehouse says, goes to prove that the operation may be performed with safety, provided that adequate surgical principles are observed at the time. There were two cases of maternal morbidity, both in nursing homes. One was a case of eclampsia in which the patient's doctor had ruptured the membranes before admission. The other was a case of flat pelvis, where intra-uterine sepsis occurred on the eighth day, in spite of the fact that no vaginal examination had been made prior to operation and the membranes were intact. In this instance the infection was traced to a nurse with a septic finger who was attending the patient. Both patients, however, recovered, and the morbidity cannot be attributed to the choice of the method of operation.

Edema as Symptom in So-Called Food Deficiency Diseases.—His observations led Bigland to the belief that epidemic dropsy is a condition due to affection of the suprarenal glands as a result of inanition arising from starvation, complete or partial. It may be that the suprarenals hypertrophy at the expense of the other endocrine organs, and by their increased function give rise to dropsy. Possibly also, this hyperactivity may in time give place to a suprarenal insufficiency, as exophthalmic goiter gives place to myxedema. This second condition may be pellagra. Whatever the true explanation may be, it is extremely probable that food deficiency, together with disordered function of certain endocrine organs, plays a large part in the causation of epidemic dropsy and pellagra.

Treatment of Gonorrheal Rheumatism by Vaccines Given Intravenously.—Fraser and Duncan think that giving vaccines intravenously secures a greater protection and that almost at once. The mechanism would seem to consist of a selective stimulation of the hemopoietic system by nonspecific bodies. Probably no single factor is responsible for all the changes that occur, but the intravenous injection upsets the balance of the serum constituents, and the series of changes thus caused establishes a condition favorable to recovery from infection. The vaccines they used had been stored for some months after their preparation, and they were, therefore, probably more or less detoxicated. Whether a detoxicated vaccine has any specific properties or not requires proof. They suspect that a vaccine minus its endotoxin consists simply of nonspecific proteose in a colloidal form. Clinically, they seemed to get the same results from injections of T. A. B. vaccine as from a gonococcus or mixed vaccine. The chief reason for using a gonococcus vaccine was that a supply was available, and its use afforded a great facility for graduating dosage. Freshly prepared typhoid vaccine often causes so severe a reaction that they would not risk giving it intravenously. Injections of endotoxins always produce toxic symptoms with but little or no increase of antibodies. Marked improvement followed in all of the fifteen cases treated. No benefit seemed to result from an injection that was not followed by pyrexia. At the time treatment was commenced, the patients were extremely debilitated with a rather fast and weak pulse, which was easily accelerated. The injections were all intravenous. The vaccines used were not freshly prepared. As a result of storing probably the toxins contained had broken down more or less. The injection of these, possibly nonspecific germ constituents, would seem to have caused the production of specific antibodies. The size of the doses used, compare favorably with the doses recommended by Thomson for his detoxicated vaccines. The largest dose of gonococci was 2,000 millions.

A New Pylorus.—Gillon does a posterior gastrojejunostomy with jejunojejunostomy as a routine in all cases of pyloric

obstruction whether duodenal or pyloric or chronic gastric ulcer. The results are said to be uniformly good, and the patients are not only well, but very well. They put on weight. They develop a great capacity for swallowing large quantities of liquids without discomfort.

Bulletin de l'Académie de Médecine, Paris

Jan. 6, 1920, 83, No. 1

*Recovery of Lethargic Encephalitis. A. Netter.—p. 45.

*Desiccated Eggs. A. Sartory and L. Flament.—p. 46.

Lethargic Encephalitis.—Netter states that in less than six weeks he has encountered twelve cases of lethargic encephalitis and knows of twenty other cases. They come from different parts of the city. Fever and somnolency were noted in every case, but the motor center for the eye does not seem to be affected as constantly as when the disease was observed in 1918. Two of the patients recovered without sequelae of any kind and two died.

Bacteriology of Desiccated Eggs.—Sartory and Flament found a number of aerobic micro-organisms in the egg powders examined, but no anaerobes. They warn that unless the desiccation is complete, these powders invite molds, etc. In making omelets or similar dishes the cooking will sterilize the egg powder, but when used for such dishes as ice cream, there is reason to fear the contamination inevitable with the present mode of packing and handling.

Jan. 13, 1920, 83, No. 2

*Motor Plastic Amputations. T. Tuffier.—p. 51.

*Plague and Leprosy in the Bible. Boinet.—p. 57.

*Dose of Ultraviolet Rays in Therapeutics. H. Bordier.—p. 59.

*Modern Treatment of War Wounds. H. Reynès.—p. 62.

Motor Plastic Amputations.—Tuffier expatiates on the sound principles involved in modeling the amputation stump to form loops, etc., which permit volitional control to some extent of the prosthetic appliance. In his recent trip to Italy he studied this cinematization and its results in the home of the method. The muscular force that these loops can exert is remarkable. In the leg, for example, he was unable to prevent the contraction of the loop even by applying all the force in his fingers. In the forearm and arm, the muscular power in the cinematized sets of muscles was also remarkable. Under the influence of the contraction of the loop in the stump, the fingers of the artificial hand can be flexed enough to grasp an article. But this grasp is very weak; it represents only 5 or 10 per cent. of this muscular force expended. The whole question and the future of these motor plastic operations depend on whether the prosthetic appliances can be perfected to transmit the muscular force in its entirety, or at least prevent such wasteful loss of power as at present. The prehensile force of the artificial fingers, even now, is enough for holding a pen or cigarette, wielding a fork, and lifting the hat, but in none of the cases he examined was there power enough in the fingers for manual work. However, the results already accomplished are a great gain for professional men, especially after bilateral amputation.

At the Rizzoli clinic at Bologna, Putti presented fifteen men who had been cinematized from six months to three years before, and at Milan Galeazzi gave demonstrations with ten others. Among them was one mechanic who was working a strong steel clamp with the cinematized biceps and triceps of his right arm, eighteen months after amputation of the arm. The precision of his movements was remarkable, and the clamp already showed signs of wear. Absolute fixation of the prosthetic appliance on the stump is indispensable to approximate natural conditions. The motor plastic operations are simple and easy. It may yet be possible to utilize separate muscles separately, and thus restore the play of the active and the antagonist muscles, instead of depending on the whole group at once. Surgeons must aim in their amputations henceforth to save as much as possible of the skin and soft parts, sacrificing the esthetic aspect of the stump to leave enough muscle and tendon material for ulterior and active utilization of the muscular force left in the stump. In conclusion Tuffier remarks that

no mechanical genius has as yet concentrated his attention on prosthetics, and the appliances in use are still clumsy.

Plague and Leprosy in the Bible.—Boinet's quotations show that the connection between bubonic plague and rats was known to the ancient Hebrews, and he ascribes to leprosy Job's "sore boils from the sole of his foot to his crown." The makers of false antiques in Palestine offer tourists silver mice which they claim to have excavated.

Unit for Ultraviolet Ray Doses.—Bordier utilizes for his unit the action of the ultraviolet rays on silver nitrate. This chromo-actinometer unit, as he calls it, corresponds to the quantity of ultraviolet rays which are able to reduce 1 mg. of silver to the square centimeter in a tenth-normal solution of silver nitrate 1 cm. thick. He tests for this unit with blotting paper impregnated with a 20 per cent. solution of potassium ferrocyanid. The color scale with this corresponds to 0.5, 2, 6, 12 and 18 units of quantity, representing the slight erythem dose, the erythem followed by desquamation; the photo-epidermitis, and intense photo-epidermitis. The 18 unit dose represents actual photodermatitis. He found with this color scale that a current of 6.5 amperes corresponded to 1 unit; 6 amperes to 0.8 unit; 5 amperes to 0.5 unit, and 4 amperes to 0.3. An old mercury vapor lamp yields only 0.5 unit while a new lamp yields 3 units during the same period of exposure. With this unit, he remarks, there is no further need for empiricism and guesswork in dealing with ultraviolet rays.

Modern Treatment of War Wounds.—Reynès presents data to prove that as early as November, 1914, he introduced in his service the method of clearing out at once all the devitalized tissues in a war wound, and thus claims priority for this method, which was generally adopted later.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 19, 1919, 43, No. 37

*Multiple Syphilitic Bone Lesions. A. Gilbert and F. Saint-Girons.—p. 1091.

*Familial Amyotrophy. Crouzon and Bouttier.—p. 1097.

*Alcoholic Meningitis. M. Villaret and others.—p. 1112.

*Glandular Functioning. H. Claude and S. Bernard.—p. 1116.

Share of Neo-Arsphenamin in Jaundice. H. Eschbach.—p. 1120.

Multiple Syphilitic Bone Lesions.—In the case reported by Gilbert and Saint Girons, in a woman of 52, there were seven foci of necrosis of bone, in the skull, radius, ulna, metacarpus and sternum.

Familial Amyotrophy.—Three sisters between 25 and 32 present different degrees of what Crouzon and Bouttier describe as a new variety of amyotrophy. The first symptoms appeared at 14, 22 and 12 years of age, and the older sister is unable to stand on account of the motor and atrophic disturbances. The speech is also spasmodic and panting, scarcely more than a whisper; the reflexes are abnormal, and there are choreiform movements.

Alcoholic Meningitis.—The subacute meningitis was explained by the alcohol found in the cerebrospinal fluid in the woman of 45. The symptoms were those of typical meningitis; syphilis and tuberculosis could be excluded, and the alcohol alone seemed to be responsible.

Tests of Endocrine Functioning.—Claude and Bernard have been giving organ extracts to healthy subjects and to those with various endocrine disturbances, seeking by these biologic tests to throw more light on the functioning of the different glands with an internal secretion. The responses differed widely from the normal after injection of pituitary extract in exophthalmic goiter, in hypothyroidism, and with suprarenal insufficiency. The different results obtained with organ extracts in different cases are readily explained by the varying preceding conditions in some of the endocrine glands. Among the practical results thus learned is that preliminary administration of thyroid extract or gland tissue enhances the action of the pituitary and suprarenal extracts.

Journal de Médecine de Bordeaux

Jan. 10, 1920, 91, No. 1

*Surgery on Native Africans. L. Verdet.—p. 7.

Pulmonary Sequelae of Mustard Gas Poisoning. H. Mallié.—p. 9.

*Hydrocyanic Acid. Chelle.—p. 14.

Surgical Experiences with Natives of French Colonies.—Verdelet was impressed with the extraordinary tendency to suppuration displayed by Africans on the slightest provocation. Suppurating hepatitis was common, and any lesion was liable to set up suppuration and cause the flaring up of old malaria or the onset of new, while the malaria in turn impeded the healing of the lesion. The malaria sometimes appeared disguised as acute appendicitis, orchitis, peritonitis or arthritis. He mentions further the ocular complications of malaria, and urges the advisability of preparing the subject for any operation by a preliminary course of quinin.

Toxicology of Hydrocyanic Acid.—Chelle reports experimental research which demonstrated that hydrocyanic acid and the alkaline cyanids become transformed under the influence of putrefaction processes into sulphocyanic acid. This is reversible under the action of a suitable oxidizer. After the death of a dog that had died ten minutes after taking 20 c.c. of a 1 per cent. solution of potassium cyanid, the organs were examined for hydrocyanic acid the second hour, and the eighth and thirteenth day. It had all disappeared, having become transformed to sulphocyanic acid, but it was easily transformed back again. This may prove useful in suspected cases of hydrocyanic poisoning.

Journal d'Urologie, Paris

December, 1919, 8, No. 5

- *Anatomic Results of Prostatectomy. L. Phélip.—p. 353.
*Prolonged Hematuria with Calculi. L. Escudié.—p. 381.
*Hematomas of the Spermatic Cord. J. Martin.—p. 387.

Anatomic Results of Prostatectomy.—Phélip has collected sixty cases in which necropsy (twenty-five cases), a second operation, or cystoscopy plus radiography disclosed the conditions left by the prostatectomy. They explain the recurrences in some cases; a second operation is generally successful, and completes, he says, "the fine anatomic findings after operations for hypertrophied prostate, whatever the route." In only two cases was a fistula left where the rectum had been injured during a perineal operation shortly before. In all the others with a fistula it had solidly healed.

Prolonged Hematuria.—Escudié reports four cases in which hematuria appeared suddenly without known cause, and without pain; it kept up during repose the same as when up and about; was refractory to all medical measures, and persisted for weeks and even months without much impairment of the general health, and it sometimes subsided and reappeared capriciously. The only clue to its nature was some incident in the past suggesting lithiasis or the roentgen discovery of a calculus. The influence of congestion was evident in some of his cases, as also in Hartmann's case in which hematuria kept up while the boy of 14 was in a plaster cast. Necropsy three years later disclosed a large stone in the right kidney.

Hematoma of Spermatic Cord.—Martin had two cases of this rare pathologic condition in two negro soldiers within two days, but no cases of the kind before or since. No cause for the hemorrhage could be discovered.

Lyon Médical

December, 1919, 128, No. 12

- Harmlessness and Value of Large Doses of Diphtheria Antitoxin. Péhu and P. Durand.—p. 592.

January, 1920, 129, No. 1

- Operative Indications in Acute Appendicitis. E. Villard.—p. 6.
*Hysterical Paralysis. J. Froment.—p. 21.

Hysterical Paralysis.—Froment reiterates the importance of treating promptly and curing, usually in a few hours, hysterical paralysis, as otherwise it may drag along and become indelibly fixed. The opportunities for such "miraculous cures" as are possible with hysteria are too few and far between for any of them to be neglected. There is no use wasting time in seeking for stigmata of hysteria; the search is liable to impress unfavorable ideas. They are far from constant in hysteria, and the search for them may do harm by its effect as suggestion. It must be borne in mind that although hysteria may simulate all kinds of nervous disturbances, it

generally simulates them in an incomplete form, and the absence of certain phenomena which we have reason to expect in a given clinical picture will reveal its hysterical nature, and show that it is pure fiction, although unconscious fiction, and often sincere. The subject is merely the victim of a simple illusion. The paralysis varies in its intensity from moment to moment, and according to the act required, and it may disappear completely at certain moments. In some movement, for example, or some attitude, we may detect the intervention of some group of muscles which seemed before to be totally impotent. Such paradoxical findings, along with the anatomic and physiologic integrity of the limb affected, speak in favor of hysteria. It is important, however, to detect any associated organic disturbance which would hamper or annul the measures directed to the hysteria. The treatment requires on the part of the physician an inflexible will, patience, tenacity, kindness, iron energy, absolute confidence in the outcome, skill and self-possession. It is useless to reason with the patient. By varying the points of attack we seek to detect some movement in the paralyzed limb and convince the patient of his ability for movement, and start on from this for further progress. The hysterical paraplegic, for example, should be stood on his feet, and by aiding and making him walk, demonstrate to him that he can walk. Skill and tact are necessary to keep him from falling and from fruitless attempts, which confirm him in his conviction of his absolute paralysis. Sometimes it may take three or four hours to accomplish the result, but the session should not be concluded until some striking result has been attained, so that there can be no going back.

Médecine, Paris

January, 1920, 1, No. 4. Ophthalmology Number

- *French Ophthalmology. A. Cantonnet.—p. 195.
Advancement for Strabismus. Duverger and Mettey.—p. 200.
*Purulent Ophthalmia in Adults. Aubaret.—p. 202.
Dacryocystectomy. R. de Saint Martin.—p. 205.
*Cauterization for Dacryocystitis. L. Vacher and M. Denis.—p. 207.
*Foreign Bodies in the Eye. Vinsonneau.—p. 208.
*Harvesters' Keratitis. Chenet.—p. 210.
*Dilation of Orbit. P. Jeandelize.—p. 213.
Trephining in Glaucoma. A. Cantonnet.—p. 214.
*Iodin Treatment of Corneal Ulcer. A. Cantonnet.—p. 215.

French Ophthalmology, 1914 to 1920.—This entire number of *Médecine* is devoted to ophthalmology. Cantonnet lists among the lessons from the war the importance of fatigue and emotional stress in bringing on hemeralopia, and the frequent involvement of the eyes in dysentery, etc.: conjunctivitis and iritis in dysentery, keratitis and iritis in malaria, and recurring iritis in spirochetal jaundice. Similar complications ascribed to antityphoid vaccinations have been numerous, but analysis of them always disclosed a preexisting taint or predisposing factors or defective technic. The conclusion is obvious that the condition of the uveal tract should be ascertained before vaccinating against typhoid, especially subjects over 35 years old. He discusses further the disturbances in vision with pituitary enlargement, and the benefit from radiotherapy. Pituitary treatment may yield good results. If operative measures are necessary, access through the nose is less dangerous, and sometimes merely trephining the posterior wall of the sphenoidal sinus relieves the compression enough without exposing the pituitary. The cure of squint by exercising the eyes, without an operation, has been reported by several. Bailliart has invented an oscillometer which, pressed on the eyeball, renders visible the pulse in the retina. Terson has added another sign to those in vogue for determination of actual death: One or two drops of a mixture of copper glycerolate and ethylmorphin glycerolate are instilled in the conjunctival culdesac. If life is still present, the conjunctiva turns red. New, also, Cantonnet adds, are the aviation tests for the velocity of the visual acuity, for nocturnal vision, and for vision facing sun glare.

Treatment of Gonococcus Ophthalmia in Adults.—Aubaret insists on the importance of rinsing out the eye thoroughly whenever pus reappears. Every two hours, day and night, the conjunctival culdesacs should be cleaned out with a

cotton pad, or with a douche can and glass cannula, using a tepid 1:2,000 solution of potassium permanganate, or 1:3,000 of mercuric cyanid. He describes further the specialist treatment, and warns the physician to use protecting goggles.

Suppurating Dacryocystitis.—Vacher and Denis describe how to clear out the purulent secretion in the lacrimal sac and to disinfect it with $\frac{1}{3}$ c.c. of chromic acid in a 1:50 solution, injected by the inferior canaliculus while an assistant at the same time instills hydrogen dioxid into the eye to neutralize any excess of the acid. After allowing two or three minutes for the acid to act on the lacrimal passages, he rinses them out with hydrogen dioxid. Preliminary cocainization of the eye and lacrimal passages is necessary, and mechanical clearing out of the inferior canaliculus. The following days the eyelids and eyes are laved in hot water, squeezing out the contents of the lacrimal sac by pressure on the internal angle of the eye. This cauterization with chromic acid has often rendered dacryocystectomy unnecessary in their experience, while it has always proved harmless and effectual.

Foreign Bodies in the Eyes.—Vinsonneau says that any practitioner can remove a foreign body from the eye if it is not embedded too deep and is recent. When it is located deep or has been in the eye several days, he should not attempt its removal, but send the patient at once to the specialist.

Harvest Keratitis.—Chenet warns that the slightest excoriation of the cornea when there is an infectious process in the lacrimal passages is liable to induce a serious corneal ulcer. Eleven such cases were recently under observation during harvest time, all requiring surgical measures, and all impairing vision to a certain extent. All the men had chronic lesions in the lacrimal passages.

Dilation of the Orbit.—Jeandelize stretches the too narrow orbit by progressive dilation with vulcanite casts of increasing sizes, made from a paraffin cast.

Iodin Applied to the Cornea.—Cantonnet reiterates that the cornea tolerates perfectly a 1:20 or 1:30 tincture of iodine, after preliminary application of 3 or 4 per cent. cocain. The iodine is taken up on a probe or glass rod and is held in the air for a minute or two to give the alcohol time to evaporate. Then the corneal ulcer is touched with it. The iodine cannot diffuse, as it is almost solid, and the conjunctiva thus escapes. The tincture should be less than 15 days old.

Presse Médicale, Paris

Jan. 7, 1920, 28, No. 2

*Tuberculosis of the Spine. J. Calvé.—p. 13.

*Electro-Optic Rectoscope. D. Pamboukis.—p. 15.

Tuberculosis of the Spine.—Calvé insists that operative measures are useless and harmful in the early stages of Pott's disease in children. On the other hand, they are directly indicated in adults in the same conditions, as adults do not possess the faculty of spontaneous complete recovery which is peculiar to childhood. Orthopedic treatment with immobilization for three or four years results in complete consolidation in children, but the adult spine requires support as it never regains its full strength. The child with Pott's disease should be given general treatment for tuberculosis as well as the local orthopedic treatment. The organization of enough sanatoriums to allow this is the solution of the problem. For adults, the slight tendency to destructive processes and the lack of compensating processes are further reasons for reinforcing the spine by a grafting operation. He gives an illustrated description of his modification of the Hibbs technic. He makes a bed for the implant by cutting out the spinous process, leaving a right-angled cavity. Then he slits the lamina to each side, to the base of the transverse process, and turns back the piece thus pried up. This leaves a long, large freshened bed in the diseased vertebrae and in the sound vertebrae above and below. This gives a solid hold for the implant. The spinous processes resected are cut up into small pieces and are scattered along the whole length of the graft. This does away with the objections to the ordinary Hibbs method, which seems to

be better adapted than the Albee method to the dorsal region. Lower than this, the Albee technic has given fine results in his hands. The article is illustrated.

Rectoscope.—The four branches of Pamboukis' rectoscope spread apart after the instrument has been introduced closed. One branch is graduated, and the electric light is shielded from the eyes, while a telescope system magnifies the findings.

Jan. 17, 1920, 28, No. 5

*Dextrocardia and Dextroversion. H. Vaquez and Donzelot.—p. 41.

*Albumin Content of Cerebrospinal Fluid. Ravaut and Boyer.—p. 42.

Aseptic Pleural Effusion after Influenza. G. S. Coskinas.—p. 43.

Dextrocardia and Dextroversion.—Vaquez and Donzelot report two cases in which the long axis of the heart pointed to the right side, and yet the electrocardiograms were normal. Inversion of the cavities of the heart is the result of abnormal embryonal development, but when there is not inversion of the cavities, then the mirror aspect of the heart is always merely a mechanical displacement, with or without secondary malformation of the orifices. This seems to be the condition in these cases, both being apparently merely instances of congenital dextroversion of the heart.

Albuminimeter.—Ravaut and Boyer estimate the percentage of albumin in the cerebrospinal fluid by comparing the opacity of the fluid with that of a mixture of a solution of silver nitrate and of sodium chlorid. Two test tubes are graduated specifically for the calculation, and the whole procedure takes only a few minutes. The findings are as exact, they declare, as with any of the current methods, and no more than 1 c.c. of the spinal fluid is required for the test.

Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1919, 14, No. 10

*The Brussels Congress. L. M. Pierra.—p. 377.

The Brussels Congress.—This entire number of the *Revue* is devoted to the proceedings at the First Congress of the Association of French-Speaking Gynecologists and Obstetricians, held at Brussels last September. Most of the communications have been summarized in THE JOURNAL from various journals or in the special correspondence.

Revue Médicale de la Suisse Romande, Geneva

December, 1919, 39, No. 12

*Intradermal Urine Test for Tuberculosis. F. Miche.—p. 567.

*Case of Codein Poisoning. L. Boissonnas.—p. 581.

Protracted Peritonitis from Typhoid Perforation. P. Gautier and P. Brutsch.—p. 587.

Vincent's Angina Simulating Hard Chancre. G. Cornaz.—p. 591.

Intradermal Urine Test for Tuberculosis.—Miche has simplified the technic for using urine from a tuberculosis suspect in place of or to control the tuberculin test, and reports that the findings paralleled those with the latter test in seventeen cases in which both were positive, and in four cases in which both were negative, but in four other cases they conflicted. With the urine extract the reaction is more pronounced in the very active cases, and it is weak in the cases with a more favorable prognosis, thus throwing light on the outcome. He explains this by the fact that the urine is a tuberculin-antituberculin, more potent in the more active cases. He evaporates fresh urine and uses the desiccated urine with 2 c.c. of distilled water, forming a 10 per cent. solution, and applies it for the test by the skin or the intradermal tuberculin technic.

Case of Codein Intoxication.—The boy of 3 was given 0.04 gm. of codein by mistake for calomel. There were no symptoms for forty-five minutes, then intense headache, stiffness and unconsciousness, imperceptible pulse, contracted pupils, and stiffness of the neck, the head thrown back, testified to the severity of the toxic action. The muscles in the legs were relaxed. The heart was beating at 120 and râles were heard at the hilum. Half an hour after a tepid enema and injection of camphorated oil, the child became conscious. The injections of camphorated oil were continued every two hours, and wet cups were applied to the dorsolumbar region, and the child was made to drink freely of black coffee,

diuretic teas and mineral waters. There were several convulsions but the symptoms had all subsided in three hours except for anuria and drowsiness. The anuria persisted for two days; the distended bladder was punctured the first evening, and 400 c.c. of urine withdrawn, as repeated attempts to introduce the catheter had failed. The nature of the substance given in place of the supposed calomel was not known until after several hours, the sugar with the powder interfering with the chemical tests. The literature on codein poisoning is reviewed. The loss of consciousness is constant in such cases; if this stage does not end in the fatal collapse, agitation, vomiting and gastralgia, convulsive movements and exaggeration of the reflexes are the usual symptoms. Dilation of the pupils was noted in some cases and contraction in others. In dogs, the narcotic stage is accompanied by miosis which changes to mydriasis in the stage of agitation. Retention of urine has been noted with 0.1 to 0.2 gm. of the drug.

Pediatrics, Naples

January, 1920, 28, No. 1

Malta Fever. G. di Cristina and S. Maggiore.—p. 1. To be cont'd.

*Symptoms from Cavity in Child's Lung. C. L. Rusca.—p. 23.

*Spina Bifida. R. Vaglio.—p. 33.

Symptoms from Cavities in the Lungs in Children.—Rusca expatiates on the misleading findings with a cavity in a child's lung, as the walls and tissues are so elastic that the vibrations are transmitted to remarkable distances. There is actually no absolutely pathognomonic sign of a cavity; the presumptive signs have to be considered in connection with the roentgen findings.

Spina Bifida.—In the last six years twenty-three cases of spina bifida have been under treatment at the children's clinic in Naples. In one case it was double, both cervical and lumbar; in another, the tumor returned as hydrocephalus developed after the operation for the spina bifida. In 52 per cent. there were other malformations; inherited syphilis was manifest in 39 per cent. This suggests the advisability of specific treatment preliminary to operation when there is the least suspicion of the inherited taint. Vaglio thinks it is wiser to defer operating for spina bifida until the infant is a little older, unless one's hand is forced.

Revista Española de Obstet. y Ginecología, Madrid

October, 1919, 4, No. 46

*Extra-Uterine Pregnancy at Term. P. Nubiola.—p. 433.

Radium Treatment of Uterine Cancer. Vital Aza.—p. 440. Cont'n.

*Delivery of Thoracopagus Monster. Roig-Raventos.—p. 449.

Delivery of Viable Child from Extra-Uterine Pregnancy.—Nubiola ascertained that the pregnancy was continuing apparently normally although the fetus had slipped into the abdominal cavity. The woman was kept under surveillance, and was delivered by a laparotomy at term. The left tube was adherent to the membranes; the ovum had probably been embedded primarily in this tube. It was resected, and the placenta was separated by hand—a most tedious task as it was attached besides to the posterior surface of the uterus, the Douglas pouch, to portions of the rectum and cecum and to several loops of the bowel. Step by step, with numerous ligatures, the placenta was pried loose, leaving an extensive raw surface with merely slight oozing of blood. The child seems to be normal, and at 4 months weighed 5 kg. Marsupialization and abandoning the membranes and placenta may be required in exceptional cases, but only when conditions are too grave to remove them at once. Nubiola reviews what others have written on the subject, including Harris' thirty cases (1888) and R. Costa's monograph (1915), and nine in recent Spanish literature. In his case he irrigated the abdominal cavity by the Carrel-Dakin method, commencing the seventh day when the temperature had begun to rise. At the third week a scrap of gangrenous membrane tissue was expelled, and, after this, recovery was soon complete.

Thoracopagus.—Roig-Raventos describes the maneuvers necessary for extraction of the united twins. The membranes had ruptured four days before. The cause of the obstruction

to delivery was not recognized until the united trunks came into view. The total weight was 7,500 gm. and the placenta weighed 1,800 gm. When he saw the case there was no circulation in the cord, and evisceration aided delivery.

Mitteilungen aus der Med. Fak. der Univ. zu Tokyo

Jan. 27, 1919, 21, No. 1

*Morphology of Spleen Tumors. Y. Nishikawa.—p. 1.

Morphology of Spleen Tumors.—Nishikawa's monograph fills the 216 pages of the issue, and is accompanied by twenty-nine photomicrographs and a bibliography of the titles of 154 articles. The morphology is compared of the various chronic tumors of the spleen, enlargement with malaria, cirrhosis of the liver, leukemia and simple congestion of central or peripheral origin, syphilis, schistosomiasis and Banti's disease—a total of 116 cases. The regular and even fibrous degeneration of the spleen in Banti's disease is so constant and so extreme that it may be regarded as almost pathognomonic. The enlarged spleen is the primary site in this disease, and consequently splenectomy is the rational treatment of Banti's disease. The characteristic microscopic findings in this and other diseases are compared in fourteen folding tables, the cases listed under eighteen headings, including the blood and marrow findings, duration, and various clinical symptoms.

Berliner klinische Wochenschrift, Berlin

Oct. 27, 1919, 56, No. 43

*Comparison of Wassermann and Sachs-Georgi Tests. A. Raabe.—p. 1012.

*Stages of Pulmonary Tuberculosis. K. Engelmeier.—p. 1014.

*Tuberculosis of the Larynx. J. W. Samson.—p. 1018.

*Erythema Dose in Hard-Ray Roentgenotherapy. F. M. Meyer.—p. 1020.

Increasing Spread of Quackery. Neumann.—p. 1021.

Comparative Investigations with the Wassermann and Sachs-Georgi Tests.—Raabe reports the results of a series of comparative Wassermann and Sachs-Georgi tests, and gives a detailed description of the modified technic for the latter. It is applied with physiologic sodium chlorid solution and natural cholesterolized organ extracts. Of the 1,750 parallel tests, 569 were positive by both the Wassermann and the Sachs-Georgi reaction, while 1,005 cases were negative by both tests. Of the 569 positive cases, 519 had been clinically diagnosed as unquestionably syphilis. In view of the close agreement between the results secured by the two methods, the writer concludes that, from the standpoint of diagnosis, therapy and prognosis, the Sachs-Georgi precipitin test deserves ample recognition, but she does not think that it can be regarded, even with its simplified technic, as a substitute for the Wassermann reaction. Its value as a control of the Wassermann reaction is, however, already established.

The Clinical Value of Recent Classifications of the Stages of Pulmonary Tuberculosis.—The clinical need of a practical classification of the various stages of pulmonary tuberculosis has long been felt and many attempts at classification have been made. Engelmeier describes in detail several methods of classification and the principles on which they are based. He favors Ranke's classification, who, he thinks, is without doubt on the right track, in that he considers not only the organ in question—the lungs—but also the behavior of the whole organism. Ranke's views need, however, further elaboration and confirmation in order to make them more valuable to the practicing physician. More important than the classification of the disease is the proper evaluation of the patient. We must remember that we are not treating a disease, but a sick person.

Tuberculosis of the Larynx.—Samson confirms previous reports that the increase in tuberculosis during the war period in Germany has been very marked. This has attracted the attention of all concerned to the various complications under which the disease appears, and Samson finds that our views with respect to tuberculosis of the larynx, especially, need some revision, owing to the exceptional danger of infection from it. It is estimated that the percentage of

patients with laryngeal tuberculosis whose sputa contain tubercle bacilli is twice as great as the number of patients with pulmonary tuberculosis of whom this is true. According to Bingler the proportion is even greater (75.8 per cent. as compared with 30 per cent.). These figures show the great importance of measures for the protection of the patients' families and the general public. For the purpose of early diagnosis of tuberculosis of the larynx, which thus becomes imperative, it is desirable that the lung specialist should also be a throat specialist. Samson emphasizes the need of isolation of such patients in the family, as the danger of spreading the infection is a thousand times greater than in the case of pulmonary tuberculosis. With the latter, care in collecting and disposing of the sputum will accomplish much in the way of prophylaxis, but with tuberculosis of the larynx such care is in vain, owing to the danger of infection from sudden coughing spells and the increased respiratory effort in speaking, as has already been pointed out by Friedrich. The need of isolation applies to hospitals and sanatoriums as well as to families.

Erythema or Normal Dose in Hard-Ray Roentgenotherapy.—Meyer is convinced that widespread uncertainty exists as to what constitutes an erythema, or normal, dose in hard-ray roentgenotherapy. He thinks this uncertainty is due to the fact that formerly roentgenotherapy with medium soft rays prevailed, and that here there was an accidental correspondence between the desired biologic effect and the effect on a certain chemical substance—barium platinocyanid—in a dosage that produced a certain definite coloring, known as Tint B, when applied to a patient caused an erythema of the skin (allowing, of course, for idiosyncrasies and the fact that certain parts of the body—the face, for instance—are more sensitive than others). Meyer fears that these same conditions are still being applied by some to the hard-tube irradiation, with the result that, from a practical standpoint, the technic is defective and too small doses are given. The harm lies not only in the fact that patients are thus deprived of the maximal benefit, but also in the added fact that in the treatment of malignant growths an underdose, instead of paralyzing or destroying malignant cells, may be just suited to incite them to increased proliferation. Meyer states further that if a disease does not react to one form of irradiation, one should not assume on that account that it will not react at all. A change in our therapeutic program and our technic will often bring about the desired results.

Deutsche Zeitschrift für Chirurgie, Leipzig

March, 1919, 149, No. 1-2

- *Gastric and Duodenal Ulcer. A. Troell.—p. 1.
- Gas Cysts in Brain from War Wounds. Goldammer.—p. 86.
- Emergency Treatment of War Fractures. O. Braun.—p. 100.
- Ileus from Shellac in Small Intestine. W. Bellmann.—p. 127.
- *Dislocation of First Tarsometatarsal Joint. Girgensohn.—p. 135.

Surgery of Gastric and Duodenal Ulcers.—Troell reviews the experiences at the Serafimer Hospital at Stockholm since 1907 with operative measures for gastric and duodenal ulcers, a total of 234 cases, and compares them with results reported by others. His bibliography includes 191 works. Multiple ulcers were found in 5 per cent. There was appendicitis in only 9 cases, and gallstones only in 2. The time of onset of the pains did not correspond infallibly to the location of the ulcer, although there was some evidence which suggested that the degree of the acidity or disturbance in motor functioning determined the character of the pains. Pronounced hyperacidity with an extrapyloric ulcer may induce pains like those of a juxtapyloric ulcer. On the other hand juxtapyloric duodenal ulcers may induce pains of the extrapyloric gastric ulcer type. He queries whether this is a general rule or not. In many of the cases there had been no pains or they had been slight. He queries further whether there is any special region in the stomach where ulceration never induces pain. Attenuation of the pains on change to reclining on the left side was noted with 3 extrapyloric gastric cancers; 3 patients were relieved by lying down; 1, with a duodenal ulcer, by standing up. In 26 cases, including 11 extrapyloric gastric ulcers, the pains were relieved by

eating something; in 38 cases, by vomiting. A connection with constipation was evident in a few cases, the pains being relieved by defecation. There had been diarrhea in 27 cases. The symptoms that never proved misleading included tenderness over the duodenum, the protruding or receding pocket, the air bubble at the top of the duodenum, the retraction in the wall at one point, and rapid passage of the chyme through the duodenum, or antiperistalsis. But displacement of the pylorus to the right may occur with gastric ulcer, and the chyme may linger in the duodenum.

The mortality of the ulcer operations was 8.5 per cent. before 1916 and 6 per cent. since then, mostly from peritonitis and lung complications. Troell's conclusion from the gastric ulcer cases is that resection, with gastro-enterostomy, guarantees best complete recovery, and this without any more operative risk than gastro-enterostomy alone. This applies both to transverse and to segmental resection, plus the gastro-enterostomy. All this material is tabulated under various headings, as also the roentgen findings in 64 cases, reexamined later. The latter group teach the necessity for making the gastro-enterostomy well toward the right to avoid production of a blind pouch. Another point learned is the unreliability of measures to shut off the pylorus, and it is a question whether there is any use in attempting it. The experiences related show further the possibility of secondary hour-glass constriction of the stomach after terminal suturing together of the stumps. In 13 per cent. of the total ulcer cases, with long survival, the operation did not improve conditions. This group included 10 per cent. of the hour-glass stomach cases; 10 per cent. of the antral gastric ulcer cases; 10 per cent. of the pyloric duodenal ulcers, 11.5 per cent. of the extrapyloric gastric ulcers; 20 per cent. of the extrapyloric duodenal ulcers, and 41 per cent. of all the cases with dubious operative findings. Thus, no improvement followed the operation in 41 per cent. of all the cases with inconclusive operative findings, and this teaches, Troell declares, the advisability of refraining from any operation when the exploratory incision fails to show any crater, scar, or other evidence of ulcer.

Dislocation of the First Tarsometatarsal Joint.—Girgensohn advocates immediate reduction, giving the roentgen findings in a case. A fall from a horse is the most frequent cause of the luxation. The prognosis is good with proper treatment.

April, 1919, 149, No. 3-4

- *Gastric and Duodenal Ulcers. W. Reinhard.—p. 145.
- Habitual Dislocation of Patella. F. Lückerrath.—p. 236.
- Irrigation Treatment of Inflammation in Abdominal Cavity. J. J. Stutzin.—p. 265.
- The Murmur in Aneurysms. A. Israel.—p. 281.

Gastric and Duodenal Ulcer.—Reinhard devotes ninety pages to a critical summary of the experiences at the Hamburg clinic with 68 cases of gastric ulcer; 36 of pyloric; 33 of duodenal and 13 of dubious duodenal ulcer with 9 cases of cicatricial stenosis of the pylorus. The symptoms and clinical picture in practically all pointed unmistakably to ulcer, but not to its location. The symptoms with gastric ulcer were often those supposed to be typical of duodenal ulcer and vice versa. Palpation gave instructive findings in 79.8 per cent. but not as to the location. The chemistry of the stomach was normal in nearly 50 per cent. Roentgen findings were conclusive as to the ulcer but were not always a reliable guide to its site.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 8, 1919, 2, No. 19

- *To Prevent Loss of Vitreous Fluid. J. van der Hoeve.—p. 1426.
- *Testing Permeability of Lacrimal Canal. G. F. Rochat.—p. 1429.
- *Metastatic Sarcoma in the Eye. G. ten Doerschate.—p. 1432.
- *Refraction in Semidarkness. F. Wibaut.—p. 1437.
- *Syphilis of the Stomach. G. O. E. Lignac.—p. 1441.
- Emergency Tracheotomy on Account of Goiter. H. van der Tak.—p. 1448.

To Prevent Loss of Vitreous Fluid in Operations on the Eyes.—Van der Hoeve gives an illustrated description of the four threads method with which he lifts up the anterior wall of the eyeball. The vacuum made by lifting up the wall aspirates back any of the vitreous fluid that is on the point

of escaping. Each thread is passed through the outer layers of the cornea, close to the iris, to form four loops with which the two assistants lift up the wall when loss of the fluid is impending. The loops are useful also for other purposes, as he describes.

Test for Permeability of the Lacrimal Canal.—Rochat comments on the difficulty sometimes experienced in determining whether the lacrimal canal is normally permeable, as the pressure required to force fluid through the canal varies so widely. His own research seems to show that the pressure required in normal conditions is from 17 to 22 cm. water. When greater pressure than this is required, the lumen is certainly pathologically narrow.

Metastatic Sarcoma in the Eye.—Ten Doesschate reports a case, in a woman of 49, of primary melanosarcoma in the right eye with multiple metastases, including one in the left eye. In a second case, a woman of 50, a pigmented nevus below the right breast became transformed into a sarcoma, and was excised in 1914. In 1917 metastases developed in the brain and skin and in the uvea of one eye and in the retina of the other eye, but the papilla escaped. He does not know of any record of similar metastasis in the retina from a tumor elsewhere. A few cases are cited of metastases in the eye from sarcomatous degeneration of a nevus on the cheek, parotid region, etc., but none were on the retina. Primary sarcoma in both eyes has been reported by Fuchs and five or six other writers.

Refraction in Semidarkness.—Wibaut asserts that the refraction increased by 0.5 to 1.5 D in semidarkness in seven persons tested. Charpentier reported eighteen years ago that myopia becomes exaggerated in the dark; he found differences up to 3 D in some, and in himself up to 2 D. Wibaut explains the mechanism of this.

Syphilis of the Stomach.—Lignac resected the middle third of the stomach for supposed cancer in a man of 52, and the latter has been in good health during the nine months to date, but the resected portion showed merely chronic gastritis, gummas and syphilitic ulcers, no signs of malignant disease. Dubuc gave specific treatment in a case of supposed cancer of the stomach and the results were excellent, as also in several of Fenwick's cases of supposed gastric cancer. Lignac queries whether we ought not to rank gastric syphilis beside ulcer, gastric cancer, and gastric crises in studying puzzling cases of pathologic conditions in the stomach. The absence of tertiary manifestations elsewhere should not exclude syphilis. This lesson was taught by the case here reported in which there was nothing to suggest syphilis before the operation; even the Wassermann test was negative. Benefit from specific treatment should be evident in five days, but relapses are liable. The great danger is hemorrhage from an eroded vessel. Fränkel has reported a case of peritonitis from perforation of a gummatous ulcer. In Nathan's case, mercurial treatment of a tertiary syphilitic lesion on the arm cured at the same time pathologic conditions in the stomach which had been causing symptoms for ten years. The pains may be severe, especially at night, and the clinical picture in general may simulate gastric ulcer, cancer or tabetic crises.

Hospitalstidende, Copenhagen

Jan. 7, 1920, 63, No. 1

*Bromid Infusion in Psychoses. C. Jørgensen.—p. 12.

Bromid-Saline Infusion in Treatment of Psychoses.—Jørgensen relates that bromid by the mouth has not been satisfactory in the treatment of psychoses in Jacobsen's service. Since they have been giving it by the subcutaneous route, the results have been immeasurably better. They give it in saline infusion, and assert that this treatment is more potent in controlling maniacal attacks than any other simple and harmless measure known to date. The mother solution is made with 150 gm. sodium bromid; 7 gm. calcium chlorid; 3 gm. potassium chlorid, and distilled water to 300 c.c. For the infusion they use 20 or 30 c.c. of this solution in a liter of water. It is thus a slightly hypotonic or isotonic saline solution with a content of 15 gm. sodium bromid. This

infusion once or twice a day aids in combating the toxic factors responsible for the exacerbation, while the substitution of the bromid for the usual sodium chlorid in the saline solution has an exceptionally prompt sedative action. Nine cases are described to show the efficacy of this treatment, arresting convulsions and delirium. Some of the patients responded in cases refractory to the usual narcotics with a slight rise in temperature, and one, a previously healthy woman of 46 with acute mania for a week, developed a slight and briefly transient collapse condition after one of the bromid-saline infusions, but she also had the same after an ordinary saline infusion. As 103 gm. sodium bromid is the equivalent of 58.5 gm. sodium chlorid, the solution used is equivalent to an ordinary 8.5 per thousand solution of sodium chlorid. In the two latest cases they gave 80 gm. and 105 gm. of the bromid in the course of four days, and the acute mania subsided.

Jan. 14, 1920, 63, No. 2

*Cholelithiasis and Achylia. F. Rydgaard.—p. 17. Begun No. 1, p. 2.

Cholelithiasis and Achylia.—Rydgaard found achylia in 47.4 per cent. of Rovsing's operative gallstone cases, and in 52 per cent. of a total of 471 cases compiled, including the Rovsing cases in 26 men and 132 women. The sex and age do not seem to influence the achylia, but 74 per cent. of the 135 patients with stones obstructing the cystic duct had achylia or hypochylia. In some cases the achylia developed as the cystic duct became obstructed, showing the special dependence of the former on the latter. It seems plausible to assume that the incontinence of the sphincter papillae, which is so often entailed by the stretching of the cystic duct by the gallstones, upsets the physiologic process of the neutralizing of the acid stomach content by the bile. The former is poured out unneutralized into the duodenum, and the irritation of the duodenal wall from its acidity sets up reflex action which entails the achylia. When the sphincter is normal, there is no achylia notwithstanding the presence of gallstones. Other arguments are presented which sustain Rovsing's conviction that the gallbladder is a physiologically important organ, and that it should not be removed without imperative indications for this. Cholecystotomy is all that is necessary in many cases to cure both the gallstone disturbances and the achylia. Even if there should be recurrence of stones, this is not enough of a reason for removing the gallbladder, any more than the kidney under similar conditions. The experiences related and the theoretical reasoning all emphasize the necessity for early operative measures in cholelithiasis, getting rid of the stones before the cystic duct has been stretched to a degree that entails incontinence. An early operation also wards off achylia and, in warding this off, prevents infection. As soon as the first symptoms warn of the presence of gallstones, operative measures should be applied at once, Rydgaard reiterates in conclusion.

Norsk Magazin for Lægevidenskaben, Christiania

January, 1920, 81, No. 1

*Cesarean Section at Christiania. K. Brandt and C. Smith.—p. 1.

*Diet with Insufficiency of the Kidneys. K. Motzfeldt.—p. 13.

*Vital Staining of Nerve Cell and Its Consumption of Oxygen. G. H. Monrad-Krohn.—p. 36.

Pathologic Anatomy of Influenza and Its Complications. F. Harbitz.—p. 46.

Cesarean Section.—Brandt and Smith analyze the record at Christiania of sixty-two classical cesarean sections and forty vaginal in the last thirteen years in a total of 18,140 childbirths. In 87.5 per cent. the operative delivery was the last resort in eclampsia, and 80 per cent. of the women were saved by it; in 10 per cent. of the others, necropsy disclosed irreparable lesions of internal organs. Central placenta praevia was the indication for the classic section in two cases, with recovery in both. They regard vaginal section as irrational for placenta praevia; the difficulty is to recognize the central placenta in time.

Dietetic Treatment of Insufficiency of the Kidneys.—Motzfeldt insists that functional tests of the kidneys must be the guide for treatment, varying the diet to conform to the individual conditions at the time. He recalls that restriction

to milk in systematic treatment of Bright's disease was preached by Chrestien of Montpellier four years after Bright's publication. His motto was "Milk or death"; but we know now that abstention from salt and a low protein diet are the essential features of dietetic treatment, and that milk does not conform entirely to either essential. Carbohydrates and fats can be disregarded and be allowed, free from restrictions, but the water balance, the mineral metabolism, and the nitrogen intake must all be studied and regulated according to the tolerance. Retention of salt may be a secondary phenomenon, and extrarenal factors probably play a large part in it, so that it is scarcely correct to speak of the kidney's "permeability for sodium chlorid." From the therapeutic point of view this is of minor importance, but it is still a question whether the sodium or the chlorid element is the responsible factor. Thorling regards the sodium as more directly influencing the water balance, so that attempts to substitute sodium chlorid with sodium bromid or citrate or other sodium salt are not rational. Motzfeldt warns against the routine use of a salt-free diet, saying that it has not fulfilled the anticipations roused by Widal's cases, and even at the best, the conditions may be so grave that the strictest reduction may not have any effect. It should be given a trial, however, and be continued for several weeks. The outcome was most striking in one case of acute nephritis in a young man; on the salt-free diet he lost 27 kg. in weight in twenty-two days. He eliminated 250 gm. of chlorids in the urine, which corresponds to 27 liters of a 9 per thousand saline solution. Widal has reported a case with loss of 28 kg. in seventeen days. Widal regards 1.5 gm. as the ordinary sodium chlorid requirement, below which it is unwise to go for a long period; Romberg says that 5 gm. is the limit; Strauss, 2 gm. In uremia with convulsions, if the phenolsulphonephthalein test shows normal conditions, the protein intake need not be restricted. But otherwise a low protein diet is indispensable, down to 20 or 30 gm. temporarily; 50 gm. seems to be the lowest limit that can be borne for any length of time. Restriction of the protein reduces the uremia, attenuates the clinical symptoms, and renders the prognosis more favorable, as Motzfeldt shows by four cases. The effect can never be definitely determined beforehand, and it should always be given a trial, especially in the acute exacerbations of chronic nephritis. It may take several days for the effect on the uremia to become manifest. When the nitrogen content of the blood has been brought down to normal, the patient's tolerance for protein should be carefully determined. His charts give the protein intake curve, the degree of azotemia and the phenolsulphonephthalein findings curve. In conclusion he reiterates that the diet with kidney insufficiency should be determined and enforced with as much care as in diabetes.

Vital Staining and Oxygen Consumption of Nerve Cells.—Krohn describes Mott's recent research on the consumption of oxygen by nerve cells and the transformation of chromomethylene blue into leukomethylene blue in the living nerve cell, and the reversible transformation when oxygen is supplied. In Mott's work on shell shock he explained how the smaller nerve cells are particularly susceptible to deprivation of oxygen, as they have so little reserve oxygen to draw on, in comparison to the larger cells.

Ugeskrift for Læger, Copenhagen

Jan. 8, 1920, 82, No. 2

*Hysteria in Children. Monrad.—p. 31. Begun in No. 1, p. 1.

*Torsion of the Omentum. H. O. Wildenskov.—p. 40.

*Inherited Neurosyphilis. K. Baagøe.—p. 42.

Hysteria in Children.—Monrad gives a brief review of the recorded history of hysteria in children, the etiology and the pathogenesis and then describes the extremely varied manifestations of hysteria in children. He emphasizes that in children it is monosymptomatic, that is, there are merely single or a few manifestations while there are none of the permanent symptoms, the so-called stigmata. Over 200 cases of hysteria in children have been encountered in his practice in the last ten years. It simulated in the different cases almost the entire range of organic pathologic con-

ditions in the nervous system, the urogenital and digestive apparatus, and the abdomen, besides various surgical processes. Numerous instances of each type are described and the treatment found most effectual. The prognosis of hysteria is far more favorable in children than in adults. Treatment has to be exclusively psychotherapy and this requires skill and tact, and usually removal of the child to some wholesome environment where he will not be the central figure. The transference to a hospital may make the child forget his hysteria completely. The psychotherapy may be masked with some local application to cause a little pain or shock, but the main thing is to impress the physician's authority on the child while convincing him that the doctor is his friend. Sometimes a child with astasia-abasia can be cured by standing him up on the floor and categorically commanding him to walk. A promised reward may aid in some cases. A sudden cold douche or electric shock on the region affected may succeed, but Monrad warns that when any of the above measures fails, it is useless to repeat it.

In a paroxysmal form of hysteria, systematic ignoring of the child often proved effectual; especially when the child was allowed to overhear the persons in the room speaking of what would have to be done to him if the attacks continued. Examination under a general anesthetic, besides roentgenoscopy and tuberculin tests, may be necessary to exclude organic bone disease. One little girl had a hysteric sacrocoxitis, others hysteric neuralgia in the knee, hip joint, heel or spine. There was usually a history of some trauma attracting attention to the region and the cure is often tedious then as the local measures applied had anchored the hysteria more firmly. In the case of one girl of 5 a specialist had diagnosed cervical spondylitis and insisted on orthopedic treatment. The symptoms became so alarming that the child was taken into the general hospital where the diagnosis was changed to hysteria from the negative tuberculin and roentgen findings, the history of pediculosis with impetigo and swelling of the glands in the neck, causing pain when the head was moved. The torticollis, etc., were only the hysteric prolongation of a previous reflex torticollis, and the cure was complete in a few weeks. In infants about a year old, hysteric anorexia may be connected with weaning or be a hysteric prolongation of some gastro-enteritis. Removal to another environment usually cures it at once. One girl of 11 had become so emaciated and weak from the hysteric anorexia that the pulse was only 40, respiration 16. Isolation in the hospital did not help until she was told that she would have to be fed through a "snake," the Danish word for "snake" and "tube" being the same. Then she began to eat normally until she coaxed an attendant to show her the "snake"; no more eating after that. Finally Monrad told the nurse in her presence that if she did not begin to eat soon she would get decubitus. The girl inquired about decubitus and was shown the large loathsome sores. This cured her anorexia, and she gained 1,900 gm. in weight in two weeks, but the anorexia returned a few months later. In three cases there were hysteric strictures in the esophagus. Hysteric vomiting is usually cured by removal from home, even when the vomiting has kept up for years. In five cases the hysteria simulated appendicitis, the children having heard older people describe the symptoms.

Torsion of the Omentum.—Wildenskov urges detorsion and resection of the omentum, saying that with this the mortality was only 4.5 per cent. among the 89 cases on record, exclusive of the 3 per cent. fatalities explained by other causes. In the personal case reported the diagnosis had been appendicitis. In 65 of 80 cases there was concomitant hernia, as also in his case. The long pedicle of the clump of omentum in his case had made six complete turns toward the left.

Inherited Neurosyphilis.—Baagøe queries as to the connection between the inherited syphilis and the imbecility plus the extreme backwardness; the aphasia; or the juvenile tabes, plus sudden blindness, in the three children described. Some of them testify anew to the fact that these severe forms of neurosyphilis from the inherited taint occur in the children of parents whose syphilis was so mild it escaped detection or was disregarded.

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INTERPRETATION OF ROENTGEN-RAY FINDINGS IN THE DIAGNOSIS OF PEPTIC ULCER

SOME DIFFICULTIES *

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One of the most important advances in the diagnosis of gastro-intestinal lesions has been the development and application of roentgenographic methods in this field. As is likely to occur when any method is devised which demonstrates new objective signs of disease, certain findings obtained by roentgen-ray studies create new diagnostic problems. Most important of the problems is the significance of roentgen-ray findings and their relative value, to those obtained by other procedures, in the diagnosis of gastric and duodenal lesions. These have been discussed in former communications.¹ Our purpose in this paper is to present some of the difficulties and errors into which roentgen-ray findings may lead in relation to the diagnosis of peptic ulcer.

Temporary muscle spasm occasionally produces distortion in the outline of the duodenum or stomach like that produced by an ulcer. An example of this condition is pictured in Figures 1 and 2. In this case the deformity pictured was present throughout one examination but absent in another made two weeks later, although the symptoms remained unchanged. When such deformities occur in cases in which the clinical findings are not those usual for peptic ulcer, the roentgen-ray studies should be repeated at a later date. At the second examination, especially if atropin has been given to the physiologic limit, the deformity usually will have disappeared. If this precaution is not taken, one may be forced erroneously to consider the presence of organic disease where it does not actually exist. This is illustrated in Case 1:

CASE 1.—Diagnosis, *gastric neurosis*.—F. R. G., white man, aged 32, salesman, with unimportant family and past medical histories, from February to November, 1914, had had attacks of slight dizziness with some nausea and occasionally vomiting, but no hematemesis, or bloody or tarry stools. The attacks recurred every two or three weeks and lasted for about half a day. In November, 1914, severe epigastric burn-

ing from two to three hours after meals began; this symptom persisted for two weeks. The patient was then placed on a diet by a New York physician, which was followed for several months with finally complete relief from symptoms. The patient remained well until the present illness, October, 1919. About the first of that month the onset of mild burning in the epigastrium, from two to three hours after meals, began. The symptoms gradually increased in severity until at the end of three weeks the patient sought medical advice. The appetite was good. There had been no vomiting. The bowels were constipated. There had been no loss in weight.

Physical examination was essentially negative.

Roentgen Report: The stomach was normal in position and tone. Its outlines were regular. There was active peristalsis, and the pyloric sphincter closed normally. There was constantly present a definite irregularity of the lesser curvature side of the first portion of the duodenum. Otherwise the duodenum appeared normal.

Interpretation: The findings are those usual in ulcer of the first portion of the duodenum.

Roentgen-ray studies were repeated in two days and again one month later. On both occasions the duodenum filled normally and its outline was regular.

Clinical Pathology: Gastric analysis was not made. The stools gave a negative benzidin test for blood. The usual examinations of the urine and blood were negative. The Wassermann reaction in the blood serum was negative.

Progress: Treated on the basis of a neurosis, without special dietary measures, the patient became free from all symptoms within one week. During this period he carried on business as usual. He remained well, while under observation, for the ensuing three months.

This case shows the value of cooperation between the roentgenographer and the clinician. The clinical history was not typical of ulcer, yet the first roentgen-ray findings were characteristic of that condition. The discrepancy led to a repetition of the roentgenographic examination. The result was such as to show that the first findings were transient, probably the result of temporary muscle spasm and not due to an ulcer.

There is a type of case in which a persistent duodenal deformity, resembling that due to ulcer, exists and yet is probably due to some cause other than ulcer, such as adhesions, congenital or acquired. Case 2 furnishes an example of this:

CASE 2.—Diagnosis, *duodenal ulcer*.—J. J. C., Med. No. 11061, white man, aged 47, expressman, admitted to the Peter Bent Brigham Hospital, May 12, 1919, and discharged, May 15, 1919, complained of distress in the abdomen. The past medical history was essentially unimportant. Gastric symptoms began seven years prior to admission. The symptoms had occurred in periodic attacks, usually at intervals of about every two months and persisting for from one to six weeks. The interval between the last two attacks had been one year. The last attack began three weeks before admission, and was of the same character as the preceding ones.

* From the medical clinic and roentgenographic department of the Peter Bent Brigham Hospital.

1. McClure, C. W.: Certain Diagnostic Aspects of Medico-surgical Diseases of the Gastro-Intestinal Tract. Boston M. & S. J. 181:399 (Sept. 25) 1919. McClure, C. W., and Reynolds, Lawrence: Gastric and Duodenal Ulcer: Typical and Atypical Forms: The Relative Value of Diagnostic Procedures, *ibid.*, to be published.

Dull, aching distress in the epigastrium occurred at variable periods of the day or night, and without relation to food except for a tendency to appear just before meals. The distress was partially relieved by food and to a greater extent by soda. Belching of considerable amounts of gas was a prominent symptom. The appetite was usually good. There



Fig. 1 (E. W., O. P. D. 60463).—Antral incisura, due to temporary muscle spasm, in a case of gastric neurosis.

had been no vomiting, no hematemesis, no jaundice, and no bloody or tarry stools. The bowels were regular. The patient was usually able to trace a connection between gastric symptoms and emotional stress, such as worry over business affairs.

Roentgen Report 14735 (Fig. 3): The stomach was normal in position, outline and tone. It was freely movable, and hyperperistalsis was present. The pyloric sphincter showed no abnormalities. The outline of the first portion of the duodenum was persistently irregular. The ileum was normal in position, freely movable, and contained the entire six-hour barium meal. At the twenty-four hour observation, the head of the barium column had reached the rectum. The cecum and the colon were normal. The appendix was not seen. A second roentgen-ray examination, one week later, gave the same findings.

Interpretation: The findings are those of either peri-duodenal adhesions or duodenal ulcer.

Clinical Pathologic Findings: The fasting stomach contents contained free hydrochloric acid, 15, and total acidity, 26. The guaiac test for occult blood was negative. After an Ewald test breakfast, free hydrochloric acid was 3 and total acidity 30.

The stools showed no occult blood. The Wassermann reaction in the blood serum was negative. The examinations of the blood and urine were negative.

Progress: The patient was in the hospital three days. During this period he was given the usual hospital soft diet and was free from all symptoms. After leaving the hospital he took a short vacation and then returned to work. In a letter, four months later, he stated that he had been free from all gastric symptoms since leaving the hospital.

That this case was one of duodenal ulcer cannot be denied, but the rapid recovery makes the correctness of that diagnosis problematic. This is emphasized by the failure to demonstrate at operation the presence of an ulcer in a case (Case 6, M. M. Mc., Med. No. 10448) reported elsewhere,² in which the clinical and

roentgenographic findings were almost identical with those in the case just described.

Such cases as these demand intensive study and long observation. The patient's reaction to medical treatment is a practical guide to follow. It has been thought that rest in bed, combined with dietary measures, is indicated in all cases in which there is considerable evidence of the presence of ulcer, such as existed in the case just reported. That this line of therapy will often produce quick results is shown by the results obtained in this case. However, there are patients on whom exclusion from business works a great hardship. Since the correctness of the diagnosis of ulcer is somewhat questionable in such cases, it seems justifiable to try ambulatory treatment provided the patient is kept under close observation. That such a course is not only justifiable, in selected cases, but that good results may be obtained is illustrated by Case 3:

CASE 3.—Diagnosis, *gastric ulcer*.—F. E. M., Med. No. 8260, white man, aged 21, student, admitted to the Peter Bent Brigham Hospital, May 6, 1918, and discharged May 25, 1918, whose family history was unimportant, since early childhood had lunched between meals because of hunger; also, the bowels had been more or less constipated, frequently requiring the employment of cathartics. During the twelfth year of age there had been frequent nausea and vomiting immediately after breakfast. The patient was slightly under weight.

The present illness had begun one year prior to admission to the hospital. The predominating symptom was dull pain, occurring from two to three hours after eating, accompanied by belching. The pain was always in the umbilical region. It was relieved by taking hot water, soda or food. There was no night pain. The pain persisted for three months and then disappeared. It reappeared four weeks prior to admission, and was of the same character as during the first attack.



Fig. 2 (E. W., O. P. D. 60463).—Normal outline of antrum disclosed when stomach was roentgenographed two weeks later.

The physical examination was essentially negative.

Roentgen Report: There was a moderate six-hour barium residue. There was a deep incisura in the prepyloric region. The incisura extended from the greater curvature, and divided the stomach almost into two cavities. The incisura was present throughout the fluoroscopic examination, and was seen on the plates. No irregularities in the stomach

2. Footnote 1, second reference.

outlines were made out. The duodenum could not be more than partially filled.

Interpretation: The findings are due to muscle spasm, and suggest gastric and duodenal ulcer.

Clinical Pathology: Twenty-six c.c. of fasting gastric contents were obtained, and they contained some food

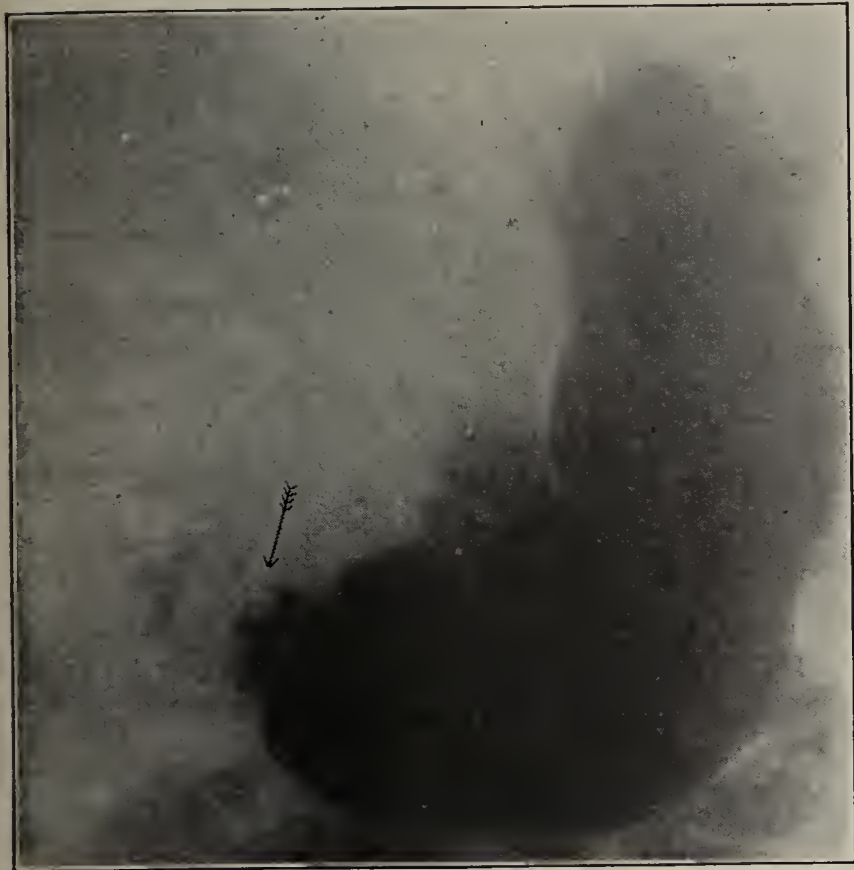


Fig. 3 (Case 2).—Irregularity in outline of duodenum.

residue. The benzidin test for blood was negative. After an Ewald test breakfast, free hydrochloric acid was 3 and total acidity 24. The stools contained no occult blood. The usual examinations of the blood and urine were negative. The Wassermann test in the blood serum was negative.

Progress: After admission to the hospital, the patient was placed on a Sippy diet. Within seventeen days he was able to take a general diet without producing symptoms. The patient remained free from symptoms until April, 1919. At this time there appeared fairly severe epigastric pain every few days about two hours after meals. This condition continued for three months; then the epigastric pain became more or less constant. It remained of fairly severe intensity. This condition continued for two weeks. Then the patient went into the mountains on a vacation. There he tramped and ate liberally of a general diet. In spite of this he quickly became free from all symptoms and remained so until December, 1919. There then appeared either fairly sharp pain or marked discomfort in the epigastrium two hours after food. The pain or discomfort was relieved by soda or food. There was occasional vomiting and some belching of gas. Roentgenographic studies were made at this time. The stomach was found to be markedly atonic and contained a medium sized six-hour residue. Aside from these findings, the gastro-intestinal tract presented no abnormalities. It was now learned that the patient was subjected to much nervous strain and that he had been so prior to the onset of his trouble in 1918. He was told that, although he probably had a gastric ulcer, his symptoms might all be due to a neurosis. He was given treatment for gastric neurosis and was instructed to eat liberally of a bland diet for two weeks, after which time he was placed on a general diet. Within a few days after beginning treatment the patient became free from symptoms and remained so one month later.

Two other cases were observed in which the symptoms were those of peptic ulcer, but the roentgen-ray findings revealed only gastroparesis and atony. As in the case just reported, these two patients became free from symptoms under treatment for neurosis. Whether

or not these three cases were peptic ulcer could be determined only by operative methods. The subsequent courses of these cases and of Case 2 were like those of gastric neuroses. In all four cases the basis for a neurosis was present. On the other hand, the histories and roentgen-ray findings suggest the diagnosis of ulcer in two of the cases. The diagnosis in these cases must be left an open question in the absence of surgical exploration. But, as regards treatment, unless such cases quickly respond to other forms of therapy, it would be best to institute a medical regimen for peptic ulcer.

Roentgenographic findings may be very atypical and assist materially in the making of an incorrect diagnosis. Case 4 illustrates such an instance:

CASE 4.—Preoperative diagnosis, *malignancy superimposed on an old ulcer*; postoperative, *gastric ulcer and benign pyloric stenosis*.—J. C. B., Med. No. 11906, white man, aged 78, retired, admitted to the Peter Bent Brigham Hospital, Sept. 26, 1919, and transferred to the surgical service, October 14, entered the hospital complaining of "stomach trouble." The past medical history was unimportant. The symptoms consisted of anorexia, belching, and occasionally epigastric distress occurring from three to four hours after meals. The epigastric distress was temporarily relieved by soda or food. These symptoms had persisted with remissions and exacerbations for a period of six years. There had been no vomiting and no bloody or tarry stools. During the eight months preceding admission, distress from three to four hours after meals, flatulence and belching had been present continuously. There had been nausea occasionally, but no vomiting. During the latter three months of the present illness the patient had lost 35 pounds in weight.

Physical Examination: Other than the evidence of considerable loss in weight, the physical examination was essentially negative.

Roentgen Report 16090: Two fluoroscopic examinations were made. The stomach was dilated and atonic. Peristalsis on one examination was practically absent, while in the second it was vigorous and of the obstructive type. There was a constant filling defect in the region of the antrum, the margins of which appeared irregular in outline. The sphinc-

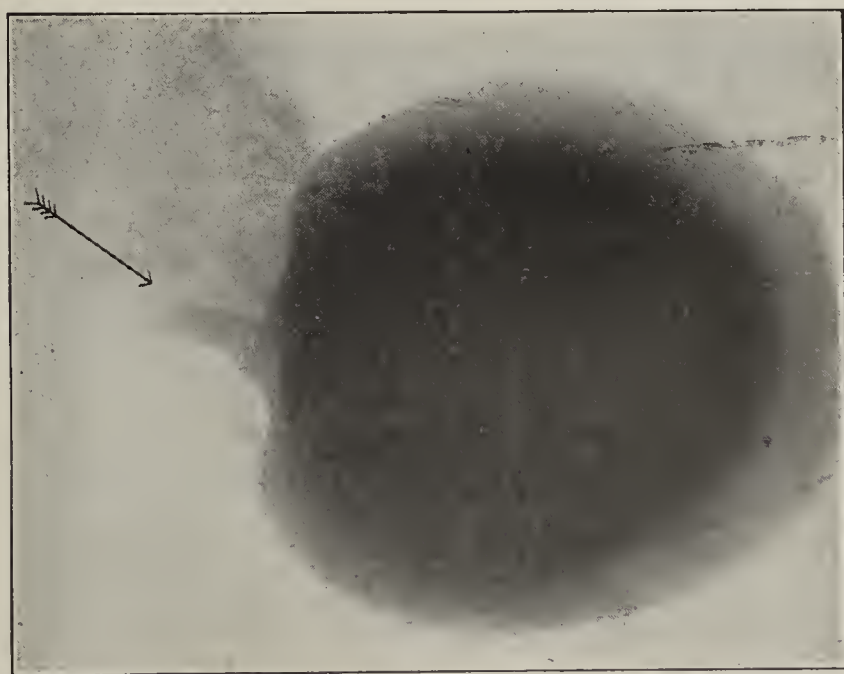


Fig. 4 (Case 4).—Appearance of stomach in a case that proved to be gastric ulcer and benign pyloric stenosis.

ter was not seen. Virtually the entire six-hour barium meal was in the stomach, and at the twenty-four observation the stomach was still outlined by barium.

Interpretation: The findings are those of a carcinoma involving the sphincter and causing pyloric obstruction.

Clinical Pathology: The fasting stomach contents contained remnants of food eaten fourteen hours previously.

Free hydrochloric acid was 10, and total acidity, 43. After an Ewald test breakfast the gastric contents contained, free hydrochloric acid, 40 and total acidity, 60. The benzidin test for occult blood was negative. Hemoglobin was 80 per cent. and the white cells 8,000 per cubic millimeter. The



Fig. 5 (J. S., Med. No. 12180).—Stomach in a case of duodenal ulcer. Arrow points to the duodenum which, together with the region of the pyloric sphincter, was pulled upward by a congenital band of adhesions.

Wassermann reaction in the blood serum was negative. The urine contained no pathologic elements.

Surgical Note: The preoperative diagnosis in this case was malignancy superimposed on an old ulcer. At operation the pylorus was found to be obstructed by a mass of scar tissue resulting from an old ulcer, and no evidences of malignancy were found.

In this case both clinical and roentgen-ray findings were distinctly those of carcinoma, yet the case was one of ulcer. This case illustrates that even the most typical roentgen-ray findings do not necessarily make a correct diagnosis. A correct preoperative diagnosis does not seem to have been possible. The roentgen-ray findings are portrayed in Figure 4.

In a case of pyloric ulcer (Case 2, J. S., Med. No. 12180), reported in a previous communication,² the pylorus and duodenum were adherent to the gallbladder by a congenital band of tissue. In the roentgenogram the deformity produced obscured that due to the ulcer and gave the appearance of the presence of an extra-gastric process, such as a tumor mass or adhesions. The condition found is presented in Figure 5. The symptoms present in the case were those typical of gallbladder disease, and the roentgen-ray findings seemed to confirm that diagnosis. In this case the roentgen-ray findings led away from, rather than toward, a correct diagnosis.

There is a gastric roentgen-ray finding of which three examples have been observed. The finding consists of an area on the lesser curvature over which peristaltic waves do not pass (Fig. 5). No irregularity in the outline of the stomach exists. Case 5 is an example of such a case:

CASE 5.—Diagnosis, *gastric ulcer*.—P. J. B., Med. No. 10993, white man, aged 46, watchman, a year and a half before, following a fall, had symptoms similar to the present attack,

during which 15 pounds in weight were lost. The present illness began seven weeks prior to admission to the Peter Bent Brigham Hospital, and again followed mild trauma. The symptoms had consisted of burning epigastric pain coming on about half an hour after meals. Occasionally nausea had been present, but no vomiting. The patient had lost 12 pounds in weight during the present illness. The physical examination was essentially negative except for some tenderness in the midepigastrium.

Roentgen Report 14697: The stomach was normal in position, tone and outline, and was freely movable. The peristalsis was irregular and sluggish; at times three waves were visible. There was a small six-hour residue. On the lesser curvature, proximal to the antrum, there was an area in which no peristalsis occurred, although peristaltic waves were seen to pass over the greater curvature opposite this area. The same phenomena were noted on a second examination one week later. There was no irregularity in outline of the stomach. A good sphincter and first portion of the duodenum was seen. At the six-hour observation, the ileum contained the entire barium meal. The cecum was not seen.

The laboratory findings in the blood, urine and stools were negative. The fasting gastric contents were 34 c.c. in amount and showed no free hydrochloric acid. The contents removed after a test breakfast contained: free hydrochloric acid, 30, and total acidity, 45. There was no occult blood. The Wassermann reaction in the blood serum was negative.

Progress: The patient was under observation in the hospital for two weeks. During this period he was on a general diet. He complained of more or less constant, dull epigastric pain.

Whether or not this case was one of ulcer was not determined, although the history and roentgen-ray findings make the accuracy of such a diagnosis probable. In a second case with identical roentgen-ray findings there was a history of dyspeptic symptoms, like those usual for a gastric neurosis of several years' duration. In a third case the symptoms were those of ulcer, and a gastric ulcer in the antral region was found at operation.

Cases such as the one reported above demand continued, careful study and observation. The character of the treatment will depend on the medical and financial conditions of each patient. Ambulatory treatment

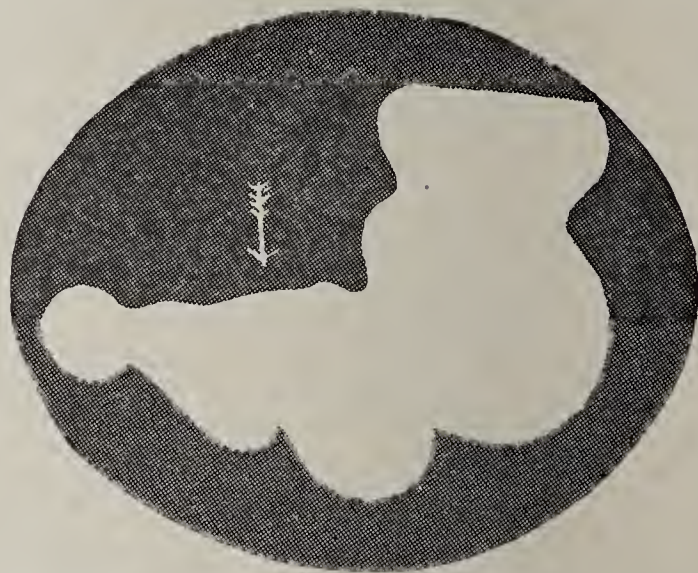


Fig. 6 (Case 5).—Tracing of stomach made with the aid of the fluoroscope. Arrow points to the region on the lesser curvature over which no peristaltic waves were seen to pass.

may be tried first, as was done in Case 3. If this fails, then rest treatment and finally a medical regimen for ulcer should be instituted.

SUMMARY AND COMMENT

The findings in the cases reported demonstrate that:

1. Cases occur in which either the presence of an ulcer is not diagnosed, or in which the presence or

absence of an ulcer cannot be definitely determined except by exploratory operation.

2. It is necessary to interpret roentgen-ray findings in relation to the data obtained by careful and thorough clinical studies.

3. In certain cases roentgen-ray findings are more confusing than helpful in diagnosis.

It is obviously necessary for the internist to become familiar with roentgen-ray findings. But he can scarcely hope to become as adept as the expert roentgenographer, for roentgenology is specialized work requiring much knowledge, large experience and great skill on the part of the physician engaged in it. The best results are obtained by the proper cooperation of clinician and roentgenographer. The proper cooperation consists:

1. On the part of the roentgenographer, in the accurate description of roentgen-ray findings present, portrayal of the most probable conditions which they represent, and the exclusion of artefacts.

2. On the part of the clinician, in the integration of roentgen-ray findings into symptomatology and diagnosis.

THE USE OF BEEF-BONE SCREWS IN FRACTURES AND BONE TRANSPLANTATION

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In recent years, bone grafting has become established in surgical practice as firmly as the more simple operation of skin grafting, and, as in the latter, it has been found that the autogenous graft is the best. Practically all failures can definitely be attributed to technical errors, such as too small a graft, infection, inadequate fixed bony approximation of the graft to fragments, and poor postoperative fixation of the part. I have found beef-bone screws to be a great aid in attaining this fixed approximation of the graft to the bone, and I believe that they would be employed more if their uses and methods of preparation were more generally known. I am well aware of the fact that a few surgeons have used them, but I present this article on their preparation and use believing that it may be of interest to others.

There can be no doubt that, from a purely theoretical point of view, screws made from the bone of the patient, such as the bone pegs advocated by Albee, would be better than beef-bone screws. The theory when put into practice, however, has so many objections, such as the difficulty of making the screws or pegs properly, and the extra amount of bone used, that I have come to the conclusion that the beef-bone screws are to be preferred. The question of whether the beef bone is suitable for a graft does not enter into this discussion, for all that is demanded of the screws is that they provide fixation of the autogenous graft to the fragments. They are usually absorbed completely within from six months to a year.

We know that the bone transplant must be held firmly in position and have broad contact with the bone to which it is to be grafted. While in theory an inlay graft is best and occasionally it is possible to obtain a perfectly fitting inlay by the use of the double bladed circular saws, in actual practice this is not easy. If the blades of the twin saw are out of line there

will be a considerable discrepancy in the size of the graft and the slot. It is necessary to employ some means of securing the graft to prevent it from moving. Kangaroo tendon or catgut sutures thrown about the fragments and the graft are not satisfactory. Beef-bone screws properly placed are well-nigh ideal for the purpose.

PREPARATION OF SCREWS

Fresh beef bone is obtained usually from the tibia, the joint ends are sawed off, and the shaft is boiled for one and one-half hours to remove the tissue and the marrow. The shaft is sawed into pieces $3\frac{3}{4}$, $2\frac{3}{8}$ and $1\frac{1}{4}$ inches long for the large, medium and small size of screws, respectively. The medium sized screw is of aid in many situations, and many more of these are used than of either the large or the small screws. The sizes used by us are standard, and in mechanical terms the large screws are known as $\frac{5}{16}$ by 18, the medium size as 10 by 24, and the small as 6 by 32. The lengths

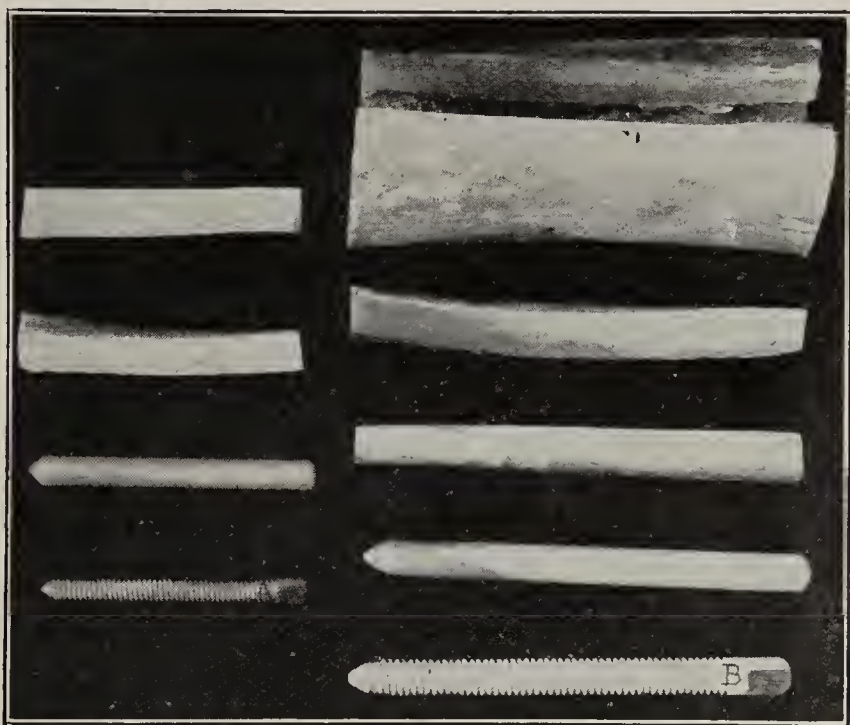


Fig. 1.—Piece of beef-bone with strips, blanks and screws: A, medium sized screw, 10 by 24; B, large sized screw, $\frac{5}{16}$ by 18.

adopted are arbitrary and may be varied to suit the needs of the case. The pieces are sawed lengthwise into strips; their width varies according to the diameter of the screw to be made. The strips are roughly sized in the vise by filing, and are then turned to the proper size, pointed, and the head rounded in the lathe. These finished blanks are placed, for one-half hour, in petrolatum brought to the melting point in a double boiler, in order to replace to some extent the natural oils removed by the boiling. This renders the bone a little less brittle and less likely to crumble when being threaded. The heat must not be extreme or the bone will be overheated and rendered almost chalky.

The blanks are placed in the lathe and threaded by using a standard machine screw die. Petrolatum is freely used on the die while the threads are being cut. The large blank is threaded with a standard $\frac{5}{16}$ inch by 18 die. The head is $\frac{5}{16}$ inch long and is flattened on two sides to $\frac{1}{4}$ inch in thickness to fit a special wrench. The large screw when finished is ordinarily $3\frac{1}{2}$ inches long, but this may be varied. The medium sized blank is finished into a screw $\frac{19}{100}$ inch in diameter and $2\frac{1}{4}$ inches in length (Fig. 1). A little more care is necessary in putting the threads on this size than on the large screw, and

we have found it necessary to step down the threads by using three dies: 12 by 24, 11 by 24, and 10 by 24. The small blank is for a screw $1\frac{1}{100}$ inch in diameter and $1\frac{1}{8}$ inches long. It is necessary to step down the threads for this screw as follows: 8 by 32, 7 by 32, to 6 by 32. The heads of the two smaller screws are $\frac{1}{4}$ inch long and $\frac{1}{4}$ inch in diameter to allow for hexagonal shaping to a $\frac{3}{16}$ inch standard. These fit a specially made socket wrench fitted to the end of a small brace. When the screws are received from the machine shop they are thoroughly scrubbed with soap and water and boiled in water for thirty minutes. They are then kept in the instrument case and boiled as required, just as any instrument is boiled. The screws are cheap, easily made and well tolerated by bone. The one objection to them is that they are brittle and will not withstand any great amount of stress, particularly if there is any torsion with the strain. For his interest and skill in the actual manufacture of the screws we are indebted to Mr. George Little, chief of the instrument shop of the Mayo Clinic.

SURGICAL USES

Even though the beef-bone screws are well made, they cannot be successfully used unless there are at hand the proper instruments for placing them. Above all, it must be remembered that they withstand very little twisting force, and if they bind when being screwed in, they will break. For the large size, $\frac{5}{16}$ by 18, a special socket wrench is used. I have used the large screws only in situations such as the head of the femur or the condyle of the femur. If not passed through any cortical bone, they are of sufficient

strength to make their own threads in the soft bone, and the drill hole bored by a $\frac{9}{32}$ inch twist drill does not need to be tapped. Since the medium sized screws, 10 by 24, and the small screws, 6 by 32, have a hexagonal head of the same size, the same wrench fits the two (Fig. 2 *D* and *E*). For the medium sized screw the holes in the graft and fragment are bored by a No. 17 twist drill (Fig. 2 *A*) and the hole is tapped by a $\frac{10}{24}$ tap (Fig. 2 *B* and *C*). For the small screw the hole is bored by a No. 29 twist drill and the hole tapped by a $\frac{6}{32}$ tap. The drills can be used on the electric motor or on the hand drill. The tapping must be carefully

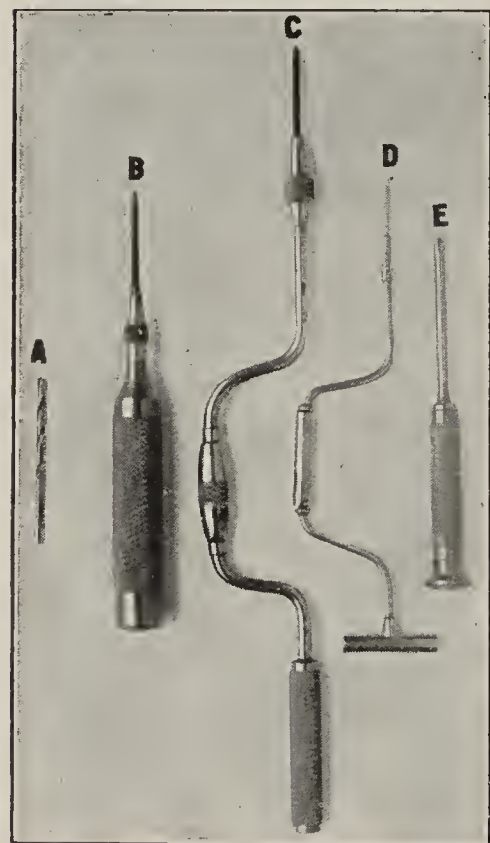


Fig. 2.—Instruments necessary for the placing of beef-bone screws: *A*, No. 17 twist drill; *B*, straight handled 10 by 24 tap; *C*, offset handle 10 by 24 tap; *D*, offset handle wrench with hexagonal headed beef-bone screw in socket; *E*, straight handle wrench.

done by hand. Handles of different styles for the wrench and taps will be found convenient for the different situations (Fig. 2 *B* and *C*). If the subcutaneous structures are scanty, the heads of the bone

screws may be removed either by bone-biting forceps or a Gigli saw.

In recent spiral or oblique fractures of the long bones, recent fractures of the neck of the femur, of the olecranon process, and in certain fractures of the

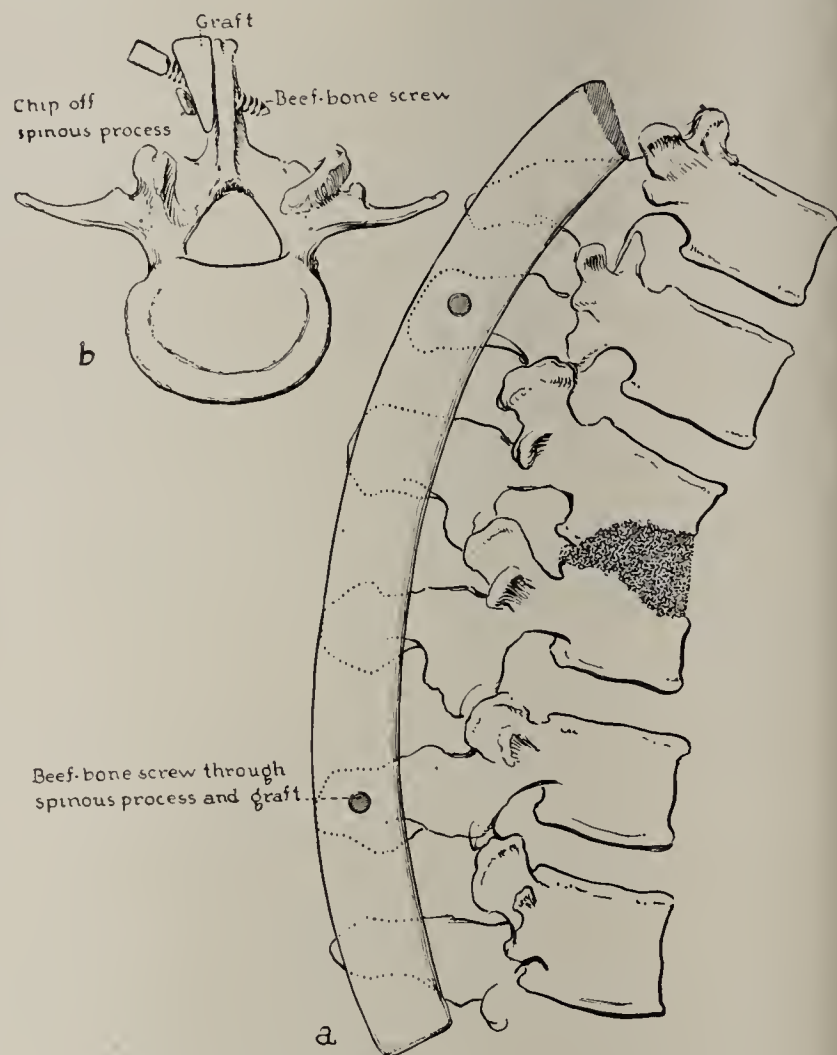


Fig. 3.—Curved tibial bone graft (*a*) held securely in place by the aid of two beef-bone screws placed through the graft and spinous processes; *b*, transverse section showing the relative positions of the graft, spinous process and beef-bone screw.

patella, the screws are an excellent means of obtaining coaptation of the fragments. They are a splendid means of fastening the bone graft to the spinous processes, as is necessary in the operation advanced by Albee for tuberculosis of the spine, and are the only means known to me whereby proper bony approximation can be assured (Fig. 3). They are not so ideal in delayed union or for ununited fractures. It has been my experience that in fractures of these two groups, it is best to accept no compromise but to employ a large graft so that when the operation is completed there is from 20 to 25 per cent. more bone in the fractured region than is normal (Fig. 4). When we are dealing with a case of long standing nonunion of the humerus or of the bones of the forearm, the bones are often osteoporotic and smaller than normal. In such cases every surgeon of experience has seen his inlay or intramedullary grafts thin out and finally break at the line of fracture. The absorption of the graft takes place so rapidly, or perhaps it would be better to say that the deposition of new bone is carried on so slowly, that the graft is partially absorbed and cracks on slight stress, and a technically well performed operation in a properly selected case is discredited. In such a predicament the surgeon should not be dismayed and give up all hope of obtaining union, but he should at once see that the part is thoroughly immobilized for at least two months more. In the majority of cases, and particularly if the transplant has been of good size, union will occur. I believe that

the excess of bone elements brought to the devitalized area is an important causative factor in bringing about union, and this is my reason for so strongly emphasizing the large graft. If the roentgen ray discloses very marked osteoporosis of the fragments, exercises should be instituted prior to operation, regardless of the fracture, because it is only by this means that the osteoporosis will be overcome. Many failures to obtain bony union are due to operating on bones that are far below par in bone salts and bone forming elements. Obviously, the simplest way to prevent a fracture of the transplant is to place a very large graft, and by this I mean large in diameter as well as in length* (Fig. 4 b). The discredit of the bone graft found in some of the recent writings, particularly from abroad, is more than likely due to the authors' experiences with fracturing of the grafts, the cause of which is probably the use of too small transplants.

The technic of the inlay graft will not permit the placing of a very broad piece in the fragments (Fig. 4 c). On account of failure and accidents with the ordinary intramedullary and inlay grafts, and the belief that it is most important to place more bone in the fractured area than is normally there, it has been my custom for some time to proceed as follows: The bone ends are carefully freshened so that as broad an area of their surface as possible will be in firm contact. The medullary cavity in each fragment should be opened. From one fifth to one fourth of the entire thickness of the bone from each fragment on one side is removed for a goodly distance above and below the fracture. This should not remove the entire cortical wall. The graft, which is a piece of healthy bone from the tibia or the entire thickness of the fibula, flattened on one side, is greater in thickness than the amount of bone removed from the fragments, and is placed against their freshened surfaces, the ends of which are in firm apposition and the medullary cavities in line. It is held in place by two or more beef-bone screws through the graft and through the remains of the proximal cortex and the opposite cortex of each fragment (Figs. 5 and 6).

SUMMARY

1. Beef-bone screws are a great aid in securing firm fixation of the bone graft to the fragments in frac-

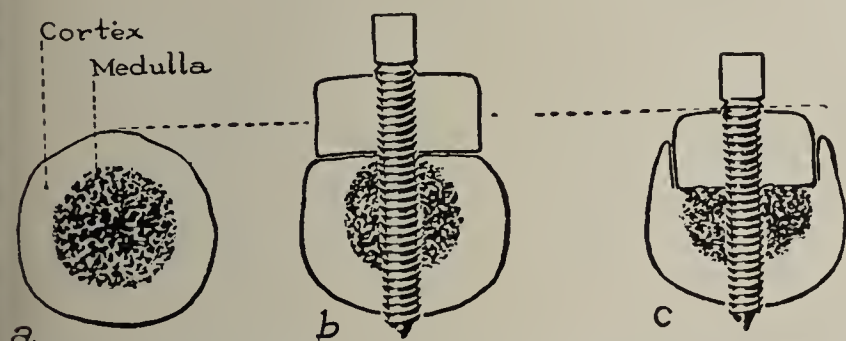


Fig. 4.—a, transverse section of bone; b, large bone graft in apposition to fragment from which part of cortex has been lifted to permit broad contact; graft held in place by beef-bone screws through the opposite cortex; c, inlay graft; beef-bone screw placed through graft and the opposite cortex.

tures, and of the graft to the spinous processes in the operation for fixation of the spine.

2. They are well tolerated by the bone and are gradually but completely absorbed.

3. Bone screws have not the strength of metal and must not be expected to stand great stress. Careful provision must be made for postoperative fixation of the extremity.

4. Drills, taps and wrenches of the proper size are essential for the placing of beef-bone screws.

5. The bone graft as commonly used in the intra-medullary and inlay methods is too small. Fracture of



Fig. 5.

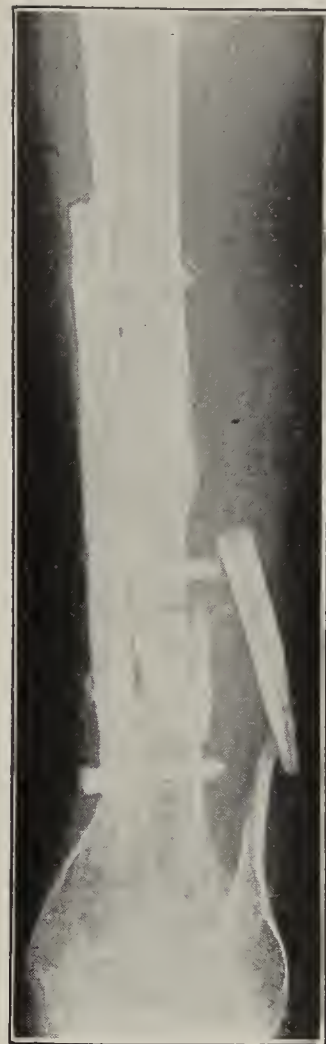


Fig. 6.

Fig. 5 (Case 279058).—Roentgenogram of ununited fracture of lower third of tibia and fibula of eight years' standing in a woman, aged 20.

Fig. 6 (Case 279058).—Roentgenogram of tibia and fibula shown in Figure 5. Fixation, by means of four beef-bone screws, of piece of entire thickness of fibula from upper fragment, placed against fragments of tibia.

the graft rarely, if ever, occurs if the graft is large enough so that when the operation is completed there is from 20 to 25 per cent. more bone in the fracture area than there is normally.

Liquid Disinfectants.—Liquid disinfectants may be substances either in solution or suspension. There are certain principles to be observed in the use of liquid disinfectants. A hot liquid disinfectant acts much more powerfully and quickly than a cold one. A disinfectant that is efficient at a certain percentage must be in that percentage in the mixture; for example, a disinfectant that will effectively disinfect at 2 per cent. strength must be present in a 2 per cent. strength in the resulting mixture. An emulsion is, as a rule, more germicidal than a solution because the germs come in contact with the crude drug, but a solution has more penetrative power than an emulsion. Each type of disinfectant has its own time necessary for efficient disinfection, e. g., a disinfectant that requires one-half hour to disinfect will not disinfect in fifteen minutes. The following disinfecting solutions are most commonly used: mercuric chlorid solution, 1:100 dilution or 1:1,000 solution for one-half hour (can not be used in albuminous medium or on metals, as it corrodes them); phenol, 5 per cent. solution for one-half hour; cresol, 2 per cent. emulsion for one-half hour; liquor formaldehydi, 10 per cent. solution for one-half hour; chlorinated lime, 5 per cent. solution for one hour (for disinfection of water, 1:150,000 solution for one-half hour is effective).—*U. S. Naval Medical Bulletin*, January, 1920.

BOTULISM

PRELIMINARY REPORT OF A STUDY OF THE ANTI-TOXIN OF *BACILLUS BOTULINUS**

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AND

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SAN FRANCISCO

The experiments recorded in this report were performed during the year 1917-1918, but on account of war conditions it was not possible to carry them further or to record them at that time. We had planned to delay publication until further experimental data could be obtained concerning a number of points that are obviously unsettled; but on account of the widespread interest that has recently been aroused in the subject of botulism, and the expression of various theories and speculations concerning the value of botulinus antitoxin as a therapeutic agent, we are offering this as a preliminary report with the hope that it may draw attention to certain facts that have been established.

THE PRODUCTION OF ANTITOXIN

Kempner,¹ in 1897, for the first time demonstrated that susceptible animals may be immunized to the toxin of *B. botulinus* (he used the Van Ermengem strain), and that a potent antitoxin may be produced. He was unsuccessful in his attempt to immunize the smaller laboratory animals, but succeeded in immunizing goats and in obtaining a potent antitoxin, 1 c.c. of which would protect against 100,000 minimal lethal doses for guinea-pigs.

Forssman and Lundstrom² succeeded in immunizing rabbits and guinea-pigs by using toxin that had been attenuated by heating for the first injection. They also immunized goats, and found that they obtained more rapid antitoxin formation if they injected the toxin subcutaneously than when they employed intravenous injections, and if they gave comparatively small amounts of toxin at comparatively longer intervals than were used by Kempner.

Wassermann³ and Leuchs⁴ were both successful in immunizing horses, and Leuchs recorded a comparative study of the toxin-antitoxin relationships of the Van Ermengem strain and the Darmstadt strain of *B. botulinus* in which he showed that the two strains were distinct in that the toxin of one was not affected by the specific antitoxin of the other, and vice versa. Leuchs was therefore the first to recognize that there are at least two types of *B. botulinus*, and that if immune serum is to be used therapeutically it should be a polyvalent serum.

In this country several investigators have prepared botulinus antitoxin for experimental purposes, but as yet none is available for commercial distribution. Graham, Brueckner and Pontius⁵ prepared antitoxin

by injecting sheep, goats and cattle with toxin of the Niven strain (Strain VI of our series) and with toxin from strains which they isolated in outbreaks of forage poisoning. Buckley,⁶ at the U. S. Department of Agriculture, has prepared an antitoxin for the strain which was isolated by Thom, Edmonson and Giltner from asparagus which caused the poisoning at Boise, Idaho. Hart,⁷ at the University of California Department of Agriculture, has immunized horses to strains that were obtained from our laboratory. Meyer, Hurwitz and Taussig⁸ successfully immunized dogs against the toxin of our Strain III, and Mrs. Burke⁹ reports the immunization of rabbits.

We obtained the antitoxin used in our experiments by inoculating Goats 1, 2 and 3 with Strains III, IV and VI, respectively, of our strains of *B. botulinus*

TABLE 1.—IMPORTANT DATA CONCERNING THE HISTORY OF THE STRAINS OF *B. BOTULINUS* STUDIED IN THIS INVESTIGATION

Strain	Date	Location	Persons		Poisoned		Cause of Poisoning	B. Botulinus Recovered From
			Ill	Died	Fowl	Animals		
III	1915	San Jose, Calif.	1	1	8	.....	Home-canned string beans	Contents of chicken crop
IV	1914	Hillsboro, Ore.	1	1	50	.....	Home-canned corn	Contents of chicken gizzard
VI	1915	Albany, N. Y.	?	?	..	.....	Cheese	Cheese (the Niven strain)
VII	1917	Seattle	3	3	20*	.....	Home-canned asparagus	Contents of chicken crop
VIII	1918	Berkeley, Calif.	..	..	12	.....	Home-canned string beans	Unopened jar of same lot of beans
IX	1918	Madera, Calif.	8	6	25	.....	Home-canned apricots	Contents of chicken crop
X	1918	Hollister, Calif.	..	..	..	2 hogs	Home-canned peas	Feces of hogs

* Approximately

over a period of several months. We were unable to follow out any previously determined plan for inoculating, as the goats reacted so differently to inoculation that we were forced to regulate the dosage and interval by the condition of each animal at the time. We did not obtain as highly potent antitoxins as Kempner or Forssman and Lundstrom report, although they were of sufficient potency for experimental purposes.

TABLE 2.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN OF STRAIN III

Guinea-Pig	Weight, Gm.	Toxin III, C.e.	Antitoxin III, C.e.	Results
1	200	0.00033	(Toxin control)	Died in approx. 30 hours
2	300	0.00033	(Toxin control)	Died in approx. 40 hours
3	325	0.00033	1	Survived
4	275	0.00033	0.1	Survived
5	325	0.00033	0.01	Survived
6	250	0.00033	0.001	Survived
7	240	0.00033	0.0005	Survived
8	220	0.00033	0.00033	Survived
9	200	0.00033	0.0002	Died in approx. 8 days
10	200	0.00033	0.0001	Died in approx. 36 hours

The potency of our three antitoxins, and the fact that they will neutralize the effect of the toxin when multiple proportions of the test dose of toxin and of antitoxin equivalent are mixed in vitro and injected into animals, are shown in Tables 2 to 7, inclusive. In all our experiments, unless it is otherwise stated, the toxins and antitoxins were mixed in vitro before

* Aided by a grant from the California State Council of Defense.

* From the Laboratory of Experimental Medicine, Leland Stanford Junior University School of Medicine.

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2. Forssman, J., and Lundstrom E.: Sur la marche de la courbe d'antitoxine dans l'immunisation active contre le botulisme, Ann. de l'Inst. Pasteur 16: 294 1902.

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5. Graham, Brueckner and Pontius: Studies in Forage Poisoning, V and VI, Bull. 207, Kentucky Agr. Exper. Sta., 1917. Graham, Robert, and Brueckner, A. L.: The Relation of *B. Botulinus* to Forage Poisoning or Cerebrospinal Meningitis in Horses, J. Bacteriol. 4: 1 (Jan.) 1919.

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being injected, and all inoculations were given subcutaneously. It was assumed that complete protection had been given if the animal showed no illness within a month after the injection.

From Tables 2, 4 and 6 it will be noted that the potency of our antitoxins may be defined as approximately 3,000, 5,000 and 600 for Strains III, IV and VI, respectively, the number indicating the respective antitoxin equivalents in 1 c.c. of serum, as tested

TABLE 3.—PROTECTION AGAINST TOXIN III AFFORDED BY ANTITOXIN III WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Proportions	Results
11	300	0.001	(Toxin control)	..	Died in approx. 40 hours
12	200	0.001	0.0005	1	Survived
13	250	0.002	0.001	2	Survived
14	250	0.005	0.0025	5	Survived
15	250	0.010	0.005	10	Survived

TABLE 4.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN IV

Guinea-Pig	Weight, Gm.	Toxin IV, C.c.	Antitoxin IV, C.c.	Results
16	275	0.00033	(Toxin control)	Died in approx. 48 hours
17	300	0.00033	0.01	Survived
18	250	0.00033	0.001	Survived
19	250	0.00033	0.0002	Survived
20	175	0.00033	0.0001	Died in approx. 70 hours

TABLE 5.—PROTECTION AGAINST TOXIN IV AFFORDED BY ANTITOXIN IV WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin IV, C.c.	Antitoxin IV, C.c.	Proportions	Results
21	325	0.00025	(Toxin control)	..	Died in approx. 40 hours
22	275	0.00025	0.0005	1	Survived
23	275	0.0005	0.001	2	Survived
24	250	0.00125	0.0025	5	Survived
25	250	0.0025	0.005	10	Survived

TABLE 6.—PRODUCTION OF SPECIFIC ANTITOXIN FOR TOXIN VI

Guinea-Pig	Weight, Gm.	Toxin VI, C.c.	Antitoxin VI, C.c.	Results
26	250	0.001	(Toxin control)	Died in approx. 40 hours
27	250	0.001	0.01	Survived
28	250	0.001	0.002	Survived
29	225	0.001	0.00125	Survived
30	200	0.001	0.0002	Died in approx. 48 hours

TABLE 7.—PROTECTION AGAINST TOXIN VI AFFORDED BY ANTITOXIN VI WHEN TEST DOSE OF TOXIN AND EQUIVALENT OF ANTITOXIN ARE INCREASED IN MULTIPLE PROPORTIONS

Guinea-Pig	Weight, Gm.	Toxin VI, C.c.	Antitoxin VI, C.c.	Proportions	Results
31	325	0.001	(Toxin control)	..	Died in approx. 40 hours
32	250	0.001	0.00125	1	Survived
33	250	0.002	0.0025	2	Survived
34	250	0.005	0.00625	5	Survived
35	250	0.01	0.0125	10	Survived

against one test dose of its homologous toxin. Our figures are only approximate, however, as it was impossible to obtain a sufficient number of guinea-pigs of the same weight to standardize our injections accurately. On this account we adopted the rule of using our heaviest animal for the toxin control, or, when the variation in weight was too great, of using two or more animals of different weights as toxin controls. In subsequent experiments we hope to establish more accurately standardized results.

EXPERIMENTS TO TEST THE EFFECT OF ANTITOXINS III, IV AND VI ON THE TOXINS OF OTHER AVAILABLE STRAINS OF *B. BOTULINUS*.

In our experiments we have investigated the toxins of seven strains of *B. botulinus*, six of them strains that were recovered in our laboratory from various home-canned vegetables and fruits that had caused outbreaks of food poisoning on the Pacific Coast, and one that was recovered by Niven from cheese in New York State. We did not test Strains I, II and V of our series because of the very low virulence of their toxins. The histories of the strains investigated are abstracted in Table 1.

(a) Experiments to test the action of Antitoxin III against the toxins of Strains IV, VI, VII, VIII, IX and X, respectively (Table 8): The experiments show that Antitoxin III has a protective action against

TABLE 8.—PROTECTION BY ANTITOXIN III AGAINST ACTION OF TOXINS IV, VII AND IX, BUT ABSENCE OF PROTECTION AGAINST TOXINS VI, VIII AND X

Guinea-Pig	Weight, Gm.	Toxin Strain	Toxin C.c.	Antitoxin III, C.c.	Results
36	225	IV	0.00033	(Toxin control)	Died in approx. 48 hours
37	200	IV	0.00033	0.0002	Survived
38	200	IV	0.00033	0.0001	III but recovered
39	325	VI	0.0135	(Toxin control)	Died in approx. 40 hours
40	325	VI	0.0135	0.5	Died in approx. 66 hours
41	225	VI	0.0135	1	Died in approx. 40 hours
42	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
43	250	VII	0.0076	1	Survived
44	250	VIII	0.00135	(Toxin control)	Died in approx. 40 hours
45	250	VIII	0.00135	1	Died in approx. 60 hours
46	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
47	200	IX	0.6	1	Survived
48	325	X	0.75	(Toxin control)	Died in approx. 18 hours
49	325	X	0.75	1	Died in approx. 18 hours

TABLE 9.—PROTECTION BY ANTITOXIN IV AGAINST ACTION OF TOXINS III, VII AND IX, BUT ABSENCE OF PROTECTION AGAINST TOXINS VI, VIII AND X

Guinea-Pig	Weight, Gm.	Toxin Strain	Toxin C.c.	Antitoxin IV, C.c.	Results
50	300	III	0.00033	(Toxin control)	Died in approx. 40 hours
51	225	III	0.00033	0.0002	Survived
52	225	III	0.00033	0.0001	Died in approx. 90 hours
53	250	VI	0.0135	(Toxin control)	Died in approx. 36 hours
54	250	VI	0.0135	0.5	Died in approx. 48 hours
55	250	VI	0.0135	1	Died in approx. 48 hours
56	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
57	250	VII	0.0076	1	Survived
58	250	VIII	0.00132	(Toxin control)	Died in approx. 40 hours
59	250	VIII	0.00132	1	Died in approx. 60 hours
60	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
61	200	IX	0.6	1	Survived
62	325	X	0.75	(Toxin control)	Died in approx. 18 hours
63	325	X	0.75	1	Died in approx. 18 hours

the toxins of Strains IV, VII and IX as well as against its own Toxin III. Although the tables have been abbreviated, sufficient data are given to show that 1 c.c. of Serum III protects against approximately 5,000 test doses of Toxin IV, an even higher degree of protection than was obtained in our tests of Antitoxin III against Toxin III (Table 2). Quantitative tests against Strains VII and IX are not given.

It is also shown that Antitoxin III has no appreciable effect in protecting against the action of Toxins VI, VIII and X, although an antitoxin equivalent of 3,000 test doses was given in each case. This has been confirmed by many trials.

(b) Experiments to test the action of Antitoxin IV against the toxins of Strains III, VI, VII, VIII, IX and X, respectively (Table 9): The experiments show that Antitoxin IV protects against the same toxins as Antitoxin III, namely, against III, VII and IX as well as against its own toxin. Like Antitoxin

III it does not show any appreciable protective action against Toxins VI, VIII and X.

(c) Experiments to test the action of Antitoxin VI against the toxins of Strains III, IV, VII, VIII, IX and X, respectively (Table 10): The experiments show that Antitoxin VI has no appreciable protective action against the toxins that are counteracted by Antitoxins III and IV, namely, III, IV, VII and IX, but that it does protect against Toxins VIII and X, which are not affected by Antitoxins III and IV.

TABLE 10.—PROTECTION BY ANTITOXIN VI AGAINST ACTION OF TOXINS VIII AND X, BUT ABSENCE OF PROTECTION AGAINST TOXINS III, IV, VII AND IX

Guinea-Pig	Weight, Gm.	Toxin Strain	Toxin C.c.	Antitoxin VI, C.c.	Results
64	325	III	0.00033	(Toxin control)	Died in approx. 30 hours
65	300	III	0.00033	1	Died in approx. 30 hours
66	275	IV	0.00028	(Toxin control)	Died in approx. 60 hours
67	250	IV	0.00028	1	Died in approx. 48 hours
68	275	VII	0.0076	(Toxin control)	Died in approx. 40 hours
69	275	VII	0.0076	1	Died in approx. 42 hours
70	250	VIII	0.00132	(Toxin control)	Died in approx. 40 hours
71	250	VIII	0.00132	1	Survived
72	225	IX	0.6	(Toxin control)	Died in approx. 18 hours
73	175	IX	0.6	1	Died in approx. 18 hours
74	325	X	0.75	(Toxin control)	Died in approx. 18 hours
75	325	X	0.75	1	Survived

From the foregoing experiments it is clear that there are in this country at least two types of *B. botulinus* which can be easily differentiated by toxin-antitoxin tests. The seven strains which we investigated fall into two homologous series of four and three, respectively, and have been described as Types A and B. So far as our investigations have gone, there appears to be very little if any cross protection afforded by the antitoxin of either type for the toxin of the other, a fact that will be referred to later in discussing the therapeutic value of botulinus antitoxin.

EXPERIMENTS TO TEST THE EFFECT OF THE ADMINISTRATION OF SPECIFIC ANTITOXIN AT VARYING INTERVALS AFTER THE INJECTION OF TOXIN

In the following experiments the toxin and antitoxin of Strain III were employed. The amount of antitoxin is indicated in every case in terms of the anti-

TABLE 11.—RELATIVE AMOUNTS OF ANTITOXIN NECESSARY TO PROTECT AGAINST ONE TEST DOSE OF TOXIN, WHEN ANTITOXIN AND TOXIN ARE MIXED IN VITRO, AND ARE INJECTED SEPARATELY

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Method of Administration	Results
76	300	0.001	(Toxin control)	.....	Died in approx. 36 hours
77	250	0.001	0.0005	Mixed in vitro	Survived
78	250	0.001	0.0005	Separately	Died in approx. 60 hours
79	250	0.001	0.001	Separately	Died in approx. 60 hours
80	275	0.001	0.002	Separately	Ill but recovered

toxin equivalent of one test dose of toxin when mixed in vitro. The antitoxic serum of Strain III was such that 1 c.c. gave complete protection against 3,000 test doses.

(a) Experiments to show the relative proportions of antitoxin necessary to protect against one test dose of toxin when the toxin and antitoxin are mixed in vitro before injection, and when the toxin and antitoxin are given simultaneously but injected separately (Table 11): It was found that it requires at least four times as much antitoxin to neutralize one test dose of toxin in vivo as is necessary when the two are

mixed in vitro. In all our experiments, therefore, in which we have attempted to determine the interval after the injection of toxin during which the administration of antitoxin may be of value, we have employed at least five times the antitoxin equivalent of one test dose of toxin when the two are mixed in vitro.

(b) Experiments to test the value of injecting antitoxin at varying intervals after the administration of toxin: 1. In the first series of experiments, slightly more than one test dose of toxin was injected subcutaneously (the animals died in from thirty-three to forty hours after the injection, whereas if one test dose had been given they should have survived for forty-eight hours); and at intervals of six, twelve, eighteen and twenty-four hours thereafter, varying amounts of antitoxin, from 5 to 250 antitoxin equivalents, were injected, also subcutaneously. Guinea-pigs were used for the experiments, and a toxin control animal was injected for each group (Table 12).

TABLE 12.—EFFECT OF INJECTING VARYING AMOUNTS OF ANTITOXIN AT VARYING INTERVALS AFTER ADMINISTRATION OF SLIGHTLY MORE THAN ONE TEST DOSE OF TOXIN

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Anti-toxin III, C.c.	Multiple of Antitoxin Equivalents	Interval After Toxin	Results
81	225	0.0005	(Toxin control)	...	.....	Died in approx. 33 hours
82	225	0.0005	0.0025	5	Simultaneous	Survived
82	200	0.0005	0.025	50	Simultaneous	Survived
84	200	0.0005	0.125	250	Simultaneous	Survived
85	225	0.0005	(Toxin control)	...	.....	Died in approx. 33 hours
86	225	0.0005	0.0025	5	6 hours	Survived
87	200	0.0005	0.025	50	6 hours	Survived
88	200	0.0005	0.125	250	6 hours	Survived
89	225	0.0005	(Toxin control)	...	.....	Died in approx. 34 hours
90	225	0.0005	0.0025	5	12 hours	Survived*
91	200	0.0005	0.025	50	12 hours	Survived*
92	200	0.0005	0.125	250	12 hours	Survived*
93	225	0.0005	(Toxin control)	...	.....	Died in approx. 40 hours
94	225	0.0005	0.0025	5	18 hours	Survived*
95	200	0.0005	0.025	50	18 hours	Survived*
96	200	0.0005	.....	...	.....	Died in approx. 18 hours
97	225	0.0005	(Toxin control)	...	.....	Died in approx. 35 hours
98	225	0.0005	.....	...	.....	Died within 24 hours
99	200	0.0005	0.025	50	24 hours	Died in approx. 36 hours
100	200	0.0005	0.125	250	24 hours	Died in approx. 36 hours

* The animals were ill but recovered.

The experiments indicate that when slightly more than one test dose of toxin is injected, the lives of the animals may be saved if the antitoxin is given within eighteen hours after the toxin, although it does not prevent the onset of symptoms even when given twelve hours after. They also indicate that an excess of antitoxin affords no greater protection than smaller amounts, provided the smaller amount is sufficient to neutralize the amount of toxin administered.

2. In a second experiment, one test dose of toxin was injected subcutaneously (the control animal died in forty-eight hours), and an excess of antitoxin was injected at intervals of six, twelve, eighteen and twenty-four hours thereafter (Table 13). The animals all survived, showing that when a smaller amount of toxin is injected, the length of time during which the antitoxin may exert its influence is lengthened, and that, under such circumstances, if given within

twenty-four hours after the toxin, it may afford full protection.

3. A third experiment was performed in which rabbits were fed sufficient toxin to kill the control in approximately forty-five hours, and at varying intervals thereafter an excess of antitoxin was injected subcutaneously (Table 14).

The animals all survived, showing that when the toxin is administered by feeding as well as when it is injected subcutaneously, the administration of antitoxin may be of value if given within twenty-four hours after approximately one test dose (by mouth) of toxin.

THE THERAPEUTIC VALUE OF BOTULINUS ANTITOXIN

So far as we have been able to learn, there is no great amount of published data concerning therapeutic or prophylactic use of botulinus antitoxin. In this country, until very recently, the only available supplies of specific antitoxin have been at the Department of Animal Husbandry, University of Illinois, and at our own laboratory; but as stated earlier in this report, several investigators are now preparing antitoxin for experimental purposes. An attempt has been made in several outbreaks to combat the intoxication by administering antitoxinus serum, but without any very satisfactory results. Feb. 2, 1918, we gave 85 c.c. of immune goat serum¹⁰ (Mixture of A and B) by subcutaneous injection to each of two patients at Madera, Calif.¹¹ Both patients recovered; but as the antitoxin

TABLE 13.—EFFECT OF INJECTING LARGE AMOUNT OF ANTI-TOXIN (3,000 ANTITOXIN EQUIVALENTS) AT VARYING TIMES AFTER ONE TEST DOSE OF TOXIN

Guinea-Pig	Weight, Gm.	Toxin III, C.c.	Antitoxin III, C.c.	Interval After Toxin	Results
101	250	0.00014	(Toxin control)	.....	Died in approx. 48 hours
102	250	0.00014	1	Simultaneous	Survived
103	250	0.00014	1	6 hours	Survived
104	250	0.00014	1	12 hours	Survived
105	250	0.00014	1	18 hours	Survived
106	250	0.00014	1	24 hours	Survived

TABLE 14.—EFFECT OF INJECTING LARGE DOSES OF ANTI-TOXIN AT VARIOUS INTERVALS AFTER ADMINISTRATION OF ONE LETHAL TEST DOSE (BY MOUTH) OF TOXIN

Rabbit	Weight, Gm.	Toxin III by Mouth, C.c.	Antitoxin III, Subcutaneously, C.c.	Multiple of Antitoxin Equivalents	Time After Toxin	Results
1	1,250	1	(Toxin control)	.....	.....	Died in approx. 45 hours
2	1,250	1	1.5	4,500	Simultaneous	Survived
3	1,250	1	1.5	4,500	6 hours	Survived
4	1,300	1	1.5	4,500	12 hours	Survived
5	1,300	1	1.5	4,500	18 hours	Survived
6	1,300	1	1.5	4,500	24 hours	Survived

was given very late, in fact, after all the more seriously poisoned patients had succumbed, there is no definite evidence that the course of the illness was favorably influenced by the antitoxin, although it was later shown that the toxin of the strain recovered from the food was Type A.

McCaskey¹² has reported the administration of small doses of antitoxin to three patients who were

poisoned by home-canned string beans at Decatur, Ind. The antitoxin was given in small doses, from 5 to 10 c.c. One of the patients died and two recovered, and McCaskey believes that the serum was of some aid. Graham's antitoxin, which was Type B, was used in this outbreak, and the organism that was later recovered has proved to be of the same type.

At Detroit, in October, 1919, Jennings, Haass and Jennings¹³ administered antitoxin which was obtained from Graham at the University of Illinois. They injected 42 c.c. of serum intravenously in one case

TABLE 15.—TYPES OF STRAIN OF B. BOTULINUS RECOVERED FROM FOODS PREPARED FOR HUMAN CONSUMPTION

No.	Strain	Obtained From	Place of Poisoning	Food Material	Type
1	III	.....	San Jose, Calif.	Home-canned string beans	A*
2	IV	.....	Hillsboro, Ore.	Home-canned corn	A*
3	VI	Buckley (Niven strain)	Albany, N. Y.	Cheese	B*
4	VII	.....	Seattle	Home-canned asparagus	A*
5	VIII	.....	Berkeley, Calif.	Home-canned string beans	B
6	IX	.....	Madera, Calif.	Home-canned apricots	A*
7	X	.....	Hillsboro, Ore.	Home-canned peas	B
8	XI	Burke	Berkeley, Calif.	Home-canned string beans	A
9	XII	Burke	Sacramento, Calif.	Home-canned string beans	B
10	Boise	U. S. Dept. Agriculture	Boise, Idaho	Home-canned asparagus	A*
11	B. H.	Graham, Univ. Ill.	Decatur, Ind.	Home-canned string beans	B*
12	B. B. 12-8	State Dept. Health, Columbus, Ohio	Canton, Ohio	Bottled olives	A*
13	XXI	.....	Detroit	Bottled olives	A*
14	XXII	.....	Santa Maria, Calif.	Home-canned string beans	A

* Human beings were fatally poisoned.

without any apparent effect, and 20 c.c. in two injections to another patient, who recovered. They state that in the latter case the illness was so mild that they could "not state that the serum had any influence on her recovery."

There are newspaper reports that the Graham antitoxin has been used again in a recent outbreak of botulism in New York; but so far as we could learn, these have been all the instances recorded in the medical literature in this country.

It has been stated that there are two types of *B. botulinus* in this country, Types A and B, and that the antitoxin of one type has no apparent effect on the toxin of the other. We have had an opportunity of testing a sample of the Graham antitoxin and found it to correspond to our Type B, and Mrs. Burke⁹ has shown that eight of Graham's strains of *B. botulinus* belong to Type B. It is probable, therefore, that, except in our own cases, only Type B serum has been administered in all of the cases in this country, a point that must be remembered before one arrives at any definite conclusion concerning the value of botulinus antitoxin as a therapeutic agent.

In Table 15 we have tabulated all the strains of *B. botulinus* which we have been able to obtain from outbreaks in which food prepared for human consumption was the carrier of the toxin. A survey will show that of all the outbreaks in which the serum has been used, with the exception of that at Decatur, Ind., the toxin was produced by a strain of Type A, and consequently when Type B serum was used it could not

10. One c.c. of antitoxin was equivalent to approximately 3,000 minimal lethal doses for a guinea-pig.
11. Dickson, E. C.: Botulism, a Further Report of Cases Occurring in the Pacific Coast States, Arch. Int. Med. 22: 483 (Oct.) 1918.
12. McCaskey, G. W.: Bacillus Botulinus Poisoning: with a Report of Seven Cases, Four of Which Proved Fatal, Am. J. M. Sc. 158: 57 (July) 1919.

13. Jennings, C. G.; Haass, E. W., and Jennings, A. F.: An Outbreak of Botulism: Report of Cases, J. A. M. A. 74: 77 (Jan. 10) 1920.

be expected to give any satisfactory results. As it is impossible, except by laboratory experiments which consume valuable time, to know what type of toxin is responsible for the poisoning in a given outbreak, it will obviously be necessary to have a polyvalent antitoxin if satisfactory results are to be obtained.

It is our opinion that large doses of antitoxin should be given since the amount of toxin ingested is unknown, and that it should be given intravenously. In case we have an opportunity of observing any more cases we propose to follow the following plan: The usual precautions for the administration of horse serum will be observed, and the patient will be tested by intracutaneous injection for evidence of hypersensitiveness. When no hypersensitiveness is shown, the serum will be given at once and will be injected into the veins very slowly, not more than 1 c.c. a minute, until the full amount is given. When hypersensitiveness is shown, preliminary subcutaneous, intramuscular and intravenous injections of 1 c.c. at one hour intervals will be given, and one hour after the last injection the full amount will be injected intravenously at the rate of not more than 1 c.c. a minute.

CONCLUSIONS.

1. A true antitoxin may be prepared for the toxin of *Bacillus botulinus*.
2. There are at least two types of *B. botulinus*, which are distinct so far as their toxin-antitoxin relationships are concerned.
3. Experiments show that in the laboratory the antitoxin may protect against the action of the toxin for at least twenty-four hours after the administration of one test dose of toxin, but that the effectiveness is, to a certain extent at least, dependent on the amount of toxin injected.
4. For therapeutic administration a polyvalent antitoxin should be employed, and it should be given in large amounts and intravenously.

DIVERTICULITIS

REPORT OF A CASE WITH ACUTE PERFORATION

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Diverticula of a viscus may be either congenital or acquired, and they occur rather more frequently in the intestinal tract than in any other of the hollow viscera. A diverticulum is in reality a hernia outward through the wall of the viscus, carrying before it the mucous, atrophied muscularis and serous layers; or, as in some instances, only the mucous coat extrudes through the muscularis, carrying with it the serosa. The larger number, undoubtedly, are acquired, and it has been suggested that they occur more frequently where the artery penetrates the wall. They are complete or incomplete, depending on the extent of the evagination. When acquired, they occur almost invariably past middle life. Diverticula of various portions of the digestive tract are occasionally discovered in the course of an intensive roentgenologic study of the digestive tract. Multiple diverticula not giving rise to a definite set of symptoms constitute a condition termed diverticulosis, in contrast to diverticulitis, which should apply only to diverticula that do give rise to symptoms.

Diverticula of the digestive tract are found to involve the colon more frequently than any other portion. The sigmoid is the most common seat of location, and the transverse colon, cecum and rectum, in the order named, are the next most common locations. Diverticula of other portions are the exception. Diverticula in diverticulosis fill with and empty of bowel content without symptoms. The frequency with which roentgenologic studies are made of the gastro-intestinal tract for gastric disturbances demonstrates that diverticulosis is not uncommon.

A roentgenologic study is essential in making a differentiation between nonsurgical diverticulosis and surgical diverticulitis cases. True or complete diverticula, having a rather constricted opening, ultimately give rise to a set of symptoms either acute, subacute or chronic. False or incomplete diverticula rarely cause symptoms. Diverticula with retained fecal matter are potential sources of danger, the same as an appendix containing a fecal concretion. Sooner or later an acute inflammatory process takes place with rupture, if surgical interference is not resorted to early. In acute diverticulitis, operative interference is essentially the same as for acute appendicitis—that is, the diverticulum should be isolated from within the folds of the inflamed and indurated peritoneal tissues and clamped off close to the intestine, tied, and phenolated.

Some acute and almost all subacute and chronic manifestations, from the literature on the subject, seem clinically to be confused more with malignant processes than with any other single condition. In fact, one author gives statistics wherein the larger portion of the cases reported were considered, prior to operation, in one sense or another as probably malignant, the true nature of the condition not being determined until after resection of the mass involved. Since a diverticulum seldom occurs alone, except in the esophageal type, one should always, when operating on other portions of the digestive tract, make search for other diverticula which might possibly contain fecal concretions without inflammatory manifestations.

Small diverticula containing fecal concretions may readily be considered, when found adjacent, as enlarged glands incident to an acute or malignant process. These should be incised to determine their true nature and not left as a potential source of future trouble. Uncertain peritoneal fat accumulations also should be investigated by incision. Since diverticulitis may be confused with malignant processes, one must not consider, even in acute cases, any apparent associated glandular enlargements as such without incising them to determine their true nature. Further, if one was uncertain relative to a mass with supposed glandular enlargements, one could make the differential diagnosis by opening it. The presence of a fecal calculus would be practical evidence that the associated process was due to an advanced diverticulitis instead of to a malignancy.

REPORT OF CASE

History.—R. A. W., man, aged 58, who was 5 feet 10 inches in height and weighed 180 pounds, erect and well proportioned, with good habits and negative early history, had worked hard in the packing department of a scale works up to the day before the operation. The patient's recent history had been negative except for the presence of an "uncomfortable feeling" in the left lower abdomen for some months previous,

with an occasional sharp pain lasting a few minutes. There was no diarrhea. The patient was slightly constipated at times, which condition had no relation to his abdominal discomfort. No blood had been noted in the stool at any time. He had a mild attack of "bowel trouble" during the influenza epidemic in September, 1918, at which time he was away from work about a week. I attended him then, but his true condition was not even suspected, much less recognized. A mild cathartic, rest in bed, and restricted diet relieved the entire situation. He had no other attack until the present one, May 14 and 15, 1919. I saw the patient early on the morning of the 15th. He had had a bad night and seemed desperately ill, with pain and tenderness in the left lower abdomen. On manual examination the entire abdomen was rigid, but more so on the left side. The legs were drawn up and respiration was short and grunting. The patient could extend his legs, but complained on straightening out his left leg. There was faulty left leg flexion on the abdomen with manual pressure over the tender area. He had a temperature of 100.4, pulse 88, respiration from 22 to 24. A tentative diagnosis of an acute pathologic condition of the structures in the left side of the abdomen was made, and the patient was taken to the hospital. Morphin sulphate, one-fourth grain, was administered hypodermically before he left home, and blood and urine examinations were made immediately on his arrival. The urine was negative except for a few hyaline and granular casts. The heart and lungs also were negative. Blood counts revealed 15,000 leukocytes per cubic millimeter, with 83 per cent. polymorphonuclears, which indicated the necessity of immediate operation.

Operative Findings.—At noon, the abdomen was opened in the median line. The bowels were distended with gas and the peritoneum was markedly congested, especially to the left of the incision. The omentum was adherent over a mass in the left flank. There was a moderate increase of fluid. The mass was found adherent to the sigmoid, a part of which it seemed to be when the hand was first put into the abdomen. A cleavage line soon freed the sigmoid of suspicion as to a possible perforating malignant process. As the mass in the hand was freed from the sigmoid and brought up into the wound, it had more the appearance of a malignant process with perforation of the colon into the indurated mass surrounding it than of an acute process. An adjacent *enlarged gland* rather added to this suspicion when I first inspected the mass.

Palpation of the colon from the cecum to the location of the mass showed it to be located in the ascending loop of the transverse colon opposite to and adherent to the sigmoid colon, from which it had just been freed. As the result of a further attempt to determine the exact nature of the lesion, another cleavage line allowed of a partial separation of the mass from the wall of the intestine down to what appeared to be extruded intestinal wall tissue. It was at this time that the actual pathologic condition first dawned on me. Finger dissection, carried around the mass, freed it from the intestinal wall except for rather a short pedicle. The pedicle was double clamped and was cut between the clamps, freeing the indurated mass from the bowel. After removal it was immediately opened and found to contain a fecal concretion, the size of a small filbert, protruding through the ruptured end of the diverticulum. The stump of the pedicle was then tied and phenolated. This completed, the adjacent supposed *enlarged gland*, surrounded by a considerable amount of fat, was investigated by incision through its uninflamed covering. It also was found to contain a fecal concretion. The entire colon was then investigated and found to contain numerous filbert-sized fat accumulations along the surface. These were suspected of being other diverticula, not obstructed. This was later demonstrated to be the case, as shown by a roentgenogram that was taken after the patient had recovered and resumed his former duties. Operative recovery was complicated by superficial wound sepsis, but otherwise recovery was excellent. The postoperative history to date has been negative. The patient considers himself "better than for years."

ROENTGEN-RAY STUDY OF THE GREAT VESSELS

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Roentgen-ray investigation of the living heart was begun more than a decade ago. Groedel,¹ Dietlen,² Moritz,³ Claytor,⁴ Merrill,⁴ Veith,⁵ Bordet⁶ and Vaquez⁶ were active in forwarding the work. The late Dr. Walter James Dodd took up the subject at the Massachusetts General Hospital some ten years ago, and established a routine method of cardiac examination. A few years later Dr. George W. Holmes⁷ added his efforts to those of Dr. Dodd, and has continued the work since the untimely death of the latter. A careful comparison of the percussion outlines with the roentgenographic outlines of the heart was rendered possible through the cooperation of Dr. George C. Shattuck of the medical service of the Massachusetts General Hospital. His findings and an excellent review of the literature were published⁸ in 1916. The work of these investigators was for the most part directed toward the study of the heart itself, and the great vessels were considered of secondary rather than of primary importance.

The accurate percussion of supracardiac dulness is often extremely difficult, especially in the presence of obesity. Even when the width of this dulness can be determined with some certainty and the clinician is sure that it is increased, he is sometimes at a loss to interpret the finding. This is due to the comparatively large number of pathologic conditions that may occur in the upper mediastinum. These conditions may be roughly divided into (1) those not involving the great vessels, and (2) those caused by changes in the great vessels.

The first classification includes such conditions as substernal thyroid, enlarged thymus, mediastinal tumor, and enlarged mediastinal glands. The value of the roentgen ray in establishing these diagnoses is well recognized.

It is my object here to describe the roentgen-ray findings in a series of cases falling under the second classification. Six causes of increase in the width of the shadow of the great vessels have been observed, namely, chronic lesions of the mitral valve, causing a dilated pulmonary artery and left auricle; arteriosclerosis; syphilitic aortitis, which may or may not have reached the stage of aneurysm; long continued hypertension; a high diaphragm; and a dilated pulmonary artery, such as occurs with some congenital hearts.

All of the drawings used to illustrate these conditions are traced from "7-foot-plates" made by the teleroentgenographic method. The patient sits erect, with the anterior surface of the chest placed against a cassette containing a plate and an intensifying screen. The tube stand is placed behind the patient so that the focal spot of the tube is at a distance of 7 feet from the cassette and centered a short distance above a point

1. Groedel: Die Röntgendiagnostik der Herz- und Gefässerkrankungen, Berlin, 1912.
2. Dietlen: Deutsch. Arch. f. klin. Med. 88: 55, 1906-1907.
3. Moritz: Deutsch. Klin., 1904, Part 2, p. 31.
4. Claytor and Merrill: Am. J. M. Sc. 138: 549 (Oct.) 1909.
5. Veith: Jahrb. f. Kinderh. 68: 205, 1908.
6. Vaquez and Bordet: Le cœur et l'aorte, ed. 2, 1918.
7. Holmes, G. W.: The Use of the X-Ray in the Examination of the Heart and Aorta, Boston M. & S. J. 179: 478 (Oct. 10) 1918.
8. Shattuck, G. C.: How We Can Detect Slight Enlargement of the Heart, Boston M. & S. J. 174: 384 (March 16) 1916.

midway between the angles of the scapulae. The exposure is made during normal respiration in order that there may be no errors due to abnormal positions of the diaphragm. It is important that the patient be placed squarely against the cassette, because slight rotation will cause distortion of the cardiac shadow. Exposures of from fifteen to twenty seconds are used.

A silhouette of the heart and great vessels is obtained which is practically free from distortion and may be used for mensuration. In order to emphasize the shape of the silhouettes, outline drawings have been traced from the plates. These drawings represent the borders of the heart and great vessels, the approximate positions of the diaphragmatic domes, and the inner borders of the thoracic cavity. The histories and clinical findings are taken from the clinical records of the Massachusetts General Hospital.

Although this paper deals for the most part with the roentgenographic appearance of the heart, the reader is not to infer that fluoroscopic examinations are not of considerable value. A fluoroscopic tracing of the outline of the heart and great vessels made while the patient faces the observer is a routine procedure used by the roentgen-ray department at the Massachusetts General Hospital. A second tracing is made of the aortic arch with the patient rotated until the shadow of the structure has attained its narrowest transverse dimension. The latter procedure sometimes makes possible a differential diagnosis between a dilated tube and a tortuous one. The patient possessing the dilated aorta cannot be rotated into any position in which the shadow of the aortic arch does not seem wider than normal. The arch which appears wide in an anteroposterior view, as a result of tortuosity, is likely to possess a normal width when viewed laterally because the tube is not dilated. The lateral observation may be a difficult one to make particularly when the subject is obese and the hilum markings are much thickened.

Before speaking of the abnormal, it is perhaps best to describe the normal heart silhouette. Figure 1 represents the shape of the heart and great vessels as they lie in the thorax after the sternum has been removed, the lungs and pleura retracted, and the pericardium dissected away. It is evident that all of the chambers of the heart, except the right ventricle, form portions of the silhouette outline.

In considering the great vessels, it is important to remember that the superior vena cava casts little or no shadow on a roentgen-ray plate, and that the right border of the vessels, as shown in the roentgenogram, is in reality the right border of the ascending aorta. Comparison of this drawing (Fig. 1) with the cardiac outline shown in Figure 2 reveals the meaning of each curve in the roentgenogram, i. e., the right auricle below and the ascending aorta above form the right side of the shadow, while the left side is made up of

the descending aorta, the pulmonary artery, the left auricular appendage, and the left ventricle. Of course, not all of these structures are always sufficiently prominent to be made out. The pulmonary artery and the left auricular appendage rarely stand out so that they may be differentiated, except in disease of the mitral valve.

It is well in the beginning to establish the normal width of the aortic arch. This cannot be done with absolute accuracy, but within broad limits it may be said that for persons weighing between 100 and 200 pounds the greatest distance between the right border of the ascending aorta and the left border of the descending aorta, as seen on a 7-foot-plate, is normally between 4.5 and 6 cm.

CHRONIC ENDOCARDITIS

When the mitral valve is damaged, whether the lesion be stenosis, insufficiency, or a combination of the two, there results a derangement of the mechanical balance in the cardiac apparatus. After a time the auricles and pulmonary artery increase in size.

The left auricular appendage and the pulmonary artery may become so large that they overlie the left border of the descending aorta and extend upward to the crest of the arch. When this occurs, the supracardiac dullness is definitely increased to the left. This condition is well illustrated by Figures 2 and 3, which represent chronic cases of double mitral disease.

In Figure 2 the pulmonary artery has not become sufficiently enlarged to overlie completely the left side of the arch, but Figure 3 illustrates this more advanced condition. It is of interest

to note that the width of the aortic arch is 6.3 cm. in the first case, and 5 cm. in the second, while the actual width of the great vessels is considerably greater in both cases.

ARTERIOSCLEROSIS

Arteriosclerosis is primarily a disease of the intima, and consequently no great changes in the diameter of the aortic tube are to be expected. However, after fibrosis and calcification set in there may be a derangement of the course of the tube, especially when hypertension is present, and tortuosity of the aorta results. The appearance seems to suggest that the artery has increased in length. This tortuosity shows itself in the roentgenogram as an increased prominence of the aortic "knob" (that is, the portion of the ascending aorta which passes backward to the left of the spine just before becoming the descending aorta) and in a tendency of the descending aorta to swing well to the left of its normal position. In the oblique view the upper portion of the arch may be "clubbed," but the width in the midportion is usually normal. Calcified plaques can be shown only very rarely.

Figure 4 shows a tracing of the heart of a man past 60 years of age who had suffered from attacks of anginoid pain. The heart is not enlarged, the blood

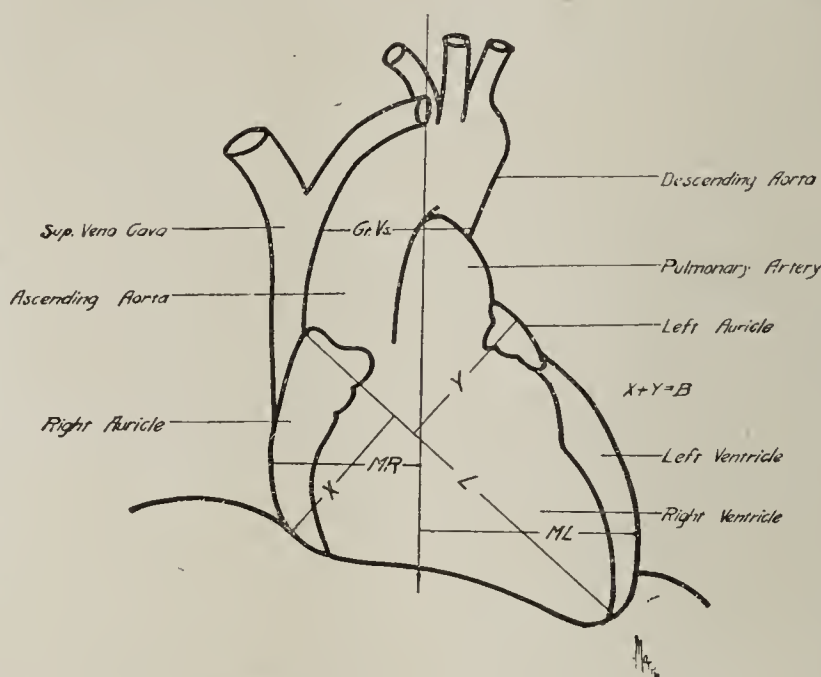


Fig. 1.—Normal outline of heart and great vessels.

pressure is not elevated, and there is nothing normal made out on physical examination of the heart. No evidence of syphilitic infection is obtainable at present. The aortic arch is definitely widened, and the left border of the descending aorta lies to the left of its normal position. This finding, taken with the history of lead poisoning and the thickening of the peripheral arteries, points to the presence of arteriosclerosis.

The amount of arteriosclerosis as indicated by the shape of the aortic arch is slight in this case, and yet the presence of any sclerotic process in the arch makes it seem probable that an involvement of one or both of the coronary arteries may be causing the attacks of anginoid pain.

Figure 5 portrays the shape of the heart and great vessels of another man about 60 years of age who complains of no cardiac symptoms, and yet shows a marked tortuosity of the arch, an enlarged heart, and a high blood pressure. Here also are found a systolic murmur in the aortic area and an accentuated aortic second sound which accompany a diseased intima and a high blood pressure. The aortic arch measures 1.1

clinical signs of kidney damage are obtainable, and there is no evidence pointing to syphilitic infection.

Still another case of marked arteriosclerosis is shown in Figure 7. The symptoms in this case practically all point to sclerotic changes in the cranial vessels, and the laboratory findings indicate that the kidneys are damaged, also probably as a result of renal blood vessel changes. The roentgenogram shows a definite "knob" at the crest of the aortic arch, and the left border of the descending aorta swinging well to the left. The long diameter of the heart is increased. The vascular system in such a case would doubtless show extensive generalized sclerosis at necropsy.

SYPHILIS

The predilection of *Spirochaeta pallida* for the aortic arch is well known. Douglas Symmers⁹ found syphilitic aortitis in 55.7 per cent. of 314 old syphilitic cases coming to necropsy.

Arthur R. Elliott¹⁰ says:

From the practical clinical standpoint, accumulating evidence is forcing the conclusion that a persistently positive

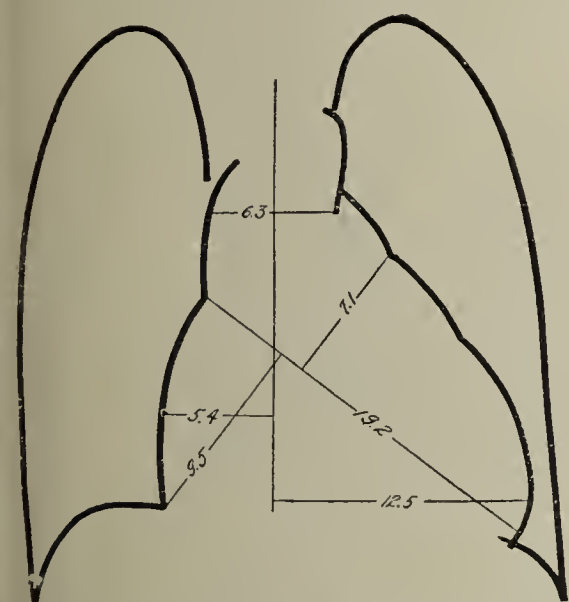


Fig. 2.—Tracing in Case 1, double mitral disease.

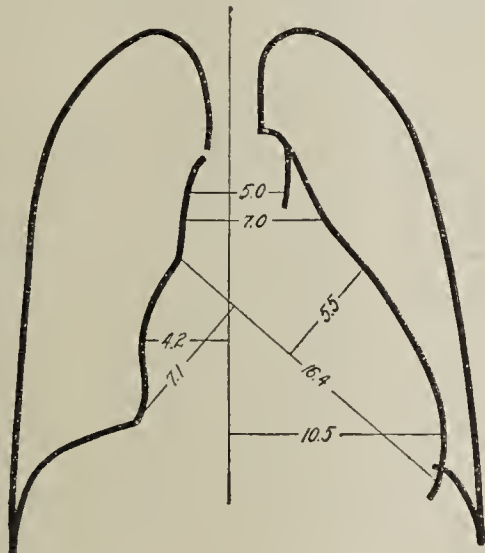


Fig. 3.—Tracing in Case 2, double mitral disease with increased supracardiac dulness.

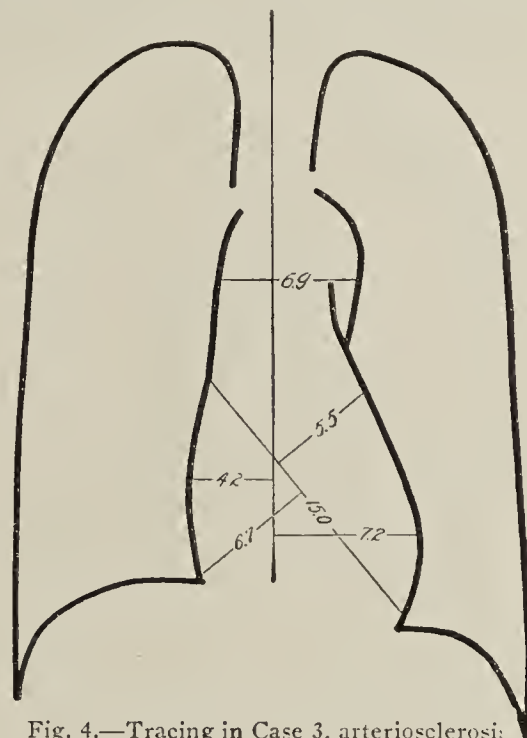


Fig. 4.—Tracing in Case 3, arteriosclerosis.

cm. more in this case than in the previously mentioned one, and yet there are no symptoms. This may be explained by assuming that the process is a diffuse one which has not involved the coronary arteries so much as the aorta itself.

The roentgenogram is of no direct value in ascertaining the condition of the coronary arteries, and is, therefore, of more diagnostic than prognostic importance. It is clear that the width of the sclerotic arch indicates little as regards the general condition of the patient, but it offers another link in establishing the diagnosis of arteriosclerosis of the aorta.

It is customary to look for arteriosclerosis in patients past 60 years of age, and yet the condition occasionally occurs in younger persons. Figure 6 shows the heart and great vessels of a woman of 39 who is known to have had hypertension and external signs of arteriosclerosis for six months. Here, as in Figure 5, the outlines of the "knob" are covered by a prominent descending aorta. It is very probable that the aortic tube itself is somewhat widened as a result of the hypertension. The heart is enlarged principally in its long diameter. The physical signs seem to indicate that this heart is very similar to the one shown in Figure 5. The only added feature is a relative insufficiency of the mitral valve. No definite

Wassermann reaction in a patient

without evidence of syphilis in the skin, mucous membranes or nervous system points to the aorta as the next most probable seat of the disease.

Lenz writes that, in large cities, 25 per cent. of all syphilitic deaths is due to aortitis and its consequences.

Warthin is said to have discovered active lesions in the aorta of every case of latent syphilis that he examined.

Syphilis of the aorta is certainly not uncommon, but it is sometimes difficult to recognize. The process is likely to originate in the ascending aorta, often just above the aortic valve. The organisms enter the walls of the vessels by way of the vasa vasorum, destruction occurs after a time, and the stiffness of the wall slowly disappears. As a result, the pressure of the blood stream coming from the left ventricle causes a dilatation and change in outline of the great vessel. If the spirochete always limited its activities to one small portion of the aorta, the discovery of this localized dilatation by means of the roentgen ray would make the diagnosis fairly certain. However, different

9. Symmers, Douglas: Anatomic Lesions in Late Acquired Syphilis, J. A. M. A. **66**: 1457 (May 6) 1916.

10. Elliott, A. R.: Syphilitic Aortitis, M. Clinics of N. Am. **1**: 1305, 1918.

authorities give the percentage of cases of aortitis which is so localized as between 15 and 30 per cent. of all of those coming to necropsy. It seems possible that the percentage may be higher among the living, for it often takes more than a localized dilatation to produce death and bring the subject to the postmortem table.

Sir Clifford Allbutt¹¹ has called attention to cases of dilatation of the aorta noted in the French and British literature in which the etiology was thought to be rheumatic fever, septicemia, phlegmonous inflammation of the hand, and influenza. If such cases are authentic, they are extremely rare.

In most cases one is probably safe in assuming syphilis to be the cause of a localized bulging of the aorta, particularly when this abnormality occurs just above the aortic valve. Figures 8, 9 and 10 illustrate this type of case. Each roentgenogram shows a definite prominence at the base of the ascending aorta. Some of the signs of arteriosclerosis are also present, but early arteriosclerosis is not unusual in syphilitics.

The patient showing aortitis usually is between 30 and 50 years of age, and gives a history of infection some fifteen to twenty years previously. One expects

be dilated and is definitely wider than normal, but is also tortuous, and shows the characteristics of arteriosclerosis. The auscultatory findings, the blood pressure, and the condition of the peripheral arteries point to arteriosclerosis. There are two pulsating masses in other parts of the body thought to be aneurysms. The definite bulging of the ascending aorta to the right is more characteristic of a dilated tube than of a tortuous one. It seems probable that both arteriosclerosis and syphilis are etiologic factors in the production of this picture.

Syphilis of the aortic arch is usually a progressive process, and it may go on to one or more of three end-points, namely, aneurysm, partial or total occlusion of the coronary arteries, and sclerosis and retraction of the cusps of the aortic valve. Aneurysm, except when it occurs in some rare location, can be shown without difficulty on the roentgenogram. No direct evidence of involvement of the coronary arteries can be obtained; but when aortic regurgitation occurs, the increased length of the heart and the prominence of the curve of the left ventricle suggest its presence.

Figure 12 presents the combination of such a heart, with a wide aortic arch and the clinical signs of a

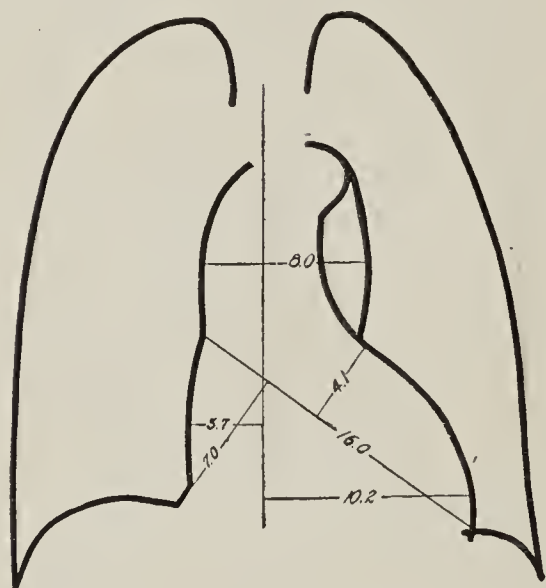


Fig. 5.—Tracing in Case 4, arteriosclerosis.

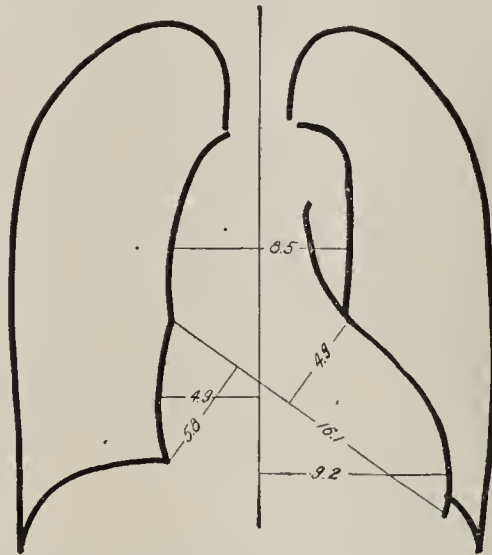


Fig. 6.—Tracing in Case 5, precocious arteriosclerosis with hypertension.

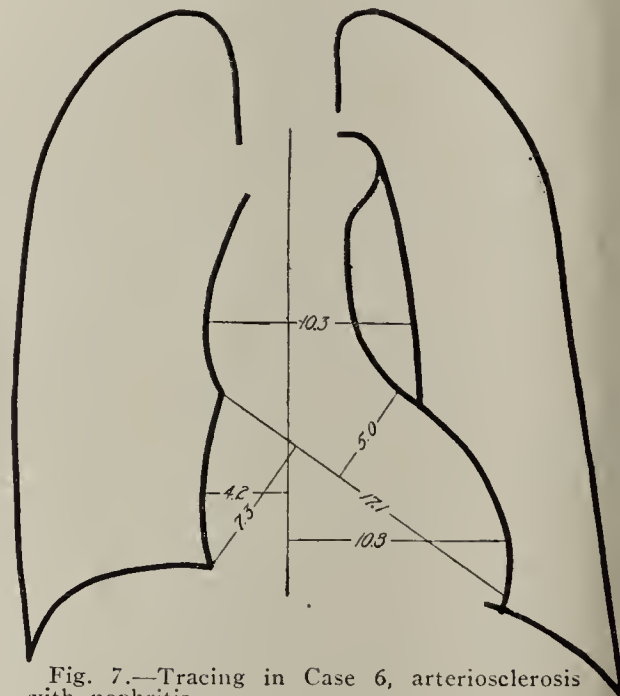


Fig. 7.—Tracing in Case 6, arteriosclerosis with nephritis.

to find a systolic murmur in the aortic area and also a diastolic murmur, together with a diminished to absent aortic second sound if the aortic valve is involved. It is often true that these signs may be elicited only in certain positions, with the lungs deflated.

Figure 10 is rather interesting because of the numerous diagnoses made. This woman was in and out of the hospital during a period of eight years, and the very multiplicity of diagnoses would argue against their correctness. Her precordial pain and dyspnea on exertion should have suggested the possibility of aortitis. This possibility was probably ruled out because of the negative Wassermann reaction; but it is now a rather general belief that a negative Wassermann reaction does not rule out syphilis.

It is the diffuse dilatation of the arch that offers the greatest difficulties in diagnosis from the roentgenologic point of view. Syphilis is not the only condition producing a wide aortic arch. When a diffuse dilatation does occur, it should be explained on the basis of the clinical findings and the patient's story. Figure 11 illustrates this point. The arch appears to

diseased aortic valve. It would seem reasonable to explain this picture by assuming that the widening of the arch occurred first as a result of a syphilitic aortitis, which process later extended down to the aortic valve, causing sclerosis and retraction of the cusps and giving rise to aortic regurgitation. Later, the increased load on the left side of the heart caused lengthening of the cardiac outline and hypertrophy of the left ventricle.

HYPERTENSION

Hypertension is often spoken of as a cause of dilatation of the aorta. The ascending portion receives the full force of the blood expelled from the left ventricle, which is usually much hypertrophied in cases of hypertension, so that it seems reasonable to expect a certain amount of stretching of the aorta. The process is in all probability a slow one, and the small number of cases studied indicates that it requires months rather than days for its completion. Smith and Kilgore,¹² in 1915, called attention to the wide

11. Allbutt, Sir Clifford: *Diseases of the Arteries*, Sect. 1, p. 143.

12. Smith and Kilgore: Dilatation of the Arch of the Aorta in Chronic Nephritis with Hypertension, *Am. J. M. Sc.* 149: 503 (April) 1915.

arches observed in a series of fourteen cases of chronic nephritis with hypertension. These patients had systolic blood pressures between 185 and 250, were between 30 and 50 years of age, and all showed negative Wassermann reactions.

Syphilitic aortitis is likely to occur between the ages of 30 and 50 years, and often is accompanied by some hypertension. Both conditions are therefore to be kept in mind when one is considering a widened arch in a person of middle age.

Arteriosclerosis in a more or less marked degree is not an uncommon finding in cases of hypertension, especially after the age of 50. The dilatation might be explained in some cases as a result of the influence of a high tension exerted against a weakened, sclerotic vessel wall.

Figures 13 and 14 show the hearts and great vessels of two patients with chronic cardiorenal disease, in which hypertension is an outstanding feature. The width of the great vessels is greater than normal in both cases. It is impossible to divide the left border into its component parts in this picture, and the border of the descending aorta cannot be definitely located. The aortic knob stands out prominently, and the heart

during normal breathing. Obesity in itself probably has no influence on the width of the great vessels. The cardiac outline shown in Figure 16 was traced from a 7-foot plate of an active, rather obese man weighing 220 pounds. The diaphragm was normally placed, and showed normal excursion when studied fluoroscopically. There was no abnormal width of the aortic shadow in this case. It seems, therefore, that a high diaphragm is in itself a cause of widening of the aortic arch. This fact should be kept in mind in such conditions as pregnancy, abdominal tumor, subphrenic abscess, ascites, extensive pleural adhesions, and extreme obesity.

DILATED PULMONARY ARTERY

The increased supracardiac dulness resulting from an enlargement of the pulmonary artery and left auricle in mitral disease has already been discussed. There are certain rare conditions in which the pulmonary artery alone is dilated; and when this occurs, the dulness extends much farther to the left than it should normally.

A striking example of this type of heart is shown in Figure 17. This man, aged 26, gives a history of

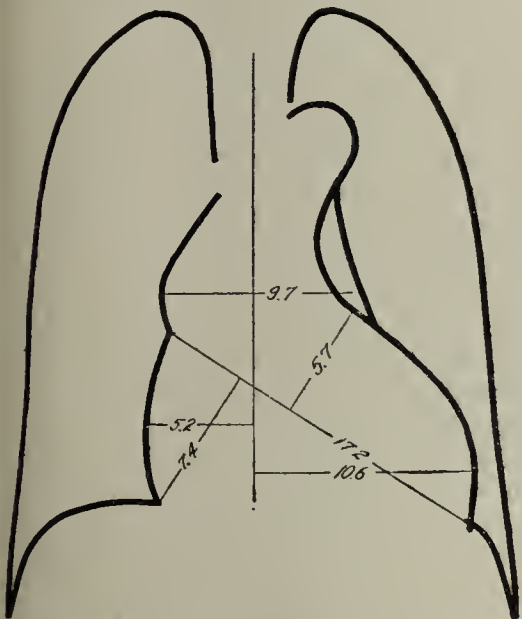


Fig. 8.—Tracing in Case 7, syphilitic aortitis.

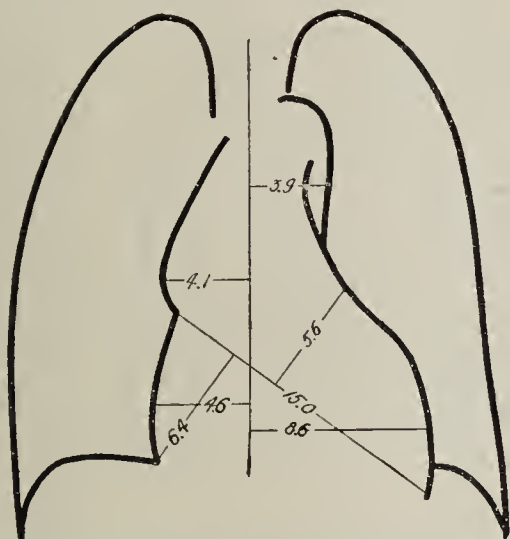


Fig. 9.—Tracing in Case 8, syphilitic aortitis and tremor of syphilitic origin.

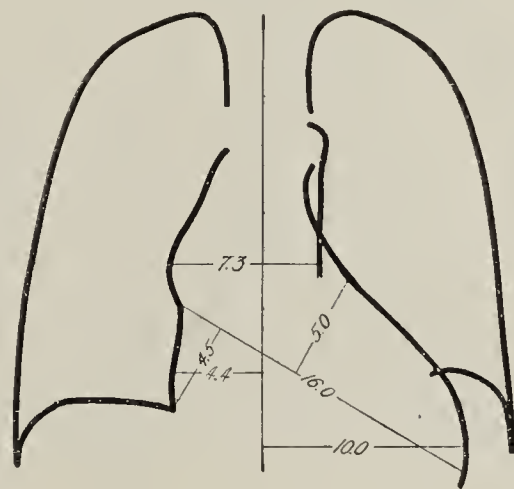


Fig. 10.—Tracing in Case 9, long unrecognized syphilitic aortitis.

is much enlarged, and presents a prominent left ventricular curve. The prominent knob suggests arteriosclerosis, and the part which that process plays in the widening of the shadow of the great vessels cannot be definitely stated. Suffice it to say that hypertension is at least a factor in the production of increased supracardiac dulness.

HIGH DIAPHRAGM

The frequency with which wide aortic arches occurred in obese persons who showed no definite evidence of cardiac disease made it seem probable that obesity might be related to the width of the great vessels. After some study it became apparent that the wide arches usually occurred in the type of patient who possessed a high diaphragm as a result of a large amount of abdominal fat. The outlines of three arches of this kind are shown in the upper portion of Figure 15.

The larger drawing in Figure 15 was prepared to show the effect of a high diaphragm on the width of the aortic shadow in a normally proportioned person. It is evident that the dotted outline traced from a plate made in full expiration is much wider than the solid outline, which represents the size of the great vessels

repeated pulmonary infection during the greater part of his life. The pulmonic second sound is markedly accentuated, and a definite shock, synchronous with the second sound, may be felt when the hand is placed on the chest in the precordial area. The electrocardiogram shows a definite right ventricular preponderance. These signs point to an elevated blood pressure in the pulmonary circulation which might produce a dilatation of the pulmonary artery. Such dilatation should produce a picture similar to that shown in Figure 17.

This case has been variously diagnosed as congenital heart, obstruction in the pulmonary circulation, and mitral stenosis. Be the diagnosis what it may, the roentgenogram seems to identify the enlarged pulmonary artery as the cause of the increased supracardiac dulness. Here, then, is a rare condition in the upper mediastinum which presents roentgen-ray evidence of no little diagnostic value.

DIFFERENTIAL DIAGNOSIS

The roentgenologist can draw some conclusions from his findings without clinical aid. The mitral type of heart and the type presenting a dilated pulmonary artery give rather typical silhouettes, and can usually be recognized. A high diaphragm is an evident condition, especially when viewed fluoroscopi-

cally. The sclerotic arch presents a prominent "knob" and descending portion when seen anteriorly: a clubbing at the crest and a normal width when seen obliquely. There are left the two conditions that produce dilatation of the aortic tube, namely, hypertension and syphilitic aortitis. A localized dilatation indicates the latter condition. A general dilatation may be due to either.

A large, hypertrophied heart accompanies a widened arch resulting from long continued hypertension. A diffusely dilated arch accompanied by a small normal, or slightly dilated heart is therefore likely to be caused by syphilis. Of course, after the syphilitic process has involved the aortic valve and the left ventricle becomes hypertrophied, the general appearance resembles that caused by hypertension.

In aortic regurgitation, the hypertrophy of the left ventricle is much greater than that of the right. In hypertension, both ventricles show hypertrophy to about the same degree. As a result, the distance across the base of the heart as well as the length is increased, and a generally enlarged organ results. The heart outline in regurgitation is increased downward and to the left, but the distance across the base (B in

only in those cases that show a localized prominence at the base of the ascending aorta.

It is the exception rather than the rule to find a single cause underlying increased supracardiac dullness.

The occurrence of syphilitic aortitis, arteriosclerosis, hypertension, and a high diaphragm in the same patient is not so very uncommon.

REPORT OF CASES

CASE 1 (231479, Fig. 2).—Double mitral disease.—A white man, weighing 172 pounds, had had an attack of precordial pain, not very severe, at the age of 12; gonorrhea at 17 and again at 18, and a second attack of precordial pain at 20. He drank much whisky, beer, tea and coffee. There was no history of children's diseases or tonsillitis. Seven months before examination he had been in bed one week with dyspnea, palpitation and precordial pain. There was no cough, edema, hemoptysis or fever. One week before he had had a more severe attack beginning with a feeling of constriction in the epigastrium followed by dull precordial pain and palpitation. He could sleep only in the sitting position. The pulse rate was 102. The sounds were irregular. The pulmonic second sound was greater than the aortic second sound. There was a loud, blowing, systolic murmur at the apex transmitted to the axilla. There was a short presystolic roll. There were no thrills. The systolic blood pressure was 100, the diastolic, 70. The arterial walls were not palpable. The renal function was 45 per cent., the Wassermann test, negative.

CASE 2 (233383, Fig. 3).—Double mitral disease.—A white girl, aged 16, had had severe attacks of chorea at intervals during the greater part of her life, and pneumonia and pleurisy about a year before examination. She began to complain of nausea, epigastric pain, edema of the feet and hands, and dull aching pain in the hands, elbows and knees about four months before. About two months before, she began to have dyspnea, palpitation and precordial pain, and went to bed, where she had remained ever since. During the past three weeks there had been much vomiting, some cough, and a sharp knifelike pain between the scapulae. The patient weighed 98 pounds and possessed a very ruddy complexion which bordered on cyanosis. The tonsils were ragged and hypertrophied. The sounds were regular, rapid

and of fair quality. The pulmonic second sound was greater than the aortic second sound and accentuated. There was a presystolic roll at the apex followed by a soft, musical systolic murmur transmitted to the axilla. There was a thrill at the apex. The arterial walls were not palpable. The systolic blood pressure was 105, and the diastolic, 70. There was edema of the feet and ankles. The throat consultant noted that pus could be squeezed from the tonsils. The white blood count ranged from 13,000 to 14,000 per cubic millimeter. The Wassermann test and blood culture were negative. Roentgenoscopy revealed many pus pockets about the roots of the teeth.

CASE 3 (232013, Fig. 4).—Arteriosclerosis.—A white man, aged 62, had diphtheria at 9 years of age; scarlet fever (?) in childhood; gonorrhea at 20; pneumonia at 40; penile sores at 45, and painters' colic at 50. His wife has had three miscarriages and one stillborn child. He chewed tobacco, but did not use alcohol. Sensations of constriction in the chest accompanied by hot, swollen sensations in the hands began one and one-half years before examination. The attacks lasted only a few minutes, and occurred about once a week. Nitroglycerin gave relief. The attacks had been becoming worse and more frequent, and seemed to be brought on by exertion. They were now accompanied by dyspnea and palpitation. There was no edema. He was much more comfortable while in bed. The patient weighed 120 pounds. The cardiac impulse was seen and felt in the fifth space. The sounds were regular and of fair quality; not rapid. The pulmonic second sound equaled the aortic second sound; not accentuated. There were no murmurs or thrills. The

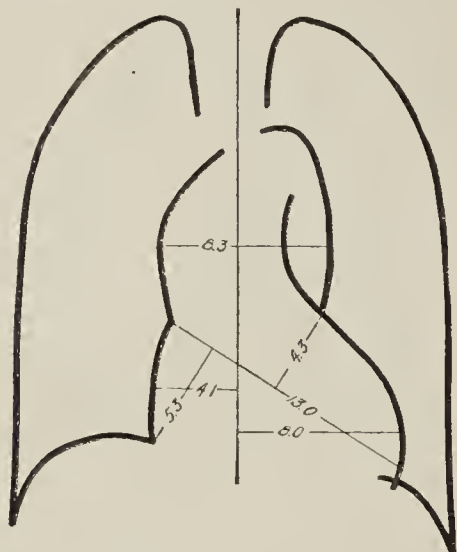


Fig. 11.—Tracing in Case 10, multiple aneurysms.

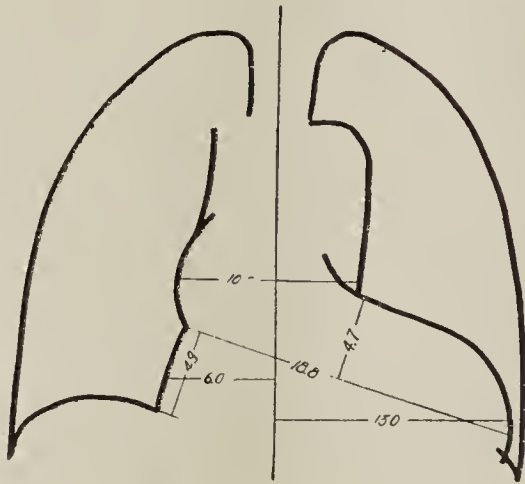


Fig. 12.—Tracing in Case 11, syphilitic aortitis and aortic regurgitation.

Fig. 1) is not much greater than normal. This difference is not always outstanding, but it sometimes gives a clue to the correct diagnosis in difficult cases.

This system of differential diagnosis seems simple and so it would be were it not for the fact that widening of the great vessels is practically never due to a single etiologic factor. Syphilis is quite often accompanied by arteriosclerosis. A certain degree of arteriosclerosis is a very common finding in cardiorenal disease with hypertension. The obese patient with a high diaphragm is the one most likely to show a high blood pressure, and he may also have a syphilitic infection. Obviously, the problem is not always a simple one.

SUMMARY

There has in recent years been an ever increasing tendency to use the roentgenogram in the diagnosis of syphilitic aortitis. That it is a very valuable adjunct to the clinical findings there can be no doubt; but I wish to emphasize the importance of a conservative interpretation of a widened shadow of the great vessels.

Arteriosclerosis, hypertension, chronic endocarditis, a high diaphragm, or a dilated pulmonary artery may give a similar picture, and it is perhaps wiser for the roentgenologist to suggest the diagnosis of aortitis

arterial walls were sclerotic. The brachials were not tortuous. The systolic blood pressure was 150; the diastolic, 74. The liver edge was palpable and slightly tender. The knee jerks were equal and active. The renal function was 60 per cent.; the urine, negative; hemoglobin, 75 per cent.; the Wassermann test, negative.

CASE 4 (233131, Fig. 5).—*Arteriosclerosis*.—A white man, aged 60, with no history of "rheumatism," and who denied venereal infection, had had some nocturia for several years, but no illness except attacks of pain in the right upper quadrant twelve years ago. These attacks were severe enough to require morphin. He now complained of burning pain in the right lower quadrant occurring in attacks during the past eight months. He had had occasional dizzy spells, but no dyspnea, edema, precordial pain, headaches or visual disturbances. He was well nourished and weighed 154 pounds. The heart sounds were regular and not rapid. The aortic second sound was greater than the pulmonic second sound and accentuated. There was a soft systolic murmur at the base transmitted to the neck. The systolic blood pressure was 220, and the diastolic, 110. The palpable arteries were sclerotic and tortuous. The pulse was of good volume and tension.

The urine showed nothing definitely abnormal. The non-protein nitrogen in the blood was 44.8 mg. per hundred c.c. The Wassermann test was negative. A cardiogram detected no ventricular preponderance.

CASE 5 (233568, Fig. 6).—*Precoious arteriosclerosis with hypertension*.—A white woman, aged 39, with no history of "rheumatism" or miscarriages, who denied venereal infection and whose "tubes and ovaries" had been removed eleven years before for pelvic abscess, had been weak and tired and subject to "hot flashes" and "cold sweats" since the age of 18. Dyspnea began three years before we saw her. About two years before she began to have palpitation and severe headaches accompanied at times by vomiting, dizziness, staggering and stars before the eyes; and on two occasions, everything turned black before her eyes. During the past year these symptoms had been less

marked, but there had been some edema of the ankles, and a numb feeling in the right leg and arm at intervals. There had been no nocturia or other urinary symptoms. The patient was pale, and weighed 112 pounds. There was marked venous pulsation in the neck. The sounds were regular and rapid and of good quality. The aortic second sound was greater than the pulmonic second sound and much accentuated. There was a reduplicated first sound and a systolic murmur at the apex transmitted to the axilla. There was a systolic murmur in the aortic area not transmitted. Very questionable thrills were observed at the apex and at the aortic area. No presystolic murmur was detected. The arterial walls were palpable. The brachials were tortuous. The systolic blood pressure was 270 and the diastolic, 190, six months before, and now 210 and 140. The urine showed nothing abnormal except the slightest possible trace of albumin and rarely a white cell at numerous examinations. There was no fixation of gravity or retention of chlorids. The renal function was 60 per cent. Nonprotein nitrogen was 35.9 mg. per hundred c.c. of blood. The Wassermann test was negative twice.

CASE 6 (232022, Fig. 7).—*Arteriosclerosis with nephritis*.—A white man, aged 64, had had scarlet fever in childhood; was ill several months twenty years before we saw him with nausea, diarrhea, vomiting and abdominal pain; had had "grip" four years before, and generalized edema with headache, blurring of vision and delirium three years before. A "shock" occurred one year before, when he was uncon-

scious for twenty-four hours. There had been some weakness in the left arm and leg since. The patient denied venereal infection. He felt weak and tired. He still had weakness of the left arm and leg, and had attacks of dizzy sensations accompanied by vomiting, a feeling of pressure in the head, and a general numb feeling. He weighed 175 pounds. The pupils were irregular. The cardiac impulse was seen and felt in the sixth space. No thrills were heard. The sounds were regular and of fair quality, but rapid. The aortic second sound was greater than the pulmonic second and accentuated. No murmurs were detected. The arterial walls were palpable, the brachials not tortuous. The systolic blood pressure was 208, and the diastolic, 120. The knee jerks were normal. The urine, at two examinations, showed a trace of albumin, a specific gravity of 1.020 and 1.023, and frequent hyaline and granular casts. The renal function was 12 per cent. The Wassermann test was negative.

CASE 7 (Outpatient Department 392675, Fig. 8).—*Syphilitic aortitis*.—A negro man, aged 45, gave no history of "rheumatism." He had sore throats as a child. He drank much alcohol. He had gonorrhea at 25, and a penile sore at the same time that lasted for one month. He had had some precordial pain, occasional headaches, attacks of weakness and shortness of breath for the last year. He weighed 136

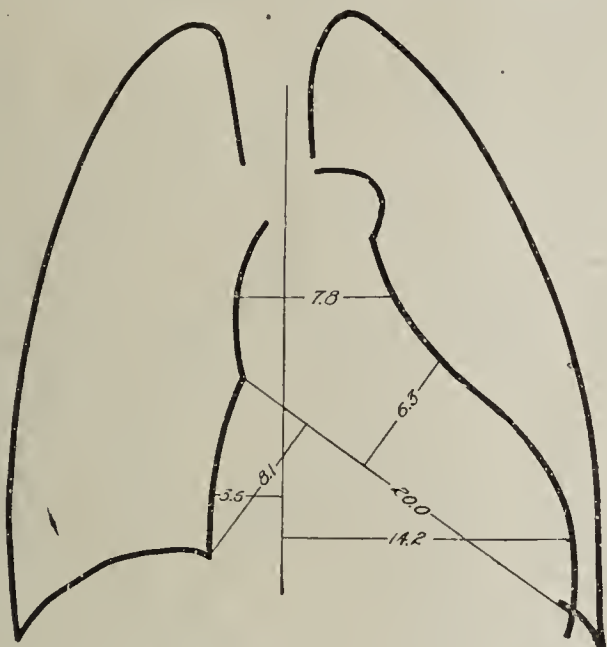


Fig. 13.—Tracing in Case 12, cardiorenal disease.

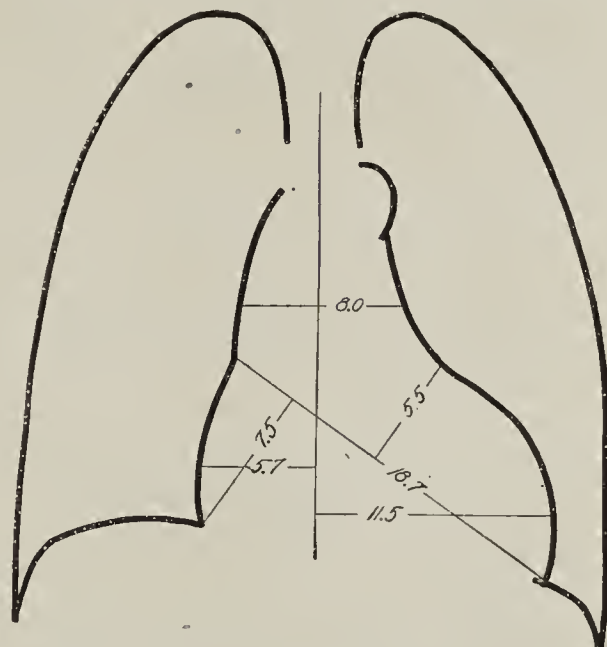


Fig. 14.—Tracing in Case 13, cardiorenal disease.

pounds. The pupils were equal, and reacted. The right epitrochlear gland was palpable. There was a systolic murmur at the apex transmitted toward the base and the axilla. The pulmonic second sound was accentuated. There was a short systolic murmur at the base transmitted to the neck. No definite diastolic murmurs were made out. The liver edge was palpable. The knee jerks were equal. The urine showed the least possible trace of albumin and a few white blood cells. The Wassermann test was negative.

CASE 8 (Outpatient Department 392688, Fig. 9).—*Syphilitic aortitis and a tremor of syphilitic origin*.—A white man, aged 43, had had typhoid, scarlet fever and gonorrhea; also a penile sore some years before. A slight tremor appeared in the left arm five years before, and remained constant and of the same intensity for three years. It then extended to the left leg and right arm, and for two years had been getting worse. There had been some shooting pains recently in the legs. Otherwise the patient felt well and strong. He weighed 140 pounds. The left arm showed a constant tremor. The right arm and left leg showed the same phenomenon to a less degree. The tremor diminished while purposeful movements were being performed. The right pupil was slightly irregular. There was no reaction to light and distance. There was a slight systolic murmur in the aortic area. The aortic second sound was greater than the pulmonic second sound. The systolic blood pressure was 170; the diastolic, 110. The lungs were negative. The knee jerks were absent. The blood Wassermann test was moderately positive. The spinal fluid

showed 31 cells per cubic millimeter, an increased pressure, and a strongly positive Wassermann reaction.

CASE 9 (Outpatient Department 181357, Fig. 10).—*Syphilitic aortitis long unrecognized*.—In 1911 a Jewish woman, aged 50, weighing 155 pounds, complained of continual cough with nonpurulent sputum, dyspnea, pain in the throat and back, and some incontinence of urine. The aortic second sound was accentuated; the heart was not enlarged to percussion. The systolic blood pressure was 150, and the bases of the lungs were full of râles. A diagnosis of bronchitis was made.

In 1912 the cough was still present, and was worse at night. The patient raised little and felt weak. No murmurs could be made out on heart examination. The blood pressure was noted as 130/80.

In 1913 the cough was worse but nonproductive. There was marked dyspnea on exertion. The aortic second sound was greater than the pulmonic second sound. A soft systolic murmur was heard in the aortic area. The blood pressure was noted as 135/90.

In 1914 the old symptoms were still present. Pain had appeared in the left part of the back and in the wrists and ankles.

In 1915 the systolic blood pressure was noted as 180. The patient was treated in the dental clinic for apical abscesses; in the throat room for pain in the throat, without a definite diagnosis, and in the orthopedic department for pains in the wrist and ankles. All of this treatment failed to clear up the original symptoms.

In 1916 the patient was admitted to the hospital for study. The Wassermann test was negative.

After a week the patient was discharged with a diagnosis of: question of cholecystitis, chronic pyelitis, cystitis, and a question of mitral disease.

In 1917 the patient was admitted to the hospital the second time and was discharged with the diagnosis of senile heart, chronic arthritis, obesity and a question of myxedema. The blood pressure was noted as 140/90.

In 1919 the patient complained of hoarseness, cough, a feeling of anxiety, dyspnea, and some palpitation. The heart sounds were regular and distant; a systolic murmur was heard all over the precordia, transmitted to the neck; there was a diastolic murmur in the aortic area.

CASE 10 (231966, Fig. 11).—*Multiple aneurysms*.—A white woman, aged 50, who had been married thirty years, whose husband, she said, was well, who had had one child that lived to be 21 but died of tuberculosis, and four miscarriages, who had had no diseases of childhood, but "gastric catarrh," evidenced by abdominal distress and backache for many years, and who did not use alcohol, for the last five months had had an attack of dizziness and vomiting about once a week. The attacks lasted one or two days. She was well between the attacks. At times she had a pain in the back which was made worse by exertion and which on several occasions had been transmitted down the left arm and had been accompanied by tingling in the fingers. There had been progressive loss in weight, amounting to 70 pounds in four years, and the patient now weighed 100 pounds. A small, pulsating mass could be felt and seen in the base of the neck on the right side. A systolic bruit was heard over this tumor. There was a firm, round, somewhat tender pulsating mass in the right upper quadrant of the abdomen about the size of an orange. No bruit was heard over this tumor. The heart sounds were regular, rapid and of fair quality. The aortic second sound was greater than the pulmonic second sound and slightly accentuated. There was a loud, blowing, systolic murmur at the base, heard best over the aortic area and transmitted to the neck. There were no thrills. The

systolic blood pressure was 225, and the diastolic, 140. The arterial walls were palpable, tortuous and markedly sclerosed. The urine showed a slight trace of albumin and a few red and white cells at two examinations. The red count was 3,000,000. Hemoglobin was 70 per cent. The Wassermann test was negative.

CASE 11 (Outpatient Department 404570, Fig. 12).—*Syphilitic aortitis and aortic regurgitation*.—A negro, man, aged 61, had had pneumonia twice, and gonorrhea twenty-five years before. He had been married thirty years; the wife had never been pregnant. For about eight months he had been suffering from epigastric distress, dyspnea and palpitation on exertion. There was no edema. He weighed 185 pounds. The systolic blood pressure was 200; the diastolic, 80. The knee jerks were absent, the pupils sluggish. The brachial arteries were sclerosed and tortuous. The patient had a Corrigan pulse. There was a double murmur in the aortic area and a diastolic murmur to the left of the sternum. The aortic second sound was absent. There was a pistol shot sound in the groin. There were visible pulsations in the neck. At one examination, the urine was not definitely abnormal.

CASE 12 (231934, Fig. 13).—*Cardiorenal disease*.—A white man, aged 49, who had had diphtheria at 25, tonsillitis at the same time, and syphilis at the age of 20, and who did not drink steadily but who went on alcoholic sprees, reported that nocturia had begun one year before and had become progressively worse. Severe frontal morning headaches had begun seven months before; there had been attacks of dyspnea during the last seven

months; blurring of vision and spots before the eyes for the last three months; dizzy vomiting spells for the last two months, and cramps in the legs recently. The patient weighed 150 pounds. The sounds were regular and rapid. The pulmonic second sound was greater than the aortic second sound. There was a systolic murmur over the precordia heard best in the fourth left interspace. The pulses were equal and of high tension. The arterial walls were palpable. The systolic blood pressure was 210, and the diastolic, 140. The brachials were tortuous. The fundi showed albuminuric retinitis. The renal function was 10 per cent., the Wassermann test negative.

CASE 13 (233130, Fig. 14).—*Cardiorenal disease*.—A man, aged 52, who had no diseases except scarlet fever in childhood,

who had always been a heavy meat eater, who used much alcohol until two years before, and who was a heavy smoker, began to complain of dyspnea and a "lazy" feeling about three years before. He had been in the hospital twice before because of a worn-out feeling. Orthopnea became noticeable two weeks before and was accompanied by nocturia and edema of the ankles, lower legs and thighs. There had not been precordial pain at any time. The patient weighed 196 pounds. In January, 1917, the sounds were regular and of good quality. The rate was normal. There was a soft systolic murmur at the apex. The second sounds were accentuated. The liver edge was palpable 2 cm. below the costal margin. An electrocardiogram disclosed left ventricular preponderance. The Wassermann test was negative. The renal function was 30 per cent. The urine showed a specific gravity between 1.020 and 1.024, albumin from a very slight trace to a slight trace, and many hyaline casts. The systolic blood pressure was 180, and the diastolic, 110. In May, 1919, the pulmonic second sound and the aortic second sound were equal. There was a shrill, high-pitched murmur in the mitral area. There was no thrill. The brachials were tortuous. The systolic blood pressure varied between 210 and 230; the diastolic was 140. The renal function was

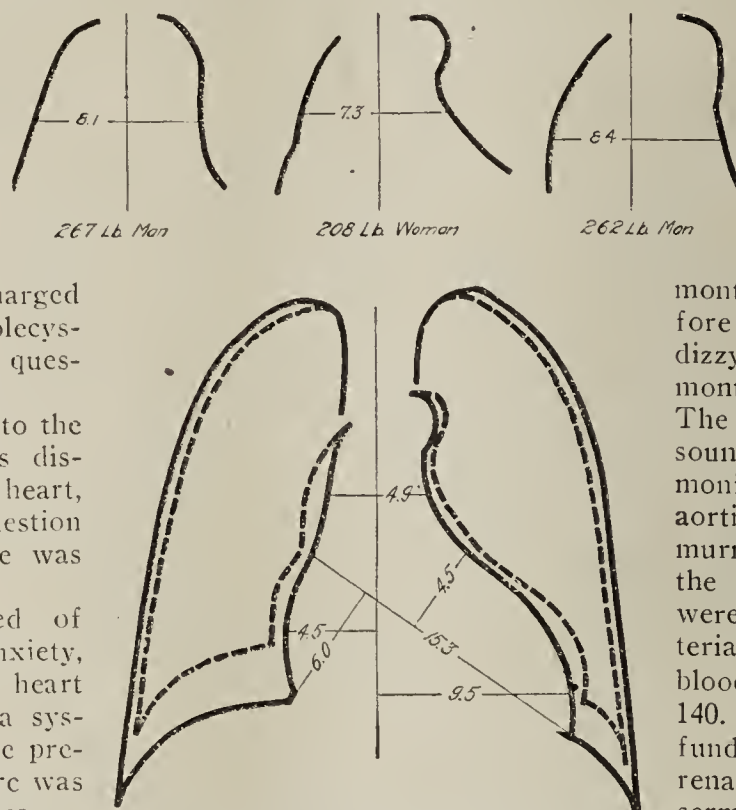


Fig. 15.—Tracings in Cases 14, 15, 16 and 17, with widening of the shadow of the great vessels due to a high diaphragm.

from 20 to 25 per cent. The urine showed hyaline and granular casts and a specific gravity between 1.012 and 1.020. In October, 1919, the second sounds were accentuated. There was a blowing musical systolic murmur at the apex transmitted to the axilla. The radial arteries were sclerotic and beaded. The systolic pressure was 220, the diastolic, 150. There were râles in the bases of the lungs. There was edema of the ankles and thighs. The fundi showed sclerosed and tortuous arteries and small sclerotic plaques. The urine showed a specific gravity from 1.010 to 1.014, from a trace to a very slight trace of albumin, and hyaline and granular casts. The renal function was 25 per cent.; the hemoglobin, 70 per cent.

CASES 14, 15, 16 and 17 (Fig. 15).—*Widening of the shadow of the great vessels due to a high diaphragm.*—The three upper tracings represent the size and shape of the great vessels in patients weighing more than 200 pounds. In each case there was a high diaphragm probably the result of a large amount of abdominal fat. These sketches are traced from the 7-foot plates. In well-built persons weighing more than 200 pounds and possessing a normally placed diaphragm, the great vessels rarely measure more than 6 cm. in width.

The large drawing represents the shape and size of the heart, great vessels and thoracic cavity of a well-built man, aged 39, weighing 142 pounds. The solid outline was made from a 7-foot plate taken during normal breathing, while the broken outline was traced from a 7-foot plate of the same patient made during forced expiration. This man was a recently discharged soldier who had been leading an active life, and he had a good diaphragmatic excursion. During expiration the diaphragm rises and the chest walls are drawn in. The heart is forced upward, but apparently the upper portion of the aortic arch remains fixed. As a result, the heart and great vessels are compressed, and a widening of their transverse diameters results.

This patient came in complaining of a feeling of fullness in the chest which was worse after meals and had been present for about a year. There were no other symptoms. On auscultation there was a double murmur in both the aortic and mitral areas, and the aortic second sound was sharp. The pulse pressure was a little higher than normal. There was no rheumatic or syphilitic history. The electrocardiograph detected nothing abnormal. The patient was thought to have an early involvement of both the aortic and the mitral valves of rheumatic origin.

CASE 18 (Fig. 16).—*An aortic arch of normal width in an obese man who possessed a diaphragm that was not abnormally high.*—This tracing was made from a 7-foot plate of the heart of a young, active man weighing 220 pounds. He was not of an athletic type and showed considerable

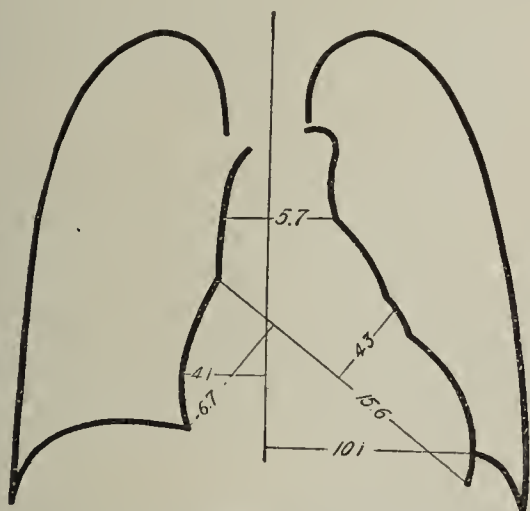


Fig. 16.—Tracing in Case 18; an aortic arch of normal width in an obese man who possessed a diaphragm that was not abnormally high.

subcutaneous fat, but the diaphragm seen fluoroscopically was not pushed up abnormally high as a result of excessive abdominal fat. There were no symptoms, and the man seemed to be normal in every way.

CASE 19 (145038, Fig. 17).—*Dilated pulmonary artery.*—A white man, aged 26, who had croupous pneumonia at 12, typhoid and diphtheria at 13, bronchopneumonia (?) at 25, no history of "rheumatism," chancroid (?) eight months before, who had been in the hospital with a "cold" for two weeks about four months before, who had been working but was never "up to snuff," and who had had some precordial pain and dyspnea for the last two years, had complained for the last four days of headaches, "hot and cold" sensations,

pains all over the body, and a cough accompanied by pain in the left lower chest. This condition was diagnosed as a mild bronchopneumonia. The patient weighed 124 pounds.

At the age of 12, the heart was outside the nipple line $3\frac{1}{2}$ inches from the midsternum. There was no increase to the right. The action was rapid and regular. The second sound at the apex was accentuated. The pulmonic and aortic second sounds were equal. There was a systolic murmur at the apex not transmitted. The patient had been in the hospital with croupous pneumonia at this time.

At the age of 13 the heart was in the fifth space in the anterior axillary line. There was no increase to the right. The action was rapid and regular. The pulmonic second sound was very much accentuated and equaled the aortic second sound. The first sound was replaced by a systolic murmur heard all over the precordia, loudest in the mitral areas and transmitted to the axilla. The spleen was palpable. The patient was in the hospital at this time with diphtheria and typhoid.

At the age of 25, the heart apex impulse was felt and seen 13 cm. to the left of the midsternal line. The sounds were regular

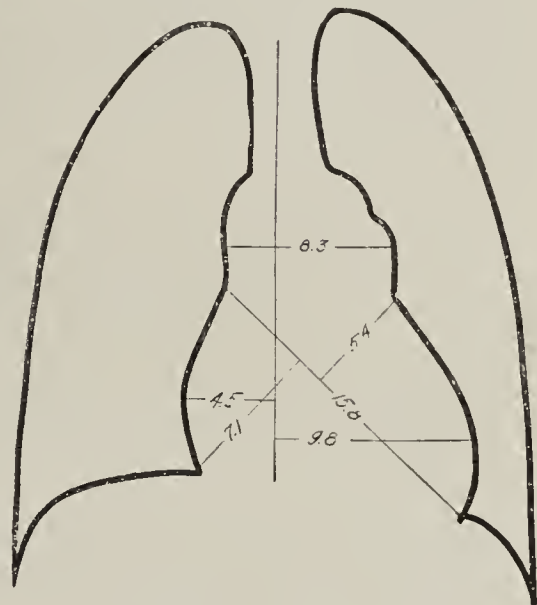


Fig. 17.—Tracing in Case 9, dilated pulmonary artery.

and of poor quality. The pulmonic second sound was accentuated and reduplicated, and equaled the aortic second sound. A short systolic murmur at the apex was transmitted to the axilla. There was a short diastolic murmur just to the left of the sternum. The systolic blood pressure was 110, the diastolic, 60. Roentgenoscopy revealed a prominence of the pulmonary artery and a thickening of the hilum shadows and lung markings. A diagnosis of mitral insufficiency and bronchopneumonia (?) was made at this time.

At present, the impulse is heaving. A sharp slap is felt half way between the pulmonary area and the apex. The pulmonic second sound is greater than the aortic second sound and much accentuated. There is a soft systolic murmur at the apex. The second sound is loudest where the slap is felt, and is synchronous with it. There is no thrill. The systolic blood pressure is 148, and the diastolic, 110. The sputum shows the Type IV pneumococcus, and blood culture, *Staphylococcus albus*.

Children Born Out of Wedlock.—Questions about the legal obligations of parents and of the state to children born out of wedlock are answered in a bulletin entitled "Illegitimacy Laws in the United States and Certain Foreign Countries," issued by the Children's Bureau of the U. S. Department of Labor. Attention is called in this report to the fact that legal provisions for the support of the child born out of wedlock are inadequate—the payments prescribed are often too low, and in most of the states the period of support is too brief, sometimes reaching only to the child's tenth or twelfth year. The report suggests that illegitimacy legislation in the United States might be improved by uniform provision for the establishment of legitimacy; the legitimation of children of null or subsequent marriages; possibility of adoption by the father, and declaration that the relation of mother and child is the same whether the child is legitimate or not. In addition to a critical analysis of illegitimacy legislation in this country, the report contains an analysis of certain phases of the various state laws in tabular form, the complete text of all the state laws, the illegitimacy provisions of the codes of France, Germany and Switzerland, and a reference index to the U. S. illegitimacy laws.

ENCEPHALITIS LETHARGICA IN PREGNANCY*

MARGARET SCHULZE, M.D.

SAN FRANCISCO

The case which I wish to report occurred in a pregnant woman of 35. In reviewing the recent literature, I have found records of only seven other cases of encephalitis lethargica occurring in pregnant women. In the nona epidemic of 1890, no cases complicating pregnancy are mentioned.

Though the fact is not always brought out in the smaller series, the disease appears to be far more common in the male sex than in the female, a point that was emphasized by Neal.¹ Of 189 cases in recent English and American reports, only sixty-seven occurred in women and girls, and of these only thirty-three were in women of the child-bearing age. The mortality is, however, considerably higher in women than in men. Of 122 men, seventy-two recovered, twenty-three died, and in twenty-seven the outcome of the disease had not been determined at the time of the report; of the sixty-seven women, twenty-seven recovered, twenty-four died, and in sixteen the outcome was not yet known. The mortality rate in the pregnant women appears to be particularly high. Of the eight recorded cases, including my own, one recovered, five died, and in two the outcome was not reported.

The first case in this series was reported by Harris.² This case occurred in the British epidemic in the spring of 1918, and was considered botulism, as were many of the earlier cases in England.

A young woman who was pregnant, almost at term, ate heartily of tinned salmon, March 28. The following morning she developed diplopia, bilateral ptosis, marked drowsiness, and pyrexia up to 103 F. She was delivered, April 2, without influence on the course of the disease, which had continued with double third nerve paralysis, drowsiness, pyrexia of 100 F., retention of urine and increasingly active delirium up to the time of writing. Examination of the suspected food had shown a large gas-producing, anaerobic gram-positive, probably spore-bearing bacillus which had not as yet been identified.

Duncan³ in May, 1918, reported a case of a married woman several months pregnant, who had been ill a few days. When first seen she was sitting by the fire-side with both eyes closed. She was dull, but spoke when she was addressed. She could raise her eyelids, the right more than the left. There was herpes of the upper lip. The outcome of this case is not stated.

Neal¹ has reported the only case with recovery at the time of writing.

This was a woman of 25 who was five months' pregnant. She had had an attack of influenza two weeks before the onset of the encephalitis, which began gradually with headache, chills and fever, vomiting, sweating and delirium. The spinal fluid showed great increase in cells and protein, a negative Wassermann test and negative guinea-pig inoculation for tuberculosis. Her condition remained the same for two weeks or more. Then she gradually recovered; the facial paralysis cleared up, and she had a normal delivery at term.

Sachs,⁴ in a series of seven cases, had three fatalities, of which two occurred in pregnant women. The duration of pregnancy is not stated in either case. In one there was a distinct history of influenza three months before the onset of the attack. Both of these cases presented all the ocular symptoms, the lethargy, and the ataxic and cerebellar symptoms. In one of the cases, in addition to the symptoms of poliomyelitis superior, there was also marked wasting of the muscles of the upper extremity and tremor of the hands. One case showed a spinal fluid with 20 cells. Acetone and diacetic acid were present in the urine in both cases. Both patients were extremely toxic. The question of inducing abortion was considered but rejected, and it was very questionable whether anything would have been gained by it. The total duration of the disease in each case was about four weeks.

Putnam's⁵ case was in a woman of 26, who had had two previous normal pregnancies and whose present pregnancy had been normal.

She was found lying on the floor apparently asleep. When aroused, she was weak and dizzy and took no notice of her surroundings. She had no pain except a slight headache and no visual disturbances. Her face was expressionless and her eyes closed. The pulse was 114 and the temperature 99.4 F. The pupils were contracted and she tended to assume cataleptic postures. Her symptoms were at first thought merely hysterical, but her condition did not change, and the pulse rate and temperature remained elevated. Examination disclosed no paralyses, but some rigidity of the extremities and a slight Kernig reflex with some pain on full extension. The eye muscles and face were normal. The leukocyte count was 14,000; the urine was negative; the Widal test proved negative; the spinal fluid showed 11 cells, gave a negative Noguchi reaction and reduced Haines' solution. For the first few days, she awoke spontaneously for food and defecation; later she could be aroused for these functions.

She was delivered three weeks after the onset of her illness. She did not arouse during the four hour labor. The child was stillborn; its heart had not been heard the whole day previous. Four days after delivery the patient died.

Bassoe⁶ reports a fatal case with postmortem examination in a woman of 34, an octipara in the sixth month of pregnancy.

This patient complained of listlessness, fatigue and headache. She had some nausea but no vomiting, and moderate fever. The facial expression was dull, and there was a slight facial palsy on the right side. The protrusion of the tongue was weak. The back was somewhat rigid, the deep reflexes on the left side were increased, but there was no rigidity of the extremities. The pupils and eyegrounds were normal. She was mentally dull, slightly confused and disoriented for time. Five weeks after the onset of the disease, hyperpyrexia and pulmonary edema developed and the patient died.

Postmortem examination revealed marked congestion of the veins of the pia, with edema and congestion of the brain and minute hemorrhages visible on the cut surfaces, especially in the white matter of the centrum ovale and the basal ganglions. The ventricles and their ependyma were of normal appearance. Sections from the frontal lobe showed marked distention of the vessels, especially the veins, but there were only very small lymphocytic infiltrations around some of the smaller vessels. In the left motor cortex, the pia was loose in texture with slight increase of cells. There was no definite sign of inflammation in the cortex itself. The left optic thalamus showed very extensive inflammation with large collections of mononuclear cells about the distended vessels. There were no large hemorrhages. All the sections

* From the Woman's Clinic, University of California Hospital.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of introductory notes on the history of the disease. The complete article appears in the author's reprints.

1. Neal, Josephine B.: Lethargic Encephalitis, Arch. Neurol. & Psychiatry 2: 271 (Sept. 1) 1919.

2. Harris, W.: Lancet 1: 568 (April 20) 1918. McCaw, H. J.: Ibid. 1: 616 (April 27) 1918.

3. Duncan, J. W.: Brit. M. J. 1: 551 (May 11) 1918.

4. Sachs, B.: New York M. J. 109: 894 (May 24) 1919.

5. Putnam, O.: J. Missouri M. A. 16: 260 (August) 1919.

6. Bassoe, Peter: Epidemic Encephalitis (Nona), J. A. M. A. 72: 971 (April 5) 1919.

of the pons showed marked inflammatory changes, most pronounced in the dorsal portion, with numerous small hemorrhages. The bulb showed no inflammatory changes.

REPORT OF AUTHOR'S CASE

The case which I wish to report is the following:

Mrs. N. A., a pregnant woman aged 35, entered the obstetric service of the University of California Hospital, April 23, 1919, complaining of edema of the legs and hands of one month's duration, and aching pains in both arms during the previous week. The pregnancy was one month past term. She had had one full term pregnancy six years before, complicated with marked edema, and some eye symptoms and pains in the legs during the last month, which had disappeared shortly after delivery. Her past history was otherwise negative. She had not had influenza, nor had any one in her immediate family.

Physical examination was negative except for the presence of a full term fetus in the left occipito-anterior position, varicosities of both legs with more edema of the legs than these could account for, and moderate edema of the hands.

Her mentality was rather low, but her mind seemed clear. Sensory examination disclosed a slight hyperesthesia to touch and pain over the posterior part of each shoulder; elsewhere sensation was normal. The pupillary reactions were normal. The deep reflexes were somewhat exaggerated, with a false patellar clonus. The left abdominal reflex was increased, the right was doubtful. There was a right sided Babinski reflex. Both hands showed a constant tremor, which increased if the patient tried to control it, but decreased if her attention was diverted. The blood pressure was 140 systolic and 95 diastolic. The urine showed the faintest possible trace of albumin with no casts. Both blood and urinary nitrogen were normal, and blood and urine cultures sterile. As all her teeth had been extracted dental roentgenograms were not taken and there were no other foci of infection demonstrable. The hemoglobin was 55 per cent. Sahli; the blood Wassermann reaction was negative. The temperature on the day of entry was 37.5 C. (99.5 F.), on the following day 37.2 C. (98.9 F.). After this it was normal for five days, until delivery. The pains in her arms persisted and at times were so severe as to require morphin for sleep. April 30, after five hours of normal labor, she was delivered of a child weighing 4,600 gm. (10 pounds). Following delivery she had a low grade fever, never higher than 37.6 (99.7 F.) and therefore not requiring a uterine culture. On the tenth day the temperature reached 38 C. (100.4 F.). It was now noticed that she had become very dull mentally and seemed in a sort of stupor most of the time. She was easily aroused, and when addressed answered rationally and was clearly oriented. She complained of diplopia, and said that the pain in her arms kept her awake at night. A slight ptosis of the left lid and a right sided facial paralysis developed. The Babinski reflex had now disappeared, the other reflexes and the sensory findings remaining about the same. There were no signs of meningeal involvement.

A spinal puncture, May 15, yielded a clear fluid under slightly increased pressure. The Nonne and Noguchi reactions were negative, the cell count was twenty-six and Pethling's solution was reduced. The Wassermann reaction was negative and cultures were sterile. There was no web. A second puncture, May 15, was again sterile. There was moderate leukocytosis, varying from 12,000 to 18,000 with 90 per cent. polymorphonuclears. A nasopharyngeal culture showed *Bacillus influenzae*. The neurologic signs varied. She developed weakness of the muscles of mastication, tremor of the tongue with protrusion to the right, and then a right external rectus palsy.

About May 23, she began to improve markedly. Her mentality was much clearer, the tremor decreased, the tongue could be protruded normally, and the external rectus palsy was much less marked. The right arm reflexes were still increased, but the other reflexes were normal except for an typical Oppenheim sign on the right side. The temperature became normal.

May 26, after getting up and walking about her bed without permission, she suddenly developed symptoms of pulmonary embolism and died in twenty minutes, twenty-six days after delivery.

Postmortem examination revealed thrombosis of both femoral veins and extensive bilateral pulmonary emboli, which occluded almost the entire pulmonary circulation. Macroscopically the brain was practically normal except for a few punctate hemorrhages on cut section in the region of the midbrain. The cerebrospinal fluid was normal in appearance and amount. Microscopic examination revealed the characteristic changes of lethargic encephalitis. There was congestion and slight round cell infiltration of the leptomeninges. There were marked perivascular infiltration and a few small hemorrhages about the vessels, especially of the midbrain and pons. There was no degeneration of the nerve cells. The medulla showed much less marked changes; the cerebral cortex was normal.

Clinical Notes, Suggestions, and New Instruments

ADMINISTRATION OF DIGITALIS BY "EGGLESTON METHOD"

CARY EGGLESTON, M.D., NEW YORK

Many requests have been received for information as to the practical application of this method of administering digitalis, and therefore it seems advisable to publish a brief statement regarding the details involved. The reader is referred to the original paper¹ for the data on which the method is based, and to the papers by S. Marx White and R. Edwin Morris,² and by R. Edwin Morris,³ for comments on the method.

This method of digitalis dosage and administration is designed especially for rapid digitalization by oral administration. It depends on the establishment of an average total amount of digitalis which is required to produce full digitalization, or the minor toxic actions of digitalis. This total amount is expressed in terms of the activity of the drug and the patient's body weight in pounds. The activity of the drug is determined by the cat method of Hatcher,⁴ described in the *American Journal of Pharmacy*, the unit being the weight of dry drug, in milligrams, which is required to kill 1 kg. of cat when a solution is injected slowly and continuously intravenously. This amount is called a cat unit. High grade specimens of digitalis, when not assayed by the cat method, may be regarded as having an average activity of 100 mg. to the cat unit. The average total amount of digitalis required for oral administration to man is 0.15 of one cat unit per pound of body weight.

CALCULATION OF AVERAGE TOTAL AMOUNT

The calculation of the average total amount required by any given patient may be as follows:

1. The patient's weight is determined in pounds.
2. The cat unit of the digitalis is determined.
3. One of the following formulas is applied:

$$\text{Formula I: } \frac{C. U. \times 0.15 \times W}{1,000} = \text{Grams of powdered leaf in total amount}$$

$$\text{Formula II: } \frac{C. U. \times 0.15 \times W}{100} = \text{Cubic centimeters of tincture in total amount}$$

$$\text{Formula III: } \frac{C. U.}{100} \times W = \text{Cubic centimeters of infusion in total amount}$$

In these formulas, *C. U.* is the number of milligrams in one cat unit, and *W* is the patient's body weight in pounds.

1. Eggleston, Cary: Digitalis Dosage, *Arch. Int. Med.* **16**:1 (July) 1915.

2. White, S. M., and Morris, R. E.: The Eggleston Method of Administering Digitalis, *Arch. Int. Med.* **21**:740 (June) 1918.

3. Morris, R. E.: Clinical Pharmacology of Digitalis, *Minnesota Med. J.* **1**:125 (April) 1918.

4. Hatcher, R. A., and Brody, J. G.: The Biological Standardization of Drugs, *Am. J. Pharm.* **82**:360, 1910.

The following example illustrates the use of these formulas: A patient weighs 150 pounds, and the digitalis available has an activity of 100 mg. to the cat unit. Applying Formula I for the powdered leaf, we have $100 \times 0.15 = 15$; $15 \times 150 = 2,250$; $2,250 \div 1,000 = 2.25 =$ grams of leaf in total amount. Applying Formula II for the tincture, we have $100 \times 0.15 = 15$; $15 \times 150 = 2,250$; $2,250 \div 100 = 22.5 =$ cubic centimeters of tincture in the total amount. Formula III gives $100 \div 100 = 1$; $1 \times 150 = 150 =$ cubic centimeters of the infusion in the total amount.

ADMINISTRATION OF AVERAGE CALCULATED TOTAL AMOUNT

1. When the patient has received no digitalis within the preceding ten days.

A. *In urgent cases.*—From one third to one half of the total calculated amount is administered at the first dose. After an interval of six hours, from one fifth to one fourth of the total is administered. After a second six hours, from one eighth to one sixth of the total is administered. Thereafter, if more digitalis is needed, about one tenth of the total may be repeated every six hours until maximal digitalization is secured. In the case of the example given above with the total amount being 22.5 c.c. of tincture, the first dose would be from 7 to 11 c.c.; the second from 4 to 5 c.c.; the third from 2.5 to 3.5 c.c., and thereafter about 2 c.c. every six hours if required.

B. *Rapid, for nonurgent cases.*—About one fourth of the calculated total is to be given at each of the first two doses, six hours apart. Thereafter about one tenth to one eighth of the total is given every six hours.

2. When the patient has been taking digitalis within the preceding ten days.

Before further digitalis is prescribed, the patient is to be subjected to the most careful examination, including the use of polygraphic or electrocardiographic records if available, to determine whether or not there are any evidences of digitalis action.

A. *When evidences of digitalis action are absent.*—The procedure is the same as outlined above, except that the total amount of digitalis required is to be reduced to 75 per cent. of the total calculated. Thus, in the example used the total would be reduced to 17 c.c. instead of the calculated 22.5 c.c., and the fractions prescribed at each dose would be based on the former figure (17 c.c.). The usual one tenth of the total every six hours may then be prescribed if necessary.

B. *When evidences of partial digitalization are present.*—

It is best not to attempt to administer more than one half of the total calculated amount of digitalis, divided equally between the first three doses. In urgent cases in this group, however, one may administer 75 per cent. of the calculated amount, preferably in three equal doses, and then if digitalization is not quite complete, one tenth of the total amount may be prescribed every six hours.

SAFEGUARDS

The appearance of one or more of the following criteria of adequate digitalization, or of minor digitalis intoxication, indicates the cessation of further administration, either permanently or temporarily:

1. Nausea or vomiting (except when due to splanchnic congestion and present before treatment is begun).
2. Fall of heart rate (not pulse rate) to or below 60 a minute.
3. Appearance of frequent premature contractions; of definite heart block; of marked phasic arrhythmia, or of coupled rhythm.

The observance of a six-hour interval between doses allows time for complete absorption of the preceding dose and the development of its full action on the heart so that if the patient is examined just before the administration of each dose, dangerous intoxication can be absolutely prevented. In practice it is perfectly safe to give the first three doses without personally examining the patient before the second and third doses if the one nursing the patient is properly instructed to look for nausea, vomiting, or slowing of the pulse to 60 or less a minute before giving the succeeding dose, and to stop administration if any of these phenomena appear.

When a leaf, tincture, or infusion the cat unit of which is unknown is employed, 100 mg. may be taken as the cat unit; but not more than 75 per cent. of the calculated total amount should be given in the first three doses.

When the patient cannot be weighed, or when marked edema or general anasarca is present, the body weight (exclusive of edema fluid) must be estimated as closely as possible and the total amount of digitalis calculated as usual. Not more than 75 per cent. of the calculated amount should then be given in the first three doses.

COMMENT

The employment of this method of administering digitalis is without danger to the patient if the directions are followed in detail and if the safeguards are carefully observed. By its employment it is usually possible to produce maximal digitalis action in from twelve to eighteen hours, and marked therapeutic effects frequently appear within six hours after the initial dose. By its use it is possible to dispense with the intravenous or intramuscular administration of ouabain, amorphous strophanthin, or other digitalis body in the great majority of cases of heart failure.

412 West End Avenue.

TRANSFUSION OF "ANTIBACTERIAL BLOOD"; REPORT OF CASE *

GEORGE F. LITTLE, A.B., M.D., BROOKLYN

M. K., a girl, aged 11 years, whom I first saw, Nov. 3, 1918, in consultation with Dr. Paul E. Wesenberg, had been suddenly seized with epidemic influenza, October 28. In a few days there was evidence of pneumonia at both bases. November 3 there was well marked consolidation on the right side posteriorly. A similar condition soon showed on the left, and by the 7th the patient gave signs of massive consolidation of both lower lobes. The case seemed hopeless. Oxygen was used freely; the windows were kept wide open. Moderate doses of morphin, with large doses of atropin, were being tried out at one of the army camps, in cases of massive influenzal pneumonia. The patient was given $\frac{1}{24}$ grain of morphin sulphate and $\frac{1}{50}$ grain of atropin sulphate every four hours for a day, and every six hours the second day. Morphin was then discontinued and atropin reduced to $\frac{1}{100}$ grain at four hour intervals, replaced after a day or two by 4 minims of tincture of strophanthus. Three grains of caffein sodiobenzoate were administered midway between the doses of atropin and strophanthus. Three grains of camphor in oil, and 5 minims of a 1:1,000 solution of epinephrin were employed hypodermically, as conditions warranted. Eliminative measures were freely used.

After a few days of treatment, the lung consolidation lessened and the child slowly improved. At the end of two weeks, râles at both bases were the only finding. In the meantime, however, there were other complications: an acute laryngitis; a dry pleurisy of the upper right chest, and a suppurative glossitis. November 12, swellings were noted on the back, right thigh and both ankles. The right ankle was incised on this date by Dr. Wesenberg, and pus was found. A blood culture was ordered, and mixed influenza serobacterin was administered for several consecutive days without noticeable benefit. Dr. Horace Greeley reported the culture as showing a staphylococcus and a bacillus, the latter not identified. On account of the patient's extreme weakness, he doubted reaction to an autogenous vaccine, and suggested transfusion of blood from a donor whom the vaccine might cause to react.

An incision in the left popliteal space, November 15, revealed a quantity of pus. On the 17th, an abscess in the lumbar region was opened. A first injection of autogenous vaccine was given on this day. Two days later, incisions showing pus were made in the right side of the chest, left arm, left forearm and right hip. A considerable quantity of mucus in the stools gave evidence of an enteritis. November 20. Dr. Max Bender tested the blood of seven family

* Read in part before The Brooklyn Pediatric Society, Dec. 18, 1918

donors with that of the patient. In only one case was there no agglutination. On the following day Dr. George I. Miller made an attempt at transfusion. The donor had no visible veins at the bend of either elbow, and dissection brought to light veins of infantile size, capable of no flow of blood. Two days later the patient's left ear drum perforated.

Professional donors were tested and one found whose blood was available for the child. Three hundred c.c. were passed from vein to vein, November 23, by Dr. Miller and Dr. Benjamin E. Wolfort. Five-tenths c.c. of the patient's vaccine was then injected in each arm of the donor, with marked reaction.

At this stage of the case, the bronchopneumonia was of low grade, with some râles at the bases, apparently needing only increased resistance for clearance. The septicopyemia, however, was overwhelming, and the prognosis indicated a fatal outcome.

From the transfusion there was a slight general betterment. Both eyes, however, became infected. November 25, 400 c.c. of blood were transferred. The patient became cyanotic at the close of the operation, and in the following twenty-four hours the pulse was of poor quality, with a tendency to cardiac collapse. Possibly a little too much blood was passed. During the following week the temperature continued of septic type; the right ear drum perforated, and abscesses were reopened on the back and left arm.

December 3, 340 c.c. of blood were transfused, the donor having received 1 c.c. of vaccine in each arm four days previously. The child took the donation well, with apparent improvement in the general condition, but the temperature showed diurnal variation from 100 to 103 F. Incision, by Dr. Wesenberg, in the left popliteal space, December 5, brought pus in quantity. Drs. Miller and Wolfort again transfused, December 8, giving to the patient 390 c.c. of "antibacterial blood" from the donor, who had been "primed," as on the last occasion. There was difficulty in locating a receptive vein, the internal saphenous finally being utilized, after delicate dissection. Local anesthesia sufficed, as in previous transfers. Owing to prolonged procedures, apparently, the heart developed a condition requiring most active stimulation, and creating anxiety as to future interference. Cardiac weakness had been more or less a feature in the septic involvement. On the same date, the right ankle required incision.

Following this transfusion, the marked septic temperature curve disappeared, the râles at the bases cleared, and the patient took nourishment well and gained daily in flesh and strength. For months, however, while not in danger as to life, she was entirely disabled by continuance of local infections. Dr. Wesenberg incised at intervals—the right leg above the ankle, the right ankle again, the lower spinal region, the right side, the right ankle still again, and the left hip. January 2, and on several subsequent occasions, roentgenograms of the infected joints were taken by Drs. Eastman and Bayles. At the indication of the plates, Dr. Wesenberg, assisted by Drs. Edwin B. Wilson and Richard M. Mills, operated under general anesthesia, January 4. The right hip joint was opened; the head of the femur, displaced upward, was brought down, and the leg straightened and put in Buck's extension. The opening into the left knee joint permitted removal of dead bone. This leg was straightened and similarly extended.

Rib resection was called for, January 30, through development of an abscess of the lung. This apparently cleared up in a few weeks, but filled again and required reopening, February 28. Further operative measures became necessary, February 19, as roentgenograms revealed considerable destruction of the surgical neck and articular surface of the left femur. This hip had been opened and drained, February 3. The incision was enlarged by being carried transversely toward the rectum. Right hip drainage had ceased and the wound had closed: the presence of pus was apparent in the plates, indicating reincision. Lieut.-Col. Edwin H. Fiske, M. R. C., saw the patient in consultation, March 10. He did not advocate further operative interference. There was no additional development of localized infection. The

affected joints were slow in clearing up—the last to heal, the left knee, ceasing to drain in July. Limitation of motion was naturally expected, loss of function of the left hip being especially feared.

The outcome of the case, as shown in the present condition of the patient, is better than expected and reflects credit on the surgery. There is good motion in both hip joints. The right leg is shortened $1\frac{3}{4}$ inches; this is partly compensated for by a 1-inch shortening of the left leg; a thick shoe sole completes the balance. There is a right talipes equinus, probably capable of correction by tenotomy. A slight interference with the left knee flexion may be overcome.

COMMENT

The possible effect of several more transfusions on the local processes would have been of interest. It was not feasible, however, to go further.

"Antibacterial blood" seems worthy of trial in any severe general infection, other measures having failed of control.

CONCLUSIONS

Those in professional attendance certainly reached the conclusion that life was saved by the transfusions.

Possibly blood, without attempted action on it, might have accomplished the result. It is rational to conclude, however, that the patient's vaccine, injected into the donor, produced antibodies in his blood which were of specific value to the patient in overcoming her septicopyemia.

469 Clinton Avenue.

HITHERTO UNDESCRIBED SIGN IN DIAGNOSIS OF LETHARGIC ENCEPHALITIS

THOMAS F. REILLY, M.D., NEW YORK

While there is no great difficulty in arriving at a diagnosis in the cases of encephalitis presenting a history of double vision, ptosis and other cranial nerve phenomena, a not inconsiderable number of patients are encountered in hospital practice who are brought in unconscious or delirious, and from whom no such history is obtainable. In such instances the patient presents a picture closely simulating that of one in the third week of typhoid fever. There are no focal symptoms pointing to a local central lesion. The leukopenia, so frequently present, is also strongly suggestive of typhoid fever.

In children the picture is almost identical with tuberculous meningitis. I have noticed in the majority of cases of encephalitis a sign that is very startling when recognized. It consists of a rhythmic convulsive twitching of the muscles of the abdomen in the neighborhood of the eighth and ninth ribs. It often simulates the muscular movement of hiccup, except that it is onesided. In two cases it involved the trapezius. Even in the conscious patient, it is beyond voluntary control. It has been present in the mild as well as in the severe cases, although in two patients it was not elicited when I observed them.

The term "lethargic" is unfortunate, as many of the patients having encephalitis are never lethargic; on the contrary, they are frequently delirious and often have choreiform movements of the limbs.

In some cases there are almost no cerebral symptoms, not even the ordinary placidity; in others a curious fear and apprehension may be evident, and again the patient presents only the painful sensations of an ordinary neuritis confined to certain peripheral nerve tracts, the central origin of which is evident by reason of its rapid transference to other regions of the border.

Often in these doubtful cases the convulsive twitching mentioned above is the only symptom that may serve to suggest that the patient is suffering from encephalitis.

It may be too early to regard this symptom as of absolute diagnostic value; but it has been present so frequently in the cases that I have observed that I am certain that it is at least a strongly suggestive sign.

34 West Eighty-Eighth Street.

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SATURDAY, MARCH 13, 1920

INFLUENZA OF 1918 AND 1920

The epidemic of influenza in 1920 in this country reached its maximum, so far as the large cities of the country are concerned, in the week ending February 14. According to the Bureau of Census Reports, the number of combined deaths from influenza and pneumonia in that week was 7,059, while in the following week the number of deaths from these causes in the same cities had dropped to 5,088. These figures compare with the February weekly average in 1917 of 1,489. Although cases of typical influenza seem still to be appearing in various parts of the country, the peak of the epidemic has certainly been passed. As previously pointed out, the total mortality throughout the country has been much lower in 1920 than it was in 1918. Certain localities, however, have suffered quite severely, notably Kansas City, Minneapolis, Detroit, Milwaukee and St. Louis, all of which had a higher death rate from influenza and pneumonia than in 1918. Columbus, Ohio, and Indianapolis also suffered severely, although the actual excess rates did not reach quite as high a point as in 1918. Unofficial reports from small towns and villages show substantially the same conditions as observed in the larger cities. Most communities were less seriously affected than in 1918, but certain localities apparently without regard to geographic distribution were very seriously stricken.

The epidemic of respiratory disease of January, 1920, differed from the epidemic of 1918 in that the total number of persons affected was less, the proportion of acute rapidly fatal cases was smaller, and the period of the epidemic was somewhat shorter. Symmers,¹ in a study of the pathologic findings in a series of fatal cases of pulmonary disease of the recent recurrent epidemic in New York, noted certain clinical as well as pathologic differences between the types of the disease of the two epidemics:

The recurrent disease, while it incapacitated thousands, pursued a milder course, complicating pneumonias were relatively few, and the death rate, of course, did not approach the appalling figures of the previous eruption. On the other hand, the recurrent disease was characterized by a greater

variety of pulmonary lesions—among other things, by concomitant semipurulent pleural exudates, by multiple pleural and subpleural abscesses, by frequent and extensive purulent invasion of the interlobar and interlobular septums of the lungs, by the formation of solitary, oftener multiple, discrete or confluent abscesses of the parenchyma, and by an extraordinary range of pneumonic lesions.

This experience in New York was no doubt duplicated in many other localities, usually those in which the epidemic of 1918 was of like severity. In other communities the epidemic of 1920 presented a proportion of severe rapidly fatal cases approaching that of 1918. As was pointed out in these columns,² the case fatality in several large cities equaled that of the epidemic of 1918.

Apparently the differences between the original and the recurrent epidemic depended to a considerable extent on the relative susceptibility and exposure of the population of a community at a given time. The first wave of influenza in 1918 affected a large proportion of highly susceptible persons, and in these the course was particularly severe and fatal. The early fatal termination precluded the development of purulent complications, which require a somewhat longer time for development. The records in certain army camps showed that of those dying late in the epidemic, at a time when the proportion of purulent complications was larger, many had become ill early in the epidemic, but had survived their fellows only to succumb later to more slowly fatal complications. The effect of individual resistance on the type of pulmonary lesions has been noted by MacCallum³ in his studies on pneumonia following measles and on the pneumonias following influenza. Some communities suffered relatively little in 1918, and in some at least of these, in which there presumably remained a considerable number of highly susceptible persons, the influenza of 1920 produced many severe fulminant cases of the type seen early in the epidemic of 1918.

So far as now available, reports from different communities on the bacteriology of the 1920 epidemic show the same diversity of results as was the case in the 1918 epidemic. Symmers found *Streptococcus hemolyticus* in most of the lesions; *Staphylococcus aureus* was found occasionally in intrapulmonary abscesses. "In the pneumonic exudates themselves, the prevailing micro-organism was a streptococcus. In occasional instances, influenza bacilli and pneumococci were isolated in combination with one another or with streptococci." These findings resemble those of the later portion of the epidemic of 1918 in some army camps. On the other hand, Small and Stangl⁴ report from Chicago a higher proportion of Pfeiffer bacilli, in some of their groups from 75 to 100 per cent. In a group made up of cases of pneumonia chosen at

2. The 1920 Influenza, Current Comment, J. A. M. A. 74: 607 (Feb. 28) 1920.

3. MacCallum, W. G.: Pathology of the Pneumonia Following Influenza, J. A. M. A. 72: 720 (March 8) 1919.

4. Small, J. C., and Stangl, Fred: The Bacteriology of Epidemic Influenza, abstr. J. A. M. A. 74: 622 (Feb. 28) 1920.

1. Symmers, Douglas; Dinnerstein, Morris, and Frost, A. D.: Differences in Pathology of Pandemic and Recurrent Forms of So-Called Influenza, J. A. M. A. 74: 646 (March 6) 1920.

intervals throughout the 1920 epidemic, pneumococci occurred in 84 per cent., hemolytic streptococci in 18 per cent., and Pfeiffer bacilli in 75 per cent.

In 1918, a clear bacteriologic picture of the epidemic as a whole was difficult on account of the diverse findings in different localities. However, the clinical features of the primary disease, influenza, were the same wherever it occurred, varying only in degree of severity, and there is much evidence in favor of the view that influenza has a demonstrable pathology of its own, as described by LeCount,⁵ Goodpasture⁶ and others, the outstanding features of which are capillary necrosis and hemorrhage, with resultant edema, and that the succeeding pneumonias result from infection by such organisms, whether streptococcus, pneumococcus, Pfeiffer bacillus, or others, as happen to be resident in the respiratory tract of the patient, and are able to grow on the soil prepared by the preceding influenzal lesions.

It seems probable that when complete reports of the 1920 epidemic are available we shall find that, on the whole, the severity is much less than in the epidemic of 1918, but that here and there groups of cases in 1920 were fully as severe and presented the same fulminant characteristics as in 1918. It should also be borne in mind that in larger communities, especially, there will be included with the cases of the epidemic influenza that group of cases of respiratory disease which would normally occur during the winter season, including a varying proportion of lobar pneumonias, streptococcal pneumonias similar to those of 1917-1918, and a host of cases of colds and tonsillitis which in nonepidemic periods would be passed with less remark.

IS FAT INDISPENSABLE FOR WELL BEING?

In a recent issue of *THE JOURNAL*, Hindhede⁷ of Copenhagen discussed the effects of the food restrictions that were imposed on the Danish people as a result of the blockade existing during the latter years of the war. Despite the fact that Denmark was a noncombatant neutral nation, the interference with the international transfer of food, brought about by the food administrations of the allied governments and the shipping situation, prevented the importation of the usual quota of bread cereals and of the large amounts of cattle feeds that had been used before the war to maintain the stock of domestic animals used directly as food or kept to supply dairy products. Although the situation was somewhat similar in Germany, it would appear that the outcome of the shortage was far more serious in the latter country than in Denmark. The greater success attained in Denmark in maintaining the populace in health under unexpected changes in

food supply is attributed to what Hindhede commends as the wiser policy of a government "converted to the newer ideas on nutrition."

We shall not review at this time the various methods suggested by the nutrition experts of the affected countries for meeting the emergencies that arose. They have become the subject of somewhat acrimonious debate between the adherents of different schools of physiologic thought. Essentially, the plan of the Danes consisted in reserving the available cereals, notably rye, wheat and barley, as well as a large proportion of the potatoes grown in Denmark, for the people themselves instead of feeding them to the domestic animals, particularly cattle and hogs. As a consequence of this decision to use the vegetable products directly instead of first converting them into animal tissue for human consumption, so many of the hogs were killed that the number of swine in Denmark was soon reduced to one fifth of the prewar stock. Consequently the supply of meat was greatly reduced, and likewise that of fats, which are derived so largely from animal products.

This scheme involved the placing of the Danish nation on a preponderatingly vegetarian basis. Almost inevitably this necessitated a lowering of the protein content of the dietary. In addition to this, furthermore, there resulted a large deficit in the fat content of the ration. To prevent an unduly low protein intake, the cereals were milled only slightly, so as to retain a maximum of the outer nitrogenous layers, which are commonly removed in the preparation of barley, wheat and rye for human consumption. Wheat bran was actually added to flour to increase the protein content of the bread made from it. "Bran," Hindhede writes, "was considered to be a very valuable food, one which was well digested by man."⁸

In this respect the reports differ from the experience of American investigators. They have repeatedly found that the amount of protein digested varies in flours according to the character of the particles of the bran. In a recent series of experiments on man at Washington,⁹ the bran protein itself was digested to the extent of 44 per cent. in the case of fine bran only, whereas nearly three quarters of the protein of coarser wheat bran remained unutilized. Although it is safe to say, in harmony with recent observations of Langworthy and Deuel,¹⁰ that the finer a bran-containing flour is ground, the more completely it is utilized by the human body, yet American physiologists would probably hesitate to urge a very liberal inclusion of bran in the dietary as a source of protein. Indeed, bran has acquired a quite different significance of late among physicians.¹¹

8. Hindhede, M.: *Skand. Arch. f. Physiol.* **33**: 59, 1915.

9. Bull. 751, U. S. Dept. Agric., 1919. Bread and Bran, editorial J. A. M. A. **73**: 36 (July 5) 1919.

10. Langworthy, C. F., and Deuel, H. J.: *Proc. Nat. Acad. Sc.* **5**: 514, 1919.

11. Use and Abuse of Cathartics: Bran, *Therapeutics*, J. A. M. A. **73**: 1768 (Dec. 6) 1919.

5. LeCount, E. R.: Disseminated Necrosis of the Pulmonary Capillaries in Influenzal Pneumonia, *J. A. M. A.* **72**: 1519 (May 24) 1919.

6. Goodpasture, E. W.: *Am. J. M. Sc.* **158**: 863 (Dec.) 1919.

7. Hindhede, M.: The Effect of Food Restriction During War on Mortality in Copenhagen, *J. A. M. A.* **74**: 381 (Feb. 7) 1920.

Another outcome of the Danish regimen will seem far more significant to most readers. "While fat was regarded as a very valuable addition to the dietary, it was not considered as being necessary."⁷ This thesis, which has been defended by Hindhede for several years,¹² is likely to meet opposition from many, particularly those who have attributed some of the types of malnutrition consequent on "war diets" to lack of fat in the ration. Nevertheless, Hindhede¹² has furnished the records of a number of persons who have actually been maintained for many months in good health and vigor on diets of bread, potatoes, vegetables and fruits without any added fat whatever. It might seem as if we were face to face with an inexplicable contradiction here, especially since it is now believed that a fat-soluble vitamin plays an important part in nutrition, at least in the periods when growth or tissue production are concerned. Recent developments in the study of the physiologic value of different foods may give a clue to a possible explanation. So long as the fat-soluble vitamin (fat-soluble A) was supposed to be present only in natural fats and oils, it seemed inevitable that some modicum of suitable fat should be furnished in the diet. However, the studies of McCollum¹³ and particularly the more recent investigations of Osborne and Mendel,¹⁴ and of Steenbock¹⁵ and his co-workers, have clearly demonstrated that the vitamin under discussion is present in considerable abundance in many vegetables. Herein may lie the answer to the possibility of successful nutrition on diets poor in fats. The Danish ration is said to have abounded in vegetables. Doubtless in other places during the war the lack of fat-soluble vitamin was averted during stringency in the fat supply when milk, butter, eggs, and other animal sources of this food factor were lacking, by the inclusion of vegetables, notably cabbage and similar products, in the ration. Whether fat as such, apart from the other substances which it may include in solution, is an indispensable in nutrition is still an unanswered question. Hindhede's investigations have brought it into new prominence.

QUININ: 1820-1920

In the Paris *Journal de Pharmacie* of May, 1820—a hundred years ago—Joseph Pelletier, professor at the Ecole de pharmacie, who two years earlier had discovered strychnin, stated in a letter to one of the editors:

I take occasion to announce in your journal, in the name of MM. Labillardiere, Caventou and myself, the discovery of a base ["une substance alcaline"] in gray cinchona. This is perhaps the substance which Gomès first found and named cinchonin, or the pure resin obtained by Laubert; but these chemists did not recognize the true character of the sub-

stance for which the basic nature remained to be discovered and most of the properties to be investigated. The yellow cinchona likewise contains a substance capable of combining with acids and forming crystalline compounds; but this substance differs from cinchonin (the base of gray cinchona) in several features.

Soon after the successful chemical isolation of the two distinct alkaloids, quinin and cinchonin, in the different kinds of cinchona bark which had up to the beginning of the nineteenth century been used in its crude powdered state, although many efforts were made to discover the medicinal principles therein, Pelletier established a factory for the production of quinin. From there the demand of the world for the isolated drug was thus supplied until, in 1826, J. D. Riedel began the preparation of quinin in Berlin. This venture was not very successful, owing to the failure of the producer to recognize the variability of alkaloid in the cinchona bark. Later Zimmer of Frankfort engaged more successfully in competition with the French trade.

The cinchona alkaloids, of which twenty or more have been described, have been termed "a South American gift to humanity."¹ It is related that in 1640 the Count of Chinchon, who was at the time viceroy of Peru, returned to Spain with his wife, who took with her a quantity of the medicinal cinchona bark and thus was the first person to introduce it as a specific into Europe. Until 1867, English manufacturers were entirely dependent on South American sources for their supply. Uncultivated trees in Bolivia, Peru and Ecuador furnished the bark. In that year the first importations of cultivated bark arrived from India.

The year 1920 marks the centenary of the first isolation of the most valuable alkaloid of the cinchona bark. Its therapeutic virtues need not be extolled to medical readers. In 1826, Pelletier and Levaillant together produced about 177 kilograms (390 pounds) of salts of quinin.² During the year ending in June, 1914, the United States alone imported cinchona bark to the amount of 3,648,868 ounces, valued at \$464,412, and quinin sulphate and other alkaloids or salts of cinchona bark to the amount of 2,879,466 ounces, valued at \$624,125.¹ If medicine were to think of quinin in relation to malaria alone, not to mention the value of the drug in the management of other diseases, she would well be justified in pausing to give worthy recognition to the French pioneers in pharmaceutical chemistry who first gave her this useful therapeutic product in isolated form a hundred years ago.

1. Bulletin of the Pan American Union, Washington, D. C. 42: 61 (Jan.-June) 1916.

2. The statistics are from Schelenz, H.: Geschichte der Pharmazie, Berlin, 1904, p. 623.

12. Hindhede, M.: Fettminimum, Skand. Arch. f. Physiol. 39: 78, 1919.

13. McCollum, E. V.: The Newer Knowledge of Nutrition, New York, 1919.

14. Osborne, T. B., and Mendel, L. B.: J. Biol. Chem. 37: 187 (Jan.) 1919.

15. Steenbock, H., and Gross, E. G.: J. Biol. Chem. 40: 501 (Dec.) 1919; 41: 149 (Feb.) 1920.

Hazardous Occupations.—The physical reexamination of workers in hazardous occupations will result in the accumulation of scientific facts of known value with which to replace the oftentimes erroneous opinions now held regarding the dangers and hazards of certain occupations.—F. L. Rector: *Public Health Rep.*, Jan. 9, 1920.

Current Comment

PUBLIC HEALTH ORGANIZATION AND THE MEDICAL PROFESSION

It will probably still be a long time before the desirability of protecting the public health will make the same appeal to the legislators controlling public funds as does the necessity of protecting property. Nevertheless the tendencies of the times are making it almost impossible for even the most unprogressive community to fail to take notice of the growing demands for greater and better service in the interest of public health. The health officer of a decade ago, and the board of health to which he was responsible, are undeniably experiencing an evolution into something more active, more efficient and more important than they were in the past. In the coming years our communities will no longer be satisfied with merely the control of epidemics and the proper disposal of garbage and other wastes as the work of their health experts. Professor Winslow¹ of Yale, in an illuminating vice presidential address before the American Association for the Advancement of Science at St. Louis, forecast the future of the movement for greater accomplishment in the domain of public health by thus defining its scope:

Public health is the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts for the sanitation of the environment, the control of community infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service for the early diagnosis and preventive treatment of disease, and the development of the social machinery which will insure to every individual in the community a standard of living adequate for the maintenance of health.

This represents no mean program. It calls for a corps of experts rather than a single officer, who has in too many instances in the past been as untrained as he has been underpaid. With the physician, the earliest health officer to be recognized in the development of the public health field, the bacteriologist was the first to become affiliated for greater usefulness. Subsequently came the epidemiologist, trained "to trace out the subtle pathways of infection by which they spread from one person to another through the complex web of community life." The public health nurse, who has already more than justified her special province, is likewise here to stay; and Winslow will not permit us to be content until the sanitary engineer, the statistician and the social worker are included in the coterie of highly qualified persons who must cooperate to make of the movement for public health, as defined, something as influential and wholesome as are the conservation and development of mental efficiency in the educational organizations of the country. He would be blind, indeed, to the forces of progress who would deny that these things may come about. The public health campaign is going forward rapidly. It will be interesting to observe how its outcome affects the medical profession in the com-

ing years. We must not be blind to the fact that the ordinary physician alone cannot and will not be expected to carry forward the new projects in their entirety. The public health physician must already be specially trained for his duties if he is to rise above the level of mediocrity in the work. Sanitary experts and others without special training in clinical medicine must find a place in the new scheme of organization. Who can foretell how the plans and performances of the "sanitary statesmen" of the coming generation will modify the practice of medicine?

GAS CYSTS OF THE INTESTINE

The difficulties of abdominal diagnosis are already so great that it seems almost criminal to call attention to any new conditions that must be taken into account in reaching a conclusion as to the nature of a given case of disease in the abdomen. Since 1876, when Bang of Copenhagen described the first case in the human being, the literature has contained an increasing number of references to a peculiar abdominal condition characterized by the formation of multiple gas-containing cysts in connection with the peritoneum and the walls of the stomach and the intestine. Tuffier and Letulle¹ have recently described two new cases and discussed both the clinical manifestations and the pathologic anatomy of this strange malady. There is nothing characteristic about the symptomatology of the disease. Many of the patients have no symptoms whatever, and the presence or absence of symptoms depends on the location of the process and its mechanical effect on the stomach and intestine. Those patients who have symptoms complain of digestive disturbances, such as diarrhea and vomiting, and finally present the picture either of intestinal obstruction or of an abdominal neoplasm. Such cases usually fall into the hands of the surgeon who, on opening the abdomen, finds large numbers of gas-containing cysts connected with the peritoneum or digestive canal which may be of sufficient size to cause intestinal obstruction or to produce a palpable tumor. A few cases in which a second operation has been necessary have demonstrated the strange fact that the mere opening of the peritoneal cavity and handling of its contents results in the disappearance of the cysts. This at least is one explanation of such observations, although another possibility is that the disease naturally tends to recovery after a certain length of time. The studies of Letulle² on the pathology of the condition show that the primary lesion is an inflammation which involves the peritoneal lymphatics, causing obstruction in some places and dilatation in others. The mysterious aspect of the process is the origin of the gas with which the cysts are filled. This gas consists of various combinations of carbon, oxygen and hydrogen. It is quite odorless, and obviously is not of intestinal origin. Nobody has yet been able to bring forward any reasonable explanation of its presence, although no very

1. Tuffier and Letulle: Sur une maladie caractérisée par des kystes gazeux de l'abdomen, *Bull. de l'Acad. de méd.* **82**:5 (July 1) 1919; abstr. *J. A. M. A.* **73**:795 (Sept. 6) 1919.

2. Letulle, Maurice: Les kystes gazeux de l'intestin et du péritoine, *Presse méd.* **27**:781 (Dec. 20) 1919; abstr. *J. A. M. A.* **74**:494 (Feb. 14) 1920.

1. Winslow, C.-E. A.: The Untilled Fields of Public Health, *Science* **51**:23 (Jan. 9) 1920.

Careful bacteriologic studies seem to have been made. Tuffier and Letulle do not seem to consider the condition analogous to the gas cysts of rapid formation which are sometimes found in the intestinal wall in connection with the gas bacillus. It would seem, however, that the bacteriologic side of the disease should be carefully investigated, as bacterial action seems to be the most likely explanation of the formation of the gas.

THE REACTION OF THE SWEAT

Although it has been taught that the skin is an organ of excretion in cooperation with the lungs and kidneys, there seems to be little evidence to substantiate the importance of the cutaneous tissue in this function. There is no uncertainty, of course, regarding the liberal output of water that may occur by way of the skin through the agency of the sweat-glands; but this loss of water is mainly determined by the need for regulating the temperature of the body. Variations in external temperature or the work done and heat produced by the body, rather than the quantity of the fluid intake, determine the extent to which perspiration takes place. There is a small quantity of nitrogenous waste present in the sweat. Its quantity is, however, too small to play any significant part in the excretory functions. The same conclusion applies to the small content of saline constituents which have been discovered in the secretion from the skin. In speaking of the popular overestimation of the share of the skin in the removal of waste, Stiles¹ has naively remarked that the belief that "the pores must be kept open" lest poison gather in the system has been so fruitful of wholesome practices that one is reluctant to question it. Nevertheless, it is perhaps too soon to dismiss entirely the possibility that the skin may play some part, even if only a minor one, in the regulatory functions other than that of heat regulation. Our knowledge of the composition of the sweat is still all too meager, particularly so far as it may be varied by changes in the condition or activities of the organism. For example, the statements as to the reaction of sweat have been conflicting. Obviously if the skin, like the kidneys, is to be considered as engaged in removing the undesirable waste from the body, one would expect an acid excretion since a preponderant number of the end-products of metabolism are acid in character. Recent experiments on man by Talbert² leave no doubt as to the acid reaction of sweat. It matters not whether the secretion is caused by work or by heat; in health it is acid, and the degree of acidity is greater than has been assumed. This reaction, which is represented by a hydrogen-ion concentration of $p_H =$ from 5 to 6, is not due to products from the sebaceous glands which have, in the past, sometimes been charged with causing the result; but why, as Talbert found, the sweat caused by external heat is always more acid than that provoked by muscular effort remains a physiologic mystery.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Personal.—Dr. George E. Goodrich, Phoenix, has been appointed state superintendent of health.

Plans for Sanatorium.—A number of physicians of Casa Grande are planning to carry out a tuberculosis sanatorium project. The site for the enterprise is half a section of land northeast of Casa Grande on a mesa. On this site it is proposed to build 100 houses each to cost about \$3,000 furnished and to be rented to families and individuals at \$50 a month. This will include the service of a resident physician. There will also be constructed a hospital, an electric light plant, an office building and an experimental laboratory.

CALIFORNIA

Chiropractic Measure on Ballot.—With 55,094 signatures (47,744 of which are of residents of Los Angeles) the chiropractic initiative measure has qualified for a place on the ballot at the next general election in California. The measure contemplates creating a chiropractic board and providing for the licensing of all chiropractors now in practice.

Chiropractors Arraigned.—Linden L. D. McCash, chiropractor of Berkeley, has been arrested on a charge of practicing without a state medical certificate.—It is reported that E. Burnard Hubley, a chiropractor of Los Angeles, was found guilty of practicing without a state license, February 5. He was arrested about a year ago on a similar charge and found not guilty.

CONNECTICUT

Tuberculosis Clinic.—The board of health of New Haven, February 24, voted to establish a tuberculosis clinic at Grace Hospital, New Haven, as soon as arrangements could be made with the hospital authorities, and the board of finance sanctioned the expenditure, which is estimated at about \$3,000.

New Officers.—At the annual meeting of the New Britain Medical Society, Dr. Walter J. Robbins was elected president; Dr. Frederick J. Mann, vice president, and Dr. George W. Dunn, secretary-treasurer.—New Haven County Medical Society at its annual meeting held, January 21, was given a bust of Dr. Jonathan Knight by Dr. Louis M. Gompertz and Donald W. Carmichael. The following officers were elected: president, Dr. Robert E. Peck; vice president, Dr. Raynham Townshend; recording secretary, Dr. Frank L. Phillips; corresponding secretary, Dr. Samuel J. Goldberg, and treasurer, Dr. Frank H. Wheeler.

Personal.—Dr. George Blumer, New Haven, for thirteen years in service as professor of medicine at Yale University Medical School, has requested to be relieved from duty at the close of the academic year. His resignation has been accepted. Dr. Blumer was chosen dean of the school in 1910, and during his deanship the annual budget has increased from \$43,000 to \$225,000 and the endowment from \$225,000 to \$2,700,000. Dr. Blumer desires to be relieved of the burden of administrative duties in order to devote time to his consultation practice.—Dr. Clarence E. Skinner, New Haven, has been made medical director of the Postal Life Insurance Company, New York City.—Dr. Edward H. Kirshbaum, Waterbury, has been appointed medical examiner (coroner) for the town of Walcott, succeeding Dr. Edward W. Goodenough, resigned.

GEORGIA

Sanatorium Taken Over by Government.—The formal transfer of the Cheston King Sanatorium, Peachtree Road, Atlanta, has taken place and the hospital is now known as the U. S. P. H. S. Hospital No. 48.—Lenwood Hotel, Augusta, has been leased to the United States government for use by the Public Health Service in the care of disabled soldiers.

ILLINOIS

Physicians Will Not Prescribe Liquor.—The members of Will County Medical Society at the meeting, March 3, agreed not to prescribe liquor in their practice.

1. Stiles, P. G.: Nutritional Physiology, Philadelphia, W. B. Saunders Company, 1912, p. 168.

2. Talbert, G. A.: The Effect of Work and Heat on the Hydrogen Ion Concentration of the Sweat, Am. J. Physiol. 50:433 (Dec. 1) 1919.

New Government Hospitals.—The Livingston Hotel and the laboratories of the Leslie E. Keeley Company, Dwight, have been leased to the U. S. Public Health Service and will be converted into a hospital with accommodation for about 200 patients.

Venereal Disease Statistics.—Among the 11,915 cases of venereal disease reported to the Illinois State Department of Public Health during the year ended June 30, 1919, 656, or about 5.5 per cent. of those affected, were employed in the handling of foodstuffs. Of the total number, 7,756 were males and 4,159 females.

Personal.—Dr. Edwin B. Godfrey, Springfield, sailed from New York, February 26, for the Balkan States for service as major in the Medical Corps of the American Red Cross. —Dr. Letitia A. Westgate, Aurora, formerly city chemist and bacteriologist of Aurora, is reported to have sued the city for \$30,000 damages.

Chiropractor Fined.—Joseph Langley, La Harpe, is reported to have been arrested recently for practicing medicine without a license and was fined \$100 and costs. Langley's advertisement to sell "a six months' practice, yielding over \$200 monthly," was called to the attention of the Department of Registration and Education and led to his arrest. Langley, it is said, had paid \$100 for membership in the Illinois Association of Chiropractors and had been assured that such membership would protect him in his practice. After his office had been closed and his signs had been taken down by order of the court, Langley said he was going back to Burlington, Iowa, "where it was not necessary to have a license to practice chiropractics."

Chicago

Chicago Woman Appointed Chief Nurse.—Miss Helen Scott Hay, formerly superintendent of the Illinois Training School for Nurses and chief nurse of the Red Cross commission to the Balkans, has been appointed chief nurse to the American Red Cross Commission in Europe.

Haggard in Chicago.—Dr. William D. Haggard, Nashville, Tenn., presented a paper before the Chicago Medical Society at its meeting, March 10, on "The Consideration of the Toxic Iodine-Exophthalmic Goiter," illustrated by lantern slides. An informal dinner in honor of Dr. Haggard was given at the University Club, preceding the meeting of the society.

Pathologists Meet.—At the meeting of the Chicago Pathological Society and section on pathology of the Chicago Medical Society held, March 8, the subjects of discussion were: ectopic pregnancy, hydronephrosis and lymphatic tumors. A new anaerobic technic was demonstrated and an improved method of cultivating gonococci under partial oxygen-tension was described.

Personal.—Dr. Saul A. Koppnagle, national organizer and secretary of the Chicago chapter of the Communists Party, surrendered, March 3, and gave bonds of \$10,000 in answer to the charge of conspiracy to overthrow the government. —Dr. John H. Curtis has been selected as superintendent of the New Britain (Conn.) Department of Health, succeeding Dr. William M. Stockwell, resigned.

Prescription Doctor Arrested.—R. M. Carroll, charged with having issued promiscuously prescriptions for whisky, was arraigned, March 4, and held in bonds of \$2,000. It is claimed that this man issued at least 200 prescriptions a day and claimed that he charged "anywhere from \$1 to \$7 for the prescription, depending on the condition of the patient's cough." —Dr. Joseph A. Khamis, held on the charge of violation of the liquor law, protested that he had not written prescriptions without thoroughly examining the patient, and said that he had been robbed of a number of signed prescription blanks by men posing as revenue officers.

KENTUCKY

All-Time Public Health Service.—Davies, Christian, Scott, Boyd and Harlan counties have taken advantage of the offer of the state board of health to appropriate \$5,000 annually to establish an all-time public health service provided a like amount is subscribed by the county.

Board of Health Appointments.—The following have been appointed members of the state board of health: Dr. Isaac A. Shirley, Winchester, 1918-1923; Dr. William W. Richmond, Clinton, 1918-1923; Dr. Joseph E. Wells, Cynthiana, 1919-1921; Dr. John G. South, Frankfort, 1920-1925, and Dr. George S. Coon, Louisville, 1920-1925.

MARYLAND

Negro Staff for Colored Schools Appointed.—Dr. C. Hampson Jones, Baltimore, commissioner of health, has announced the selection of a staff of negro physicians and nurses for medical inspection of negro schools.

Coroners Appointed.—The following coroners for Baltimore city have been appointed by Governor Ritchie: Drs. James M. Fenton, Henry L. Sinskey, John J. Morrissey, Jr., Harry K. Gorsuch, William T. Riley, Otto M. Reinhardt, James K. Insley, Jay T. Hennessy and George C. Blades.

New Hospital Opened.—The Morrow Hospital, Baltimore, opened February 18. The institution is for the advancement of social hygiene and the treatment of venereal disease, and is under the charge of the United States Public Health Service, the State Board of Health, and the Health Department of Baltimore.

Johns Hopkins to Get Appropriation.—The general education board of the Rockefeller Foundation has announced from its New York office that an appropriation of \$400,000 is to be made to Johns Hopkins University. The money will be devoted to the women's clinic, which will be built in the spring. This amount was promised by the board last year if the university could raise \$600,000, which has been donated. Plans for the erection of the building are in process of preparation.

Increased Hospital Accommodation under Consideration.—Because of the urgent need for additional hospital facilities in Baltimore, the advisability of taking over some twenty-three semifireproof buildings on the south side of the Fort McHenry reservation, now a part of U. S. Army General Hospital No. 2, which could be altered at comparatively small expense, perhaps \$100,000, and be made to fulfil the city's needs for some years to come, has been taken under consideration by the commission appointed by the mayor to study hospital conditions. It is thought that these buildings can be obtained from the government for a nominal sum and within a very short time.

Fort McHenry Hospital to Remain.—Because of the many rumors concerning the abandonment by the Army Medical Service of U. S. Army General Hospital No. 2, Fort McHenry, Col. Henry Page, the commanding officer, has recently made the announcement that there is hardly a possibility of the closing of the hospital, at least until Congress provides the soldiers at Camp Holabird with a post hospital. Discharges at the rate of about 600 a month for the last few months have reduced the number now under care in the hospital to about 1,200. Hardly more than half of these are from overseas; the remainder are patients from Camp Holabird, from the Fort McHenry detachment, and casualties from various outfits.

Personal.—Plans are being made by physicians and surgeons of Baltimore for the celebration of the seventieth birthday of Dr. William H. Welch, one of the notable group of men who have made the Johns Hopkins Medical School known throughout the world. The writings of Dr. Welch will be collected and published in three volumes, the edition being limited to the subscribers. —Dr. Lewis J. Rosenthal, Baltimore, has been appointed inspector of throats for the Baltimore City Health Department to succeed Dr. J. B. Culberson. —Dr. Benjamin M. Jaffe has been appointed health warden for the fifth ward of Baltimore. —Col. Clarence J. Manly, Medical Corps, has been ordered to U. S. Army General Hospital No. 2, Fort McHenry, to command the post in place of Col. Henry Page, who has been directed to take up his duties as commandant of U. S. Army General Hospital No. 21, Denver. —Dr. Clarence R. Dufour has been reappointed chairman of the public health committee of the Baltimore chamber of commerce.

NEBRASKA

Roentgenologists to Meet.—The Omaha Roentgen-Ray Society will hold a meeting in Omaha, March 20.

Personal.—Dr. Allan B. Anderson, Pawnee City, has retired from active practice. —The office of Dr. Frank Tornholm, Wahoo, was destroyed by fire, January 4.

NEW JERSEY

Personal.—Capt. Oscar G. Frundt, M. C., U. S. Army, Jersey City, has been awarded the Distinguished Service Cross for extraordinary heroism in action while commanding a

hospital train in Eastern Siberia, in June, 1919. The award was made on account of Captain Frundt's care and treatment of the wounded and handling of the hospital train while under fire.

Illegal Practitioners Fined.—During December, 1919, six illegal practitioners, including one physician and two osteopaths, are reported to have been arrested and fined \$200 each for practicing medicine in New Jersey without a license. They are Vincenzo D'Amico, Elizabeth; Gustave H. Heckman, osteopath, Mt. Holly; Morris Katz, Newark; Gerald Richardson, osteopath, Jersey City; A. Sassaman, New Brunswick, and Chester I. Ulmer, M.D., Gibbstown.

NEW YORK

Women to Meet.—The fourteenth annual meeting of the Women's Medical Society of New York State will be held at Hotel McAlpin, New York City, March 22, under the presidency of Dr. Elizabeth B. Thelberg, Poughkeepsie. Dr. Winifred Cullis of London, England, will be one of the speakers.

Bill to Help Brooklyn Hospital.—Governor Smith has signed the bill appropriating \$500,000 for the Creedmoor division of the Brooklyn State Hospital. This is the same item vetoed by the governor last year. He states that the plans of the hospital development commission are matured so that it is safe now to proceed with the Creedmoor construction.

Prize Offered for Poster.—The bureau of venereal disease of the New York State Department of Health offers a prize of \$100 to the person who best interprets the expression "Healthy Parents Head Happy Families," in a colored drawing that can be reproduced as a poster in public health work. Drawings must not be smaller than 12 by 18 inches. The winner will be chosen from among those whose drawings are received at the New York State Department of Health, Albany, before May 1, 1920.

Commission Recommended to Study Health Insurance.—The National Civic Federation, which has made a study of social insurance, has recommended to the state legislature the appointment of a state commission to study the relation between sickness and society. The cause and extent of sickness, prevention, treatment, and replacement of the wage loss are suggested as proper subjects for investigation. The federation's committee is opposed to compulsory health insurance in the forms in which it has been presented.

Senate Committee Discusses Nurses' Titles.—The Mullen bill which seeks legal classification of nurses was advanced to a hearing recently at which considerable opposition to the bill was voiced by physicians. Howard Townsend, representing the Hospital Conference of New York City, with a membership of about fifty hospitals, spoke in opposition to the measure. He suggested the creation of a council of advice to consist of three nurses and the same number of physicians and hospital representatives, which should be empowered to advise the state board of regents in matters affecting hospitals and the education of nurses, as a means of securing proper classification. The bill it is claimed would prevent the free use of trained attendants in the care of the sick, and this it is pointed out would be unfortunate in view of the shortage of registered nurses.

New York City

Personal.—Dr. Chester Ford Duryea has been appointed associate director of the New York Radium Institute.

Immunization Against Diphtheria in Schools.—Arrangements have been made for the administration of the Schick test and the active immunization against diphtheria of susceptible children in 100 public schools of the city.

Reminder of Necessity to Report Communicable Disease.—By order of the health commissioner, perpetual calendars, on which are printed reminders of the necessity of reporting communicable and occupational diseases, have recently been mailed to all the physicians in the city.

Functional Reeducation Work.—The first annual report of the clinic for Functional Reeducation of Disabled Soldiers, Sailors and Civilians shows that of the 1,150 patients treated the first year, about one-half were disabled working men, and the remainder disabled soldiers and sailors.

Clinic for Drug Addicts Closes.—The health department announces the closure of the clinic for the treatment of drug addicts which it has maintained at 145 Worth Street. The attendance at the clinic has fallen to fewer than 100 patients, and these will be transferred to the Riverside Hospital.

Course in Industrial Nursing Service.—The New York University School of Commerce, Accounts and Finance started February 2, a course in standardization of nursing service in industry. The course is arranged for industrial workers, welfare workers and those contemplating entering the field of industrial welfare work.

Distribution of Hospital Fund.—The United Hospital Fund, because of the shortage of funds of many of the institutions, will make a preliminary distribution of approximately \$400,000 at once. This represents about double the amount the forty-six institutions received from the fund last year. According to present plans the remainder of the fund will be disbursed about May 1.

Brooklyn Hospital Seeks Endowment Fund.—The Methodist Episcopal Hospital of Brooklyn, in its annual report, seeks an addition of \$500,000 to its endowment fund. During the past year the hospital staff has treated in all 12,072 persons. One gift during the year was a \$50,000 Liberty bond, the income from which is to be used to meet the expenses of free treatment for the poor.

Annual Report of Mount Sinai Hospital.—The report of the board of trustees of Mount Sinai Hospital, presented at the recent annual meeting, outlined the progress being made on the new buildings being erected on property adjoining the hospital. These buildings will cost \$3,250,000 instead of \$2,000,000, the amount estimated before the war. Emphasis was laid on the preparations being made for a study of the best methods of disease prevention.

Postgraduate Medical School Seeks Fund.—The board of directors of the New York Post-Graduate Medical School and Hospital have begun a drive to raise an endowment fund of \$2,000,000. The institution has purchased the property on the southwest corner of Twentieth Street and Second Avenue, which is the first step toward the enlargement of the facilities of the school, which is no longer adequate for the demands made on it. The enrolment this year is 1,692, double the attendance of last year.

NORTH CAROLINA

Chiefs of Staff Elected.—The following chiefs of staff of the Memorial City Hospital, Winston-Salem, have been appointed: chief of the medical staff, Dr. Sylvester D. Craig, Winston-Salem; chief of the surgical staff, Dr. Everett A. Lockett, Winston-Salem, and chief of the gynecologic and obstetric staff, Dr. Henry S. Lott, Winston-Salem.

Personal.—Dr. Andrew J. Crowell, Charlotte, has been appointed a member of the state board of health, succeeding Dr. Edward C. Register, deceased.—Dr. Joseph Howell Way, Waynesville, is convalescent after an attack of acute lobar pneumonia.—Dr. Andrew J. Warren, Raleigh, has been made head of the state health department of Charlotte, succeeding Dr. C. Curtis Hudson, Charlotte.

Semicentennial of Academy.—The Raleigh Academy of Medicine celebrated its fiftieth anniversary by a dinner at the Yarboro Hotel, February 2, in honor of Drs. Wisconsin I. Royster, Richard H. Lewis and Augustus W. Knox. The after dinner program included: "Greetings from the State Society," by Dr. Carl V. Reynolds, Asheville; "A Historical Sketch of the Academy," by Dr. Hubert A. Royster, Raleigh; "Every Physician a Philanthropist," by Dr. Cyrus Thompson, Jacksonville; "Personal Reminiscences of the Founders," by Dr. Wisconsin I. Royster; "Medicine and the State," by Dr. Richard H. Lewis, and "Our Present and Our Future," by Dr. Augustus W. Knox. Tributes were also paid to Drs. G. G. Thomas, Wilmington, Lewis B. McBrayer, Sanatorium, and Charles O'H. Laughinghouse, Greenville, honored fellows of the academy.

PENNSYLVANIA

Influenza Cases.—More than 50,000 cases of influenza were reported to the state department of health between January 26 and February 28. In the epidemic of 1918 and 1919 a million cases of influenza were reported. The figures for this year's outbreak in the state were: influenza, 50,176; pneumonia, 3,271, and deaths from influenza and pneumonia, 3,068.

Baby Clinic for Ardmore.—A baby clinic was opened in Ardmore, February 10, under the financial auspices of Main Line Branch No. 1, Southeastern Pennsylvania Chapter of the American Red Cross. It is conducted in cooperation with a committee of physicians and visiting nurses. Clinics are conducted from 2 to 3 p. m., Tuesdays and Fridays, in

the Ardmore Red Cross headquarters. Later it is hoped to develop a similar clinic in Bryn Mawr.

Safety Congress.—The Pennsylvania Safety Congress for 1920 will be held in Harrisburg, March 21 to 25, inclusive, under the auspices of the Department of Labor and Industry of the Commonwealth of Pennsylvania. The congress is a continuation of the welfare and efficiency congresses held in the past, which were discontinued during the war. The topics to be discussed are those which are faced in industrial life today and will include the relation of industry to religion; the cost of industrial accidents; the cooperation of the employer and employee in safety; the future of industry; the public utility and its hazards; Americanism; women in industry; organized labor and the safety movement; the rehabilitation of the industrial crippled; health education and industry, and occupational diseases.

Philadelphia

Influenza Epidemic Over.—With comparatively few cases of influenza and pneumonia reported, the health department has removed the restrictions which were put into effect several weeks ago as measures of precaution against the spread of the disease.

Two Thousand Vaccinated.—Because of the discovery of a case of smallpox, March 2, 2,000 persons were vaccinated in West Philadelphia, March 3. Thirty-six Hog Island workers were vaccinated, March 2. The patient was an employee on a ship at Hog Island.

Measles Hospital Needed.—There have been 4,000 cases of measles since January 1, and the health officials say there is no sign of abatement. There have been at least 12,000 additional cases not reported. The department of health is considering the utilization, exclusively for measles cases, of one of the buildings of the Philadelphia Hospital for contagious diseases.

Osler Memorial Meeting.—At the stated meeting of the College of Physicians of Philadelphia, March 3, Dr. Thomas McCrae read a memoir of the late Sir William Osler; Dr. Hobart A. Hare read a paper on "Sir William Osler as Teacher and Clinician"; Dr. Charles W. Burr, one on "Sir William Osler as a Man of Letters"; Francis R. Packard one on "Sir William Osler, and the Library of the College of Physicians of Philadelphia," and Dr. George W. Norris, one on "Sir William Osler as Host to the Americans in England During the Great War."

Personal.—Dr. Charles L. Furbush, director of the department of health, who has been seriously ill with influenza, has gone to Atlantic City to recuperate.—Dr. George Victor Janvier has been appointed assistant obstetrician to the Philadelphia General Hospital.—Dr. Elmer J. Presper has been appointed medical director of the Civil Service Commission to succeed Dr. William A. Swalm, who resigned.—Dr. Neva R. Deardorff, for nearly two years assistant to the director-general of the Department of Civilian Relief of the Red Cross, has been appointed assistant to the general manager at the national headquarters.—Dr. Charles C. Hart has been elected surgeon of the Pennsylvania Commandery, Military Order of Foreign Wars, of the United States.

Woman's Medical College Campaign Fund Closed.—The extension fund campaign of the Woman's Medical College of Pennsylvania, Philadelphia, for quarter of a million dollars came to a successful close, March 11, when a joint celebration was held to mark the end of the drive and the seventieth anniversary of the founding of the college. Founder's day exercises were held in the afternoon and a final campaign dinner in the evening. The establishment of the department of preventive medicine which was one of the objectives of the campaign has been assured by the recent action of the National American Women's Suffrage Association which, at its recent convention in Chicago, voted \$30,000 as a memorial to Dr. Anna Howard Shaw.

To Check Milk Adulteration.—Drastic steps for the checking of the alleged practice of watering milk, recently brought to light through the activities of the bureau of health, are now being taken by that department. Twenty-eight prosecutions have been lodged during the past six weeks. According to John Vogelsson, chief of the bureau, it is not the big milk companies that are responsible, but it is the small dealers who buy milk in cans and bottle it themselves that are to blame. Inspectors have found a large number of cases of this violation of the law in all parts of the city, but the greatest number has been reported from downtown. Many samples tested at the Phipps Institute have been found to contain butter fat below the legal standard of 3.25 per cent.

SOUTH CAROLINA

Building for Physicians.—An office building has just been completed at the corner of Brown and North streets, Greenville, by a company whose president is Dr. R. E. Houston and secretary and treasurer Dr. Samuel G. Glover. The building will be occupied by seven physicians, who are joint owners of the building.

State Association Meeting.—The annual meeting of the South Carolina State Medical Association will be held at Greenville, April 20 to 21, under the presidency of Dr. Ebenezer W. Pressly, Greenville. The address in medicine will be delivered by Dr. Edward H. Goodwin of the University of Pennsylvania, Philadelphia, and that on surgery by Dr. Stuart McGuire, Richmond, Va.

TENNESSEE

Physician's Bureau Elects Directors.—At the annual meeting of the Physician's Business Bureau of Memphis, Drs. John L. Jelks, Otis S. Warr, Hiram B. Everett, Louis Leroy, William T. Black, William Britt Burns, John C. Ayres, Louis Levy, Arthur G. Hudson, Rufus W. Hooker, Abraham L. Blecker, Frank D. Smythe, John J. Huddleston and Alfred B. DeLoach were elected directors.

Campaigns for Hospitals.—The campaign for the Jewish Hospital at Memphis, when it had raised \$400,000, was delayed temporarily on account of the prevalence of influenza. The campaign will be reopened, however, and an additional \$100,000 will be raised.—In order to raise the half million dollars for the completion of the Methodist Hospital at Memphis, now in course of construction, the conferences of Memphis, North Mississippi and Arkansas will again be asked to contribute, in addition to the gifts already made.

WISCONSIN

Physicians' Club Organized.—The Ripon Physicians' Club has been organized, with Dr. Sidney S. Hall, president, and Dr. Orvil O'Neal, secretary.

Eye and Ear Men Elect.—At the annual meeting of the Milwaukee Oto-Ophthalmic Society, February 6, Dr. Gustavus I. Hoague was elected president; Dr. Richard J. Muenzner, vice president, and Dr. John E. Guy, secretary. At the next meeting of the society, March 16, Dr. Justus Matthews, Minneapolis, will conduct a clinic.

Personal.—Dr. Otho A. Fiedler, Sheboygan, has been reappointed a member of the state board of health.—Dr. Nicholas J. Hamilton, Madison, convicted several years ago of second degree manslaughter and sentenced to seven years' imprisonment at the state prison, Waupun, has been restored to citizenship by the governor, but will not be permitted to practice medicine.—Dr. N. J. Malloy has been appointed health officer of Fond du Lac, succeeding Dr. Frank L. McGauley, resigned on account of illness.

GENERAL

American Physicians Decorated.—The king of Greece visited the American Red Cross Dispensary of Saloniki, March 7, and decorated the officers of the medical staff.

Military Surgeons to Meet.—The twenty-eighth annual meeting of the Association of Military Surgeons of the United States will be held at New Orleans, April 22 to 24, with headquarters at the Hotel Grunewald under the presidency of Col. Joseph A. Hall, M. C., N. G., Ohio.

Issue Themselves Licenses.—Just prior to a complete change in the personnel of the Oklahoma State Board of Medical Examiners recently, the outgoing board consisting of eight members, including an osteopath, are reported to have issued to themselves complimentary licenses recorded as having been based on a written examination. The record indicates that the papers of each one were graded at exactly 92 per cent.

National Tuberculosis Association Meeting.—The annual meeting of the National Tuberculosis Association will be held at the Hotel Statler, St. Louis, April 22 to 24, under the presidency of Dr. Victor C. Vaughan, Ann Arbor, Mich. Dr. Vaughan has appointed the following committee to make nominations of twelve directors to serve for a term of five years: Dr. Vincent Y. Bowditch, Boston, chairman; Drs. Edward R. Baldwin, Saranac Lake, N. Y., Walter Jarvis Barlow, Los Angeles, Hoyt E. Dearholt, Milwaukee, and Henry W. Hoagland, Colorado Springs, Colo.

Certification of Clinical Thermometers.—The fact that many clinical thermometers of faulty workmanship are offered for sale has been repeatedly discussed. An effective remedy for this evil has been found in Massachusetts, after careful tests of 10,000 thermometers by the state commissioner of weights demonstrated that 25 per cent. were defective. Under a new state law, no clinical thermometer may be offered for sale in Massachusetts unless its accuracy has been attested by the certificate and seal of the state commissioner of weights and measures. The penalty for violation of the act is a fine of \$50 for each uncertified thermometer offered for sale.

Civil Service Examination.—Application will be received until June 29 by the United States Civil Service Commission for an open competitive examination for bacteriologist and junior bacteriologist in the United States Public Health Service, the salary for bacteriologist ranging from \$130 to \$180 a month; for associate bacteriologist, from \$90 to \$130 a month; for assistant bacteriologist, from \$70 to \$90 a month; for junior bacteriologist, \$70 a month, and for junior bacteriologist part time, at \$30 to \$50 a month. Appointees will be allowed subsistence and one room, or \$15 or \$20 for commutation and quarters, according to grade of station.

Wood Alcohol Poisoning.—The National Committee on the Prevention of Blindness sent recently a request for authoritative information to the health officers of each state, the health officers of 100 of the largest cities, state commissions for the blind, associations for the blind, hospitals, and to prosecuting attorneys asking for the number of deaths and the cases of total or partial blindness occurring since Aug. 1, 1919, from alcohol, wood alcohol "whisky," denatured alcohol and forms of wood alcohol poison unknown. Up to date answers have been received from about one third of the questionnaires sent out:

No. of deaths from wood alcohol poisoning	145
Wood alcohol straight	10
Wood alcohol "whisky"	61
Denatured alcohol	4
Form of wood alcohol poison unknown	68
Florida toilet water	1
Extracts	1

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, Philadelphia, \$10,000 for the endowment of a room in memory of himself and wife, Mt. Sinai Hospital, \$3,000, and Jewish Sanatorium, Eaglesville, Pa., \$1,000 by the will of Herman Prager.

St. Barnabas Hospital, Newark, N. J., \$3,000 by the will of Miss A. A. Westervelt.

Julia F. Burnham Hospital, Champaign, Ill., a gift of \$75,000 by Mrs. Newton M. Harris, with an additional \$25,000 conditional on the subscription of a like amount by the community.

Sanatorium for blind babies, \$2,500; Harvard Dental School, \$500 by the will of Mrs. Louisa A. Beal.

Harrisburg, Pa., Hospital, \$25,000 by the will of Mrs. Andrew J. Dull.

St. Luke's Hospital, Bethlehem, Pa., \$5,000 to endow a bed to be known as the Josiah Bachmann Free Bed, by the will of Josiah Bachmann.

Bryn Mawr, Pa., Hospital, \$50,000 by the will of Mrs. Lois Buchanan Cassatt.

Miami County, Ind., Hospital, Peru, \$1,000 for the endowment fund by the will of Ner Black.

Physicians Needed in Orient.—The Interchurch World Movement (45 West Eighteenth Street, New York City) has issued an appeal for physicians for five years' service in the near and far eastern countries. The appeal is directed chiefly to recent graduates and to physicians discharged from military service who have not yet become reestablished in practice. In addition to general practitioners, specialists in pathology, neurology and psychiatry are urgently needed for service in Turkey, Syria, Palestine, Persia, Siam, Indo-China, Malaysia, Philippine Islands, India, Africa, China, and Japan. There are places for more than 600 physicians, men and women. Married physicians who enlist for five years will be provided with a home and an annual salary equivalent to \$3,000 in United States currency. Single physicians will be allowed an annual salary of \$2,000. All traveling expenses will be paid. A grant from the Rockefeller Foundation for a course in postgraduate work in America may be available to those who give five years' service in China.

The Influenza Epidemic.—During the week ending February 21, the incidence of epidemic influenza declined definitely in thirty-seven of forty states from which reports were received by the Public Health Service. Increases were recorded in Georgia, Oregon and Vermont, and only relatively small decreases were noted in Maine, New York and Louisiana. Taking the forty-six large cities as a whole the peak of mortality was reached in the week ending February 14, when there was an excess of 1,322 in the annual mor-

tality rate per hundred thousand of population as compared to the norm for the corresponding week of the median period 1910-1916. In the weeks immediately preceding and following this the excess rates were 1,241 and 853, respectively. At the height of the epidemic of 1918, the excess annual mortality rate in the three peak weeks was 4,592, 4,695 and 3,332 per hundred thousand. A statistical comparison of the epidemics of 1920 and 1918 reveals a striking constancy in the ratios of the excess mortality rates. Although the peak rates for the different cities vary from 5 to 152 per cent. as compared to those for 1918, the mortality chargeable to the present epidemic is so far under 30 per cent. of that in 1918. In five cities—St. Louis, Kansas City, Detroit, Milwaukee and Minneapolis—the peak rate in this epidemic has exceeded that in 1918, while the excess of mortality in Albany, N. Y., Baltimore, Boston, Cleveland, Richmond, Va., San Francisco and New Orleans, was less than 20 per cent. of that recorded in the first epidemic, New Orleans having the lowest ratio, 5 per cent. There was a definite geographic movement of the epidemic, which developed in two well separated areas, one along the Great Lakes and the other in the Middle Atlantic region represented by New York City and Washington, D. C.

Medicines and Hospital Supplies for Sale by the Government.—The Surplus Property Division, Office of the Quartermaster General of the Army, offers for sale to all classes of buyers a quantity of surplus drugs and medical supplies on which fixed prices have been established. The present offer will be in effect from March 5 to April 5, 1920. No official forms are required; orders may be made by letter or telegram. Full shipping instructions should accompany all orders. No deposit will be necessary on orders amounting to less than \$1,000.

A list of articles for sale contains the prices and minimum quantities of drugs, of which the following are a few examples: boric acid tablets (324 mg.) 500 for \$0.60; ammonium chlorid, \$0.20 a pound; silver nitrate crystals, \$0.76 an ounce; barbitol tablets (324 mg.), 100 for \$1.50; caffeine citrate tablets (0.65 mg.), 500 for \$3.30; chloral hydrate, \$0.06 an ounce; chloroform (one-fourth pound tins), \$0.25 a pound; collodium, \$0.02 an ounce; iodine, \$0.23 an ounce; nitroglycerin tablets (65 mg.), 20 for \$0.10; phenol (5 pound tins), \$0.16 a pound; aromatic spirit of ammonia (one-half pound bottle), \$0.65 per pound; strychnin sulphate (1 mg. hyp. tablets), 20 for \$0.05. Also listed are surgical instruments, rubber aprons, operating tables, litters, bandages and crape paper.

Further information may be obtained from and orders may be sent to the "Zone Supply Officer" at any of the following addresses: Army Supply Base, Boston; 461 Eighth Avenue, New York City; Twenty-First Street and Oregon Avenue, Philadelphia; Coca Cola Building, Baltimore; Transportation Building, Atlanta, Ga.; Army Building, Fifteenth and Dodge Streets, Omaha; Fort Mason, San Francisco; Seventeenth and F Streets N.W., Washington, D. C.; Newport News, Va.; Jeffersonville, Ind.; 1819 West Thirty-Ninth Street, Chicago; Second and Arsenal Streets, St. Louis; Audubon Building, New Orleans; San Antonio, Texas; New Cumberland, Pa.; Columbus, Ohio, or to the Surplus Property Division, Medical and Hospital Section, Munitions Building, Washington, D. C.

FOREIGN

Hospital Shelled by Turks.—An Associated Press telegram of February 29 states that the American Hospital at Marasch was shelled by Turkish nationalists, January 22 and 23.

Edinburgh College of Surgeons Admits Women.—At an extraordinary meeting of the College of Surgeons of Edinburgh held, March 3, it was resolved that women should be admitted to fellowship in the college.

Coordination Between Hospitals in France.—Dr. Tuffier of Paris has been charged with the permanent task of technical inspection and supervision of the public health service hospitals of the country, to arrange for effectual coordination.

Council on Natality.—The French authorities have appointed a Conseil supérieur de la natalité in the public health service. Our exchanges comment on the fact that only three physicians are included in the thirty members of the council.

Chemical Companies Merge.—Plans are well under way for the amalgamation of two of the largest chemical companies in Great Britain, Brunner Mond & Co., with a capital of more than \$48,665,000 and the Castner Kellner Alkali Co., with a subscribed capital of \$4,866,500.

Tax on Roentgen-Ray Plates.—The *Archives d'électricité* of recent date brings a vigorous protest by Dr. de Courmelles against the "iniquity" of the present luxury tax in France of 10 per cent. on the plates used in radiography. "As if," he exclaims, "it is a luxury to have a diagnosis cleared up by radiographic examination."

Night Medical Service at Paris.—The night medical service in Paris has been reorganized and thirty physicians under 30, or 35 if they have served in the war, are to be appointed to serve in turn, with an automobile at their disposal. The term of service is for three years, and the salary is 3,000 francs. This amounts to 50 francs for each night of service, the number falling to each physician being about sixty. Provision is also made for five substitutes. The service is connected with the police department.

Medical Cooperative Society.—The physicians of Brussels, Antwerp and Liège have founded in each of these cities a cooperative store for the benefit of physicians, pharmacists, veterinarians, midwives, and widows of members of these professions, and also docteurs en sciences. The society at Liège is affiliated with the Association contre la vie chère at Antwerp, and the Coopérative médicale at Brussels, and the store will carry samples of goods to be ordered, besides a large stock of canned goods, cigars, etc. The shares are 100 francs each and no one is allowed to buy more than ten shares. The Prévoyance médicale, of Liège, as it is called, started with 183 shareholders and the store opened in January.

Deaths Abroad.—Sir Thomas Peter Anderson Stuart, University of Edinburgh, 1882; D.Sc., University of Durham, 1911; LL.D., University of Edinburgh, 1900; aged 63; professor of physiology and dean of the medical faculty of the University of Sydney, New South Wales; who organized the expedition of the Royal Society of London, to Funafuti, an island of the Ellice Group in the Pacific, which by boring to a depth of 1,000 feet into coral rock secured confirmation of the Darwinian theory of reef formation; died, March 3. —Dr. Knud Poulsen, a leading physician in Denmark, succumbed to fulminating infection after droplets from a streptococcus sore throat had been coughed in his face, aged 48. —Dr. Braun, inspector-general of the public health service in Morocco, and recently appointed director of the same service at Strasbourg.

The Nursing Profession in Europe.—With the assistance of the American Red Cross, the first school for nurses in Czecho-Slovakia has been established at Prague under the direction of American nurses. It is expected that within three years the training school will be in charge of Czecho-Slovakian nurses, for two native women have been sent to the Massachusetts General Hospital to prepare for this eventuality. In Poland there are now over fifty nurses' aides in training at various hospitals under the direction of the American Red Cross and more than 130 volunteers are receiving preliminary instruction. The need for nurses is felt keenly in Eastern Europe, for fighting is still going on and thousands of sick and hungry refugees are returning from their exile in Russia, bringing with them typhus fever, cholera and dysentery.

Memorial Tributes to Baccelli.—A national committee in Italy has charge of the task of honoring the memory of Guido Baccelli, and on the fourth anniversary of his death a notable meeting was held in the capitol where a bust of Baccelli was unveiled and his important and pioneer work as physician, medical teacher and research worker, and as statesman was extolled by leading men of the nation. It is the third time that a special celebration in his honor has been held in the capitol—two of them during his lifetime—an unprecedented tribute. A tablet was also placed on his late residence, and a special public meeting was planned in the Baths of Caracalla, among the excavations of ancient Rome which Baccelli inaugurated and superintended. To him are due also the laws relating to the draining of the marshes around Rome; he inaugurated also the administration of heroic drugs by the vein.

Red Cross Items.—The first meeting of the General Council of the League of Red Cross Societies was held in Geneva, Switzerland, March 2 to 10. Two main topics were discussed at the meeting. The first related to the improvement of public health and the prevention of disease according to the program outlined at the Cannes meeting in April, 1919, and the second was the consideration of the program of service in peace time, the most effective means of extending the membership and resources of the Red Cross. In addition to these general topics the thirty societies which are members of the league supplied samples of posters, pamphlets, moving picture films,

and other material used during or since the war by the national societies. —The National Red Cross Society of Czecho-Slovakia and Uruguay have joined the League of Red Cross Societies. —Dr. Octave Monod of the Pasteur Institute, Paris, has been appointed assistant chief of the department of tuberculosis. —Mr. C. R. Hewitt, formerly librarian of the Royal Society of Medicine, London, has been made librarian of the league.

Scientific Publications in Germany.—The *Münchener medizinische Wochenschrift* quotes Prof. von Harnack, the librarian, speaking at a recent convocation of the University of Berlin on the plight of German science. He explains it as follows: "(1) Because we are unable to buy any more foreign books and periodicals; the library with its present resources can subscribe only to 170 foreign periodicals instead of 2,300. The library had appropriated 112,000 marks to purchase works that had been published in other countries during the war, but it would take over a million marks to buy these works now. (2) Our scientific journals in Germany are in a most precarious condition (auf dem Aussterbeetat) as the publishers are no longer able to take the risks. (3) No more scientific monographs can be published as the scientific academies are no longer able to subsidize them. (4) The books already on hand in Germany, especially the great collected works on scientific subjects, are flowing out of the country in great numbers. Even the textbooks, when the editions dating from cheaper times are exhausted, will become unbelievably expensive."

LATIN AMERICA

Lethargic Encephalitis in Peru.—The Lima Academy of Medicine states that several cases of lethargic encephalitis have occurred in Lima.

Branch of American College of Surgeons in Peru.—During the visit of Drs. Mayo and Martin to Lima, Peru, there was organized in that city a branch of the American College of Surgeons.

Death of Dr. Coyula.—Dr. Luis Coyula, mayor of the city of Mexico, died suddenly on March 3 of heart disease. Dr. Coyula was a former professor of physiology in the school of medicine.

Medical Expert Wanted in Paraguay.—Among various experts whose services are desired by the government of Paraguay, one should be an expert in tropical diseases. The minister in Washington is in charge of the matter.

Influenza in Mexico.—The epidemic of influenza in Mexico is abating rapidly. All churches, theaters and schools have been reopened. The official reports show that there have only been sixty-six deaths from the disease recently.

Brazilian Hospital Items.—Dr. Graciano Feliciano, present head of the public health service of Bahia, has been appointed assistant director of the Central Military Hospital. —The new military hospital at S. Paulo will soon be open, with Lieut.-Col. Brenno Moniz as its first director.

New Asylum for Infants in Santo Domingo.—An infant welfare association under the name of *Gota de Leche* has recently been established in Santo Domingo. At its headquarters it has accommodations for twelve children, in addition to a medical dispensary, milk station, and a public bath department.

Enforcement of Patent Medicine Regulation.—An executive resolution was promulgated in Havana, February 11, by which the following articles of the pharmacy regulations of 1913, enforcement of which had suspended were finally put into effect:

ART. 46.—Foreign patent medicines must be registered with the Bureau of Health by agents or importers, and their circulation in the country shall be permitted only upon fulfilment of the following conditions: (a) The labels must name the constituents to which the patented article owes its medicinal property; (b) the labels must also state the name of the manufacturing druggist or company in the country of origin.

ART. 47.—No patent medicine shall be put on sale before its registration with the Bureau of Health. A certificate of registration will be issued by the said bureau within three days from date of application.

Gold Medal Presented to Dr. Pérez Aranibar.—The Sociedad de Beneficencia Pública of Lima, Peru, recently presented its former director, Dr. A. Pérez Aranibar, with a jeweled gold medal in token of appreciation of his indefatigable and efficient management of this official system of organized charities. In commenting on the event, the *Crónica Médica* remarks that the tribute is simple justice, as he took a very

active part in carrying through a number of works and improvements of a medicosocial nature while he was in office during 1917 and 1918.

Changes in the "Brazil-Medico."—Our Rio de Janeiro exchange enters on 1920 and its thirty-fourth volume with a change of management, the former general manager for twenty-six years, Dr. Bulhoes Carvalho, having been obliged to resign his connection with the journal as he has been appointed director of the state department of statistics. The editor in chief of the *Brazil-Medico*, Dr. Azevedo Sodré, remains in charge and his two sons have assumed the management. They have already enlarged the journal and introduced an extensive news department and current literature department, following the style of THE JOURNAL to some extent. The management announces further that arrangements have been made for special correspondence from four of the principal cities of Brazil, and from Paris, Berlin and New York.

Government Services

Base Hospital Receives Appropriation

Seventy-five thousand dollars has been appropriated from the funds of the construction division of the War Department for the improvement of the base hospital at Fort Sam Houston.

Hospital Discontinued

The Surgeon-General's recommendation to discontinue U. S. General Hospital 43, Hampton, Va., has been approved and the director of real estate service has been instructed to cancel the lease and return the property to the board of managers of the National Home for Disabled Volunteer Soldiers.

Medical Veterans of the World War

Col. Frederick F. Russell, M. C., U. S. Army, secretary of the Medical Veterans of the World War, states that during February, 169 new members joined, making a total membership of 2,711 divided as follows:

Medical Corps, U. S. Army.....	1,245
Medical Corps, U. S. Navy.....	51
Medical Corps, U. S. P. H. S.....	62
Contract Surgeons, U. S. Army.....	88
Acting Assistant Surgeons, U. S. P. H. S.....	47
Members Local Board	527
Members Examiner, Local Board	183
Members Medical Advisory Board.....	508

Bill to Purchase Land of Army Hospital at Azalea, N. C.

Senator Wadsworth, chairman of the Committee on Military Affairs, introduced a bill, March 6, authorizing the payment of \$55,000 for the purchase of land on which the army hospital at Azalea, North Carolina, is located. The hospital buildings at this site cost the government \$2,600,000, but no arrangement has ever been made for the purchase of the land on which the buildings are located. Secretary of War Baker wishes to use this camp as a permanent one, and has asked Congress for authorization to purchase the land, which consists of 360 acres. It is located at an altitude of 2,000 feet and is well situated for the treatment of army tuberculosis patients. The hospital has a capacity of 1,300 beds and there are 900 patients there at present.

HONORABLE DISCHARGES, MEDICAL CORPS, U. S. ARMY

Note.—In the following list, L., signifies lieutenant; C., captain; M., major; L. C., lieutenant-colonel, and Col., colonel.

ALABAMA	
Chancellor—Austin, B. F. (L.)	Mellwood—Clatt, J. N. (C.)
Mobile—Brown, R. D. (C.)	Scranton—Lipe, E. N. (L.)
ARKANSAS	
Fayetteville—Wilson, D. R. (L.)	Berkeley—Kierulff, H. N. (C.)
Forest City—Bridgeforth, D. O. (M.)	Calexico—Sims, P. N. (L.)
Hartford—Routh, H. P. (C.)	Los Angeles—Curric, A. H. (L.)
	Dow, J. N. (C.)
	Koebig, W. C. S. (C.)

Oakland—Hamilton, G. B. (M.)
Milliken, W. P. (C.)
Placencia—Thibodo, F. H. (C.)
Redlands—Ide, C. E. (C.)
San Francisco—Griffin, C. F. (C.)
Reinstein, A. H. (C.)
Topping, F. P. (M.)
Sanger—Madden, T. F. (L.)

COLORADO

Denver—Lee, G. F. (L.)
Wescott, O. D. (M.)

CONNECTICUT

Hartford—Owens, W. T. (M.)
Seigall, H. A. (L.)

DISTRICT OF COLUMBIA

Washington—Covey, C. B. (L.)
Ford, R. H. (C.)
King, H. C. (C.)
Tilton, J. A. (L.)
White, L. M. (C.)

FLORIDA

De Land—McDaniel, R. F. (L.)
Jacksonville—Day, G. (C.)
Gilbert, R. E. (L.)

GEORGIA

Augusta—Davis, T. L. (M.)
Talbotton—Douglass, W. C. (L.)

ILLINOIS

Cambridge—Hawks, J. D. (C.)
Chicago—Carlin, H. W. (L.)
Culver, F. E. (C.)
Greenberg, P. B. (L.)
Hans, E. (L.)
Karatz, M. B. (L.)
McLean, G. M. (C.)
O'Connor, T. P. (L.)
Phillips, D. C. (C.)
Pilot, I. (L.)
Roberg, O. H. (M.)
Stain, N. C. (L.)
Thexton, L. (M.)
Woodnick, G. W. (M.)
Fairland—Murphy, L. J. (C.)
Kankakee—Riach, T. J. (M.)
Marseilles—Weirick, A. J. (C.)
Mount Carroll—Clay, W. E. (L.)
Wilmette—Conley, B. M. (C.)

INDIANA

Anderson—O'Neill, T. J. (L.)
Evansville—Whitledge, H. E. (C.)
Jasonville—Hadley, A. W. (C.)
Kokoma—Peters, B. J. (L.)
Kramer—Martin, W. D. (L.)
Lapaz—Tallman, H. H. (C.)
Linton—Thomas, A. A. (C.)
Madison—Davis, R. E. (L.)
Onward—Badders, A. C. (C.)
Valparaiso—Evans, H. M. (L. C.)

IOWA

Farragut—Beatty, J. J. (L.)
Kewick—Negus, A. (C.)
Lake City—Middleton, H. E. (L.)
Millerton—Corbin, S. W. (M.)
Monroe—Billingsley, J. W. (L.)
Sioux City—Rhodes, F. G. (C.)

KANSAS

Galva—Gore, L. M. (L.)
Lawrence—Barnes, R. E. (L.)
Ensign, C. F. (L.)

LOUISIANA

Baton Rouge—Hyes, A. S. J. (L.)
Buras—Ballowe, H. L. (C.)
New Orleans—Kemp, R. S. (L.)

MAINE

Portland—Nichols, N. E. (L. C.)

MASSACHUSETTS

Boston—Carney, H. E. (C.)
Strong, R. P. (Col.)
Ullian, L. J. (L.)
Northampton—Greene, E. C. (M.)
Westboro—Clark, A. U. F. (C.)

MICHIGAN

Battle Creek—Read, A. J. (C.)
Detroit—Des Rosiers, A. L. (L.)
Krohn, A. H. (L.)
Mallow, O. B. (C.)
Oill, G. V. (C.)
Wehenkel, A. M. (C.)

MINNESOTA

Rochester—Walker, J. C., Jr. (L.)
Sauk Center—Lamb, H. L. (M.)
St. Paul—Beaudoux, H. A. (C.)

MISSISSIPPI

Lucien—Lofton, A. C. (L.)
Oakvale—Polk, P. R. (C.)

MISSOURI

Bel Air—Holligsworth, W. Y. (C.)
Bowling Green—Butzke, E. J. (L.)

Kansas City—Lynn, W. J. (M.)
St. Louis—Farrell, J. A. (L.)
Kuhlmann, F. C. E. (M.)

NEBRASKA

Marion—Bartholomew, W. S. (L.)
Oconto—Wade, J. C. (C.)

NEW JERSEY

Jersey City—Henderson, R. D. (L.)
Montclair—Mount, W. B. (L.)
Newark—Liebmann, W. C. (L.)
Passaic—MacGuffie, R. N. (L.)
Trenton—Gosline, H. I. (M.)
Rosenthal, L. V. (L.)

NEW MEXICO

Fort Bayard—Little, O. W. (C.)
Gallup—Allison, D. (C.)
Mescalero—Callaway, J. R. (M.)

NEW YORK

Albany—Van Winkle, H. L. (M.)
Brooklyn—Bogan, R. (L.)
Logue, J. (C.)
Moore, W. V. (L.)
Piquet, S. D. (L.)
Buffalo—DeGraff, R. M. (L.)
Thoma, E. W. (L.)
Dannemora—Robert, H. R. (L.)
Elmhurst—Graves, L. K. (M.)
Franklinville—Reimann, L. E. (L.)
Gowanda—Johnson, H. W. (M.)
New Bridge—Stygall, J. H. (C.)
New York City—Baughman, W. H. (M.)
Hansen, H. B. (L.)
Irish, C. G. (L.)
McGovern, F. X. (L.)
Osineup, G. S. (C.)
Richardson, F. A. (C.)
Strowger, C. W. (C.)
Thornley, J. P. (C.)
Webster, C. E. S. (M.)
Spencer—Terwilliger, F. (C.)

NORTH CAROLINA

Greensboro—Compton, B. S. (L.)
Newland—Long, M. I. (L.)

OHIO

Cleveland—McCleery, J. M. (L.)
Columbus—Philips, D. P., Jr. (L.)
Gallipolis—Rose, E. J. (C.)
Orwell—Sellers, R. R. (M.)
Springfield—Dornblaser, H. B. (C.)
Miller, E. (L.)

OKLAHOMA

Arnett—Stoll, A. A. (C.)
Muskogee—Nicholson, H. M. (L.)

PENNSYLVANIA

Hepburnville—Waltz, A. D. (L.)
Lancaster—Brown, H. C. (L.)
Lemoyne—Everhart, E. S. (M.)
Philadelphia—Grimes, R. B., Jr. (M.)
McFarland, J. (M.)
Shamokin—Yeager, W. H. (M.)
Sharon—Millikin, H. W. (L.)
Spearman, J. F. (C.)
Stroudsburg—Van Etten, H. S. (L.)
Wyncote—Bower, J. O. (C.)

RHODE ISLAND

Newport—Cole, N. B. (M.)
Providence—Mulligan, E. W. (L.)

TENNESSEE

Chattanooga—Sullivan, B. (L.)
Irving College—Brown, P. D. (M.)
Memphis—Bender, C. A. (C.)
Robinson, C. W. (L.)

TEXAS

Abilene—Howser, J. P. (C.)
Goose Creek—Culpepper, W. L. (L.)
Houston—Hamilton, G. (M.)
Lone Oak—McCrum, S. S. (L.)
Vernon—Reger, H. J. (C.)

VERMONT

Ludlow—Kerrigan, J. P. (C.)

VIRGINIA

Elk Creek—Rhudy, B. E. (C.)
Uno—Dovell, E. B. (C.)

WASHINGTON

Seattle—Hansen, M. M. (L.)
Tooker R. N. (C.)

WEST VIRGINIA

Sistersville—Boice, R. H. (L.)

WISCONSIN

Wilwaukee—Grosskopf, E. C. (C.)

Foreign Correspondence

LONDON

Feb. 13, 1920.

The Study and Treatment of Mental Disorders in Early Stages

In a joint letter to the *Times*, Allbutt, Barlow, Savage, Mott, Armstrong-Jones and others draw attention to the urgent need of reform in the methods of dealing with mental disorders. In 1918, the Medico-Psychological Association of Great Britain and Ireland, after considering the amendment of the existing lunacy laws, reported that there are few facilities for patients threatened with mental breakdown to obtain skilled treatment until they are certified as insane and placed in asylums, whereas the early symptoms often occur long before certification is possible; that, owing to delay in treatment, the most valuable time for securing early recovery is lost; that the public, being alive to the material and moral damage which certification often inflicts on the patient and his relatives, refuses to resort to it even when it has become possible, still further postponing efficient treatment; that the subsequent course often shows that certification might have been avoided had there been facilities for treatment under other conditions, and that many physicians, having had no opportunity of gaining knowledge of the manifestations and treatment of mental disorders in their early stages, fail to recognize the seriousness of the condition and are, further, deterred by the necessity of certifying the patient from advising suitable treatment. The signatories of the letter endorse the proposals made by the association for the provision of treatment in the early and curable stages without certification, the provision of psychiatric clinics, especially in connection with large hospitals and medical schools, and the extension of the system of voluntary admission (which now obtains in respect of licensed houses and registered hospitals for the insane). Of these proposals, the establishment of psychiatric clinics is considered the most important. In regard to these, this country is deplorably backward compared with other European countries and the United States.

Vocal Therapy

The therapeutic value of singing, both by causing full expansion of the lungs and by its invigorating effect on mind and body, is not sufficiently appreciated. A "Vocal Therapy Fund" has been formed with a committee containing several well known leaders of the profession, including Mott, Dundas Grant and Martin Flack. In appealing for funds, the committee points out that the work is partly curative, consisting of individual training, under medical supervision, of men suffering, through shock and strain, from stammering, aphonia or mutism, and partly restorative, by instruction in choral singing, taking advantage of the well known power of song to cure ailments affecting speech and respiration. Trained choirs have been organized which give concerts both in and out of hospitals, and "song centers" have been started at general and special hospitals and hostel centers in London and the provinces. It is thought that the treatment would be especially applicable to the many thousands of medically unfit men discharged from the military hospitals who are unable to return to the full use and enjoyment of life.

A Diploma in Medical Radiology and Electrology

The increasing importance of electricity and the roentgen rays in therapeutics is being recognized in several ways. A movement is on foot to give full staff rank to the medical officers in charge of the departments devoted to these agents at the hospitals. The University of Cambridge has instituted a diploma in medical radiology and electrology, the first examination for which will be held next July. A course of instruction in physics and electrotechnics was begun at Cambridge in January, and one on radiology will begin in April. Most of the leading workers in these subjects are taking part in the teaching.

Australasian Medical Congress

After a lapse of more than six and one-half years, the Australasian Medical Congress will again meet. The eleventh session will be held at Brisbane from August 23 to 28, under the presidency of Hon. W. F. Taylor, M.D. A resolution of the congress that future meetings shall be meetings of the branches of the British Medical Association has been declared informal, but opportunity will be given for a formal decision as to whether the functions of the congress and its

assets shall be taken over by the British Medical Association. Preparations for the Brisbane session were begun in July, 1914, with the intention of holding it in 1917, but the outbreak of war postponed the meeting. The work of the congress has been divided into eleven sections, of which one is on Naval and Military Medicine and Surgery, to which a large contribution is expected from returned army and navy medical officers.

Flying Laboratories

The Cairo to Cape aeroplane flight across the whole of Africa from north to south, in which Dr. Chalmers Mitchell, the well known zoologist, is carried for purposes of scientific observation, has led Sir Ronald Ross to suggest in the *Times* that the time has come when it is feasible to consider the possibility of using aeroplanes for the medical exploration of Africa and other dark countries. He cannot say how far the suggestion would be practicable, especially in countries largely covered with bush and not at present possessing cleared landing places. But such an exploration would be of great use. He suggests that each exploring plane should carry not only a pathologist and a small portable laboratory, but also one or more clinicians, for the purpose of relieving the sickness of the poor natives who otherwise might never hope for the benefits of medical science. Research would, of course, go hand in hand with clinical work. It would be necessary ultimately to establish base hospitals and laboratories at the main aerodromes along the route.

Prohibition of the Importation of Japanese Shaving Brushes

In view of the fact that cases of anthrax have resulted from the use of shaving brushes manufactured in Japan, as reported in previous letters to *THE JOURNAL*, the government has prohibited the importation of shaving brushes from that country.

Physicians Among the German War Criminals

The list of German war criminals whose surrender is demanded by Great Britain contains the names of several commanders of submarines who sunk hospital ships. The general principle that has been followed is not that of demanding men who carried out any system, however inhuman and contrary to the rules of civilized warfare, under superior orders, but of demanding only those who, in addition, committed atrocities on their own account. For offenses against prisoners of war in German camps, eighteen physicians are wanted.

PARIS

Feb. 5, 1920.

Renewed Efforts to Increase the Birth Rate in France

J.-L. Breton, the newly appointed minister of social hygiene, social assistance and social prevision, recently submitted to the president of the republic for his signature a proposed decree providing for the establishment of a Conseil supérieur de la natalité, whose duty it shall be to investigate and promote all measures that may serve to combat the decrease in population, to increase the birth rate, to aid child welfare, and to give added protection to large families. In giving the reasons that moved him to propose this decree, the minister refers to the many serious disadvantages that result from the low birth rate in France, especially in view of the fact that the war has deprived France of at least 2,000,000 young men. This serious situation in France, he stated, had already been the subject of much study. It has long been recognized that it could not be attributed to a single cause, but that a multiplicity of causes was involved. Likewise, in order to combat the situation, a single remedy would not suffice, but that a series of remedies must be applied, some of a moral, and some of a material and economic nature. The Conseil supérieur de la natalité consists of thirty members, among whom are Dr. Pinard, member of the chamber of deputies, and formerly professor of the Faculté de Médecine de Paris; Dr. Jacques Bertillon, president of the Alliance nationale pour l'accroissement de la population, and Dr. Charles Richet, professor of the Faculté de Médecine de Paris. Professors Richet and Pinard have been appointed vice presidents of the council.

Duties of Pharmacists in the Matter of First Aid

There is no law compelling a pharmacist to dress the wounds of any person. However, from a recent decision of the Cour de Cassation, it would appear that a pharmacist who is summoned by the police cannot repudiate the summons thus served. The case in question was that of a pharmacist of Grenoble, who was summoned one night to

dress a slight wound that a young man had received. The pharmacist had refused to furnish the service required. The police court reached the decision that, the benign character of the wound being known, there was no reason why the pharmacist should not have dressed it. The pharmacist was found guilty and sentenced in consequence of his neglect. When the case came before the Cour de Cassation (the supreme court of appeal) the pharmacist pleaded the fact that, not being a physician, he could not legally be required to perform the service in question. The Cour de Cassation, however, rejected his appeal, holding that a single act of intervention in the treatment of the wound would not have constituted an illegal act in the exercise of the rights of the medical profession. This decision has been severely criticized by lawyers who are experts in medicolegal and pharmaceutical matters of this nature. One such expert compares the case of the pharmacist of Grenoble to that of another pharmacist of the same region who was sentenced, a few years ago, for having dressed a wound, which was also of benign character—at least, to all appearances. It is true, in the second case, the patient died of tetanus a few weeks after the dressing was applied by the pharmacist. The points of resemblance in the two cases show that it is difficult for a judge to base a verdict on the supposedly benign character of the wound.

The Use of Ether in the Treatment of External Infections

For several years Dr. C. Souligoux, surgeon to the hospital of Beaujon, has been employing ether as a routine in the treatment of external infections (wounds, compound fractures, lymphangitis, erysipelas) and of peritoneal infections. The treatment of generalized peritonitis by ether lavage of the peritoneum has even come into general use. In view of this fact it may be of interest to review the circumstances under which this method of treatment came into use. In 1892, a patient who had been run over by a heavily loaded dray was admitted to the Hôpital de la Pitié. He was treated in the service of Professor Le Fort. Both legs of the patient were badly crushed. There were comminutive fractures, complicated by wounds filled with the mud of the street, and it seemed useless to hope for the recovery of the patient unless both legs were amputated at once. The patient refused point blank to have the amputation done, and would not listen to reason. Souligoux, therefore, proceeded to cleanse the wounds, using for this purpose alcohol and ether. A plaster cast was applied to each leg. To the profound surprise of the surgeon, the patient developed no infection and recovered. Souligoux concluded that this un hoped-for success was due to the fact that the ether, by rapid volatilization at body temperature, had disinfected the wound throughout, in that it had penetrated to the uttermost recesses. This, then, was the beginning of the ether treatment, which has been regularly used by Souligoux ever since.

Lethargic Encephalitis

Dr. A. Netter, agrégé professor of the Faculté de médecine de Paris and physician to the hospitals, recently called attention to the reappearance of lethargic encephalitis, a slight epidemic of which in May, 1918, he had already reported. The disease exists at present in epidemic form at Lille and in the vicinity. At Paris, and in the suburbs of Paris, there are more than 100 cases, scattered through various quarters of the city. The disease is characterized mainly by three symptoms: somnolence, paralysis of the cranial nerves (especially the oculomotors), and a more or less accentuated febrile state.

Dr. Achard, professor of the Faculté de médecine de Paris, likewise has had an opportunity of observing several cases of lethargic encephalitis, and he has called attention to certain interesting manifestations that accompany the disease, more especially the possibility of the existence of a meningeal reaction, while two of his patients presented a marked lymphocytosis. These findings have practical diagnostic value, as it is evident that a diagnosis of lethargic encephalitis must not be excluded merely because of a meningeal reaction or a lymphocytosis; nor should one be led into making a diagnosis of tuberculous meningitis, which one might otherwise be tempted to do, at times. Achard also reports the coexistence of a recurrence of lethargic encephalitis with a second attack of influenza. The reports of lethargic encephalitis accompanying influenza are still a subject of much controversy. Without wishing to go so far as to utter an opinion on the question as to whether it is the influenza virus that produces the pathologic changes in the brain or whether these are due to a superadded virus, Achard is nevertheless convinced that a relation exists between

lethargic encephalitis and influenza. Moreover, it had been pointed out by Netter in 1918 that a coincidence, at least, existed, in that the conditions favorable to the expansion of the two diseases appeared analogous.

Dr. Pierre Marie, professor of the Faculté de médecine de Paris, states, in this connection, that when one encounters an affection with soporose manifestations, associated with cephalalgia and ocular troubles and accompanied by a pronounced meningeal reaction, one should suspect, first, either tuberculous meningitis, or—in adults more especially—syphilitic meningitis, which is of frequent occurrence and is accompanied by manifestations analogous to those of lethargic encephalitis. Marie added that he had known of distinguished physicians failing to make a proper differential diagnosis under such circumstances, and that he feared such errors would become more frequent now that lethargic encephalitis was so much in vogue.

BELGIUM Liège, Feb. 20, 1920.

The Cancer Problem

The campaign that has been undertaken in this country to stay the progress of cancer continues to exert a favorable influence on medical studies calculated to throw light on the etiology and the therapeutics of this disease. The cancer commission has announced to the medical profession that, owing to the funds placed at its disposal by the government, it has in its hands the bestowal, annually, of several prizes to be given as awards to the authors of the best works on various questions pertaining to the knowledge of cancerous affections. Aside from questions that can be effectively taken up only in special laboratories, there are many others that rest on observation, pure and simple, and to which, therefore, any observing practitioner can make a useful contribution. To the second class belong such questions as: (1) the geographic or regional distribution of cancer in our country; (2) the conditions favoring the genesis and the further development of cancer; (3) questions of heredity, contagion and epidemicity; (4) the critical examination of various forms of treatment recommended against cancer, and (5) the duration of so-called "cures." The purpose of the commission is not only to favor, to the extent of its resources, every investigation of the true nature of cancer, but also to collect and coordinate the vast amount of authentic but scattered information in regard to the ravages caused in Belgium by cancerous affections and with respect to the best means of combating them. To accomplish these ends, the commission has issued an urgent appeal to the Belgian medical profession, as a whole, to take an active part in the campaign that has been launched.

The Coagulation of Blood in the Serous Cavities

The question of the coagulation of blood discharged into the serous cavities, and especially into the pleural cavity, gave rise to numerous investigations and much discussion during the progress of the war just closed. Delrez (*Archives médicales belges*), Stassen and Voncken (*Laboratorio*) were agreed that all blood effusions coagulated in a normal manner on account of a slight abrasion of the serous membrane, the wounding of which constituted the first cause of the coagulation, whereas Grégoire and Courcoux (*Coll. Horizon*) thought that blood extravasated into the serous cavities lost the property of coagulating and acquired, on the contrary, anticoagulating properties. At a recent meeting of the Société Belge de Biologie, M. Gratia brought up the question again. He says that ordinarily an aspirated traumatic pleural effusion remains in a fluid state. He maintains that the effusion consists of defibrinated blood which no longer contains any of the elements of coagulation; no fibrinogen, no cytozym, no thrombogen, no thrombin. It contains, however, large quantities of antithrombin, and when heated at a temperature of 56 C. it possesses the property of flocculating the fibrinogen. When an effusion is coagulable in vitro it is either because it contains blood freshly discharged by the wound as the result of an evacuative puncture that was carried too far or because an exudate has been added which did not coagulate in the cavity owing to the protection of the endothelium of the serosa which has cicatrized in the meantime.

Medical Printing

Owing to the annoyances that constantly arise in connection with the ever increasing scarcity of labor and the difficulties of production in general, the Belgian medical federation has formed an incorporated joint-stock company, with a capital of 400,000 francs, for the purpose of founding a medical and

scientific printing establishment, with a view of facilitating the work of printing and publishing for physicians and pharmacists. One of our medical journals, the *Scalpel*, is already being published by the corporation. The corporation expects to provide not only for the editing and publishing of medical works, but will also conduct, in connection, a stationery department, a book-store and a bookbinding department. This innovation is only the natural outgrowth of a movement toward medical reciprocity which is manifesting itself in all the large cities of the country. Since the signing of the armistice, in order to combat the high cost of living, Brussels, Antwerp and Liège have established cooperative societies, which handle not only groceries and foodstuffs, but also clothing and other articles of prime necessity. These cooperative societies are beginning to get into full working order.

Cancer of the Prostate Treated by Radiotherapy

Dr. Le Clerc Dandoy has communicated to the Société belge d'urologie his observations of a case of cancer of the prostate, in which radium exerted a favorable effect. The rarity of the case makes it worthy of mention. Three exposures to the roentgen ray and six applications of radium, by the prostatic urethra and by the rectum as well, all within three hours, was the technic employed. The symptoms improved rapidly. The pain which was unbearable subsided almost completely. The gradual disappearance of the tumor could be followed by rectal palpation. Strange to relate, running parallel with the breaking up of the tumor, the general health of the patient was much affected. Fever, oliguria and delirium were present, but gradually disappeared. This parallelism between the regression of the cancerous tissue and the appearance of general symptoms was maintained up to the end of the treatment.

A National Congress for the Study of Questions Pertaining to Disabled Soldiers and Sailors

Now that the normal affairs of life have been completely resumed, and now that the situation of all those who returned, after the war, to their abandoned firesides has been stabilized, the solution of all questions pertaining to disabled soldiers and sailors should be brought about with as little delay as possible. All those who had been called on to devote their time and energies to these questions were recently summoned by the minister of war to meet together in a national congress, to which the Association des Invalides was also asked to send delegates. The reports presented to the congress emphasized the necessity of close collaboration between the surgeon, the physiotherapist, the reeducator and the prosthetist. The value of collaboration between various specialists had been brought out by the war in all branches of medicine. In the case of disabled soldiers and sailors, more than anywhere else, collaboration was needed; in fact, it was indispensable. Unity of treatment should be everywhere present, from the time the men are injured, right up to the time when, provided with such prosthetic apparatus as they may need, they leave the school of reeducation, where they have learned to make ready use of prosthetic appliances and where they have been trained, if necessary, for a trade or profession. Dr. Hendrix gave an outline of the great work that had been accomplished by the Belgian Army Medical Corps at the famous center Bonsecours-lez-Rouen, and also described the newly established center at Woluwe (Brussels) to which all the services formerly at Bonsecours have been transferred. The services at Bonsecours were known to all the allies, and they served as models for all who wished to familiarize themselves with the organization and practical workings of reeducation centers.

In this connection a new question has arisen. Shall the state as such continue to manufacture the prosthetic appliances for the crippled and disabled? Or shall production be decentralized and private industries be permitted to develop and manufacture orthopedic equipment? This question, being one of great present interest, provoked a lively discussion, and it did not take the members of the congress long to reach a common agreement as to the desiderata required in the premises. It was agreed that, in order to assure every guaranty of safety and quality, the manufacture of prosthetic apparatus for the use of disabled men should be entrusted solely to such manufacturers as would accept medical direction and control. It was further agreed that the state could best secure a full and complete guaranty as to quality of workmanship by turning over to the Oeuvre nationale des invalides, and to it alone, the necessary funds for the equipment with, and for the upkeep and the renewal of prosthetic appliances, etc., required by disabled soldiers and sailors. The manner of using such funds should be left entirely to the

Oeuvre nationale des invalides, which would act through a mixed commission appointed to study into the details of manufacture of the required equipment and into the best methods of regulating the matter of upkeep and renewal of apparatus. This commission would be composed of army experts, members of the Belgian Red Cross, delegates of the Belgian orthopedic industry, and representatives of the disabled soldiers and sailors. In order to furnish a concrete exhibit of the progress that is being made daily in the manufacture of prosthetic appliances, it was proposed that a museum be established which should contain samples of all prosthetic appliances used by disabled soldiers and sailors. The congress also took up the study of certain financial questions pertaining to the disabled men. It considered especially the matter of government aid, which has been proposed, to assist them in the construction of simple dwellings, in the securing of small garden tracts, the opening of small shops and the purchasing of equipment in line with their profession.

MEXICO CITY

Feb. 28, 1920.

The Academy of Medicine

During the recent sessions of this association the following subjects have been discussed: Dr. Godoy Alvarez read an interesting paper on the symptomatology, and the medical and surgical treatment of the common duct obstructions, which was very widely discussed and served to bring to the fore again the virtues of the springs of Tehuacan in lithiasis. Dr. B. Vasconcelos reported a case of probable syphilitic reinfection following treatment with intravenous injections of arsphenamin and intramuscular injections of mercury. The case was in a young man who about the middle of 1917 had an indurated chancre, the syphilitic character of which was demonstrated by the presence of spirochetes. The patient had no secondary manifestations and received six injections of arsphenamin and about ten of mercurial oil. In December, 1919, after exposing himself again and after an incubation period estimated at fourteen days, he presented a new chancre at a different site on the penis, without any bubo. The spirochete was again isolated from this chancre and the Wassermann reaction was very strongly positive in the blood serum. It was not possible to persuade the patient to have a Wassermann made between the appearance of the first and second chancre; so it is not known whether the reaction was constantly negative, as should be the case before a patient is pronounced definitely cured. For this reason and because of absence of a bubo (which was lacking also in the first instance) it cannot be stated with certainty that it is one more case of reinfection to add to the large number collected by Emery in his recent pamphlet, "Traitement abortif de la syphilis" (Paris, Vigot Frères, 1914), and those observed more recently, such as that of Schamberg (described in *THE JOURNAL*). Another communication on syphilography condemns with strong reasons, at least provisionally, the use of Query's serum, which is considered as lacking sufficient scientific basis and should be mistrusted because of the silence maintained about it by all well-known French syphilologists.

Child Welfare Congress

Owing to the initiative of Sr. Palavicini, editor of a local newspaper, the first Mexican child welfare congress is to be held in September, 1920. Not only physicians but all persons interested in social matters are invited to participate. The congress will be divided into sections which will be devoted to eugenics, infant hygiene, medical and surgical pediatrics, pedagogy, and legislation. The congress will be presided over by Sr. Palavicini and among the members of the organizing committee are Sr. E. Chávez, former under-secretary of public instruction, and Drs. Rafael Carrillo, Roque Macouzet, and others. The secretaries of the committee on organization are Drs. Luis S. Viramontes and S. Uribe Rivera, whose address is: Apartado postal No. 909, Mexico City, Mexico.

The Study of Typhus Fever

The Comisión Central para el Estudio del Tabardillo has received a subsidy from the federal government amounting to 25,000 pesos (about \$12,500) for the present fiscal year, which will be expended subject to the discretion of the dean of the National University. This gift from the authorities has impressed physicians very favorably and it is hoped that it may yield some positive results, especially in view of the fact that Noguchi has offered to aid the commission with his advice in regard to parasitologic investigations,

Marriages

ABRAHAM I. WEINSTEIN, Richmond, Va., to Miss Virginia Elizabeth May of Charleston, S. C., February 1.

EARL C. WATERBURY, Newburgh, N. Y., to Miss Elmina Elizabeth Benoit of Ottawa, Ont., February 4.

HARVEY S. KOONS, New Castle, Ind., to Miss Izetta Harigan of Bloomington, Ind., January 20.

EFFIE LOUISE ABBOTT to Mr. Gilbert Wilson Morton, both of Jacksonville, Ill., February 21.

ISAO HIRATA, New Haven, Conn., to Miss Misao Kawasaki of Cincinnati, February 18.

Deaths

Lewis E. Lemen ☉ Denver; Washington University, St. Louis, 1871; aged 70; once president of the Colorado State Medical Society; clinical professor of surgery in Denver and Gross College of Medicine; surgeon to the Union Pacific and Denver, Texas and Gulf railroads; president of the Denver school board for twelve years; a member of the state board of health, a member of the staff of St. Joseph's and Mercy hospitals; consulting surgeon to St. Luke's Hospital; health commissioner of Denver in 1893 and 1894; president of the Board of Commissioners of the Colorado Insane Asylum; died February 17, from aneurysm of the aorta.

Edward Geary Tuttle, New York; New York Homeopathic Medical College, New York, 1889; aged 57; emeritus professor of gynecology in his alma mater; attending gynecologist to Flower Hospital; attending surgeon to the Yonkers Homeopathic Hospital and Maternity; consulting surgeon to St. Mary's Hospital, Passaic, N. J.; Middletown State Homeopathic, White Plains, and White Plains Hospital, New York, and Ann May Memorial Hospital, Asbury Park, N. J.; died, February 29.

John Dean Hall, Colonel, M. C., U. S. Army, retired, Washington, D. C.; College of Physicians and Surgeons in the City of New York, 1867; aged 77; who entered the Army as assistant surgeon, November 16, 1868; was promoted to captain in 1871, to major in 1889, to lieutenant colonel and deputy surgeon general in 1901, and to colonel and assistant surgeon general in 1903, and was retired by operation of law, March 18, 1906, on attaining the age of 64; died, February 25.

Harry Rodgers Lemen, Alton, Ill.; Washington University, St. Louis, 1893; aged 49; a member of the Illinois State Medical Society; Captain M. R. C., U. S. Army; a veteran of the Spanish-American War; later serving in the Philippine Islands, in the Boxer Rebellion in China, and in the Russo-Japanese War; while driving his automobile over a grade crossing in Alton, February 21, was struck by a train and instantly killed.

Albert Weil ☉ Peoria, Ill.; Rush Medical College, 1893; aged 55; a member of the staff of the Deaconess and Proctor hospitals, also a druggist; county physician of Peoria County for sixteen years; once health commissioner of Peoria; local surgeon of the Chicago and Alton, Burlington, Peoria and Pekin Terminal and Illinois Traction systems; died, February 20, from heart disease.

Ver Nooy Wayland Weed ☉ Brooklyn, N. Y.; College of Physicians and Surgeons in the City of New York, 1900; aged 42; associate surgeon to the Bushwick, Jamaica and Swedish hospitals, and a member of the staff of the Consumptives' Home; died in the Neurological Hospital, Manhattan, February 26, from cerebral hemorrhage.

John Oliver Sandercook, Oklahoma City, Okla.; St. Louis, 1871; aged 70; contract surgeon U. S. Army, with service in Indian campaigns under Generals Merritt and Crook; superintendent of the Board of Health of Canadian County, Okla., from 1902 to 1908; died in Denver, February 6, from pneumonia.

Alonzo Festus Burnham ☉ Quincy, Ill.; Rush Medical College, 1878; aged 66; for many years connected with the state hospitals at Jacksonville and Bartonville, and more

recently physician at the Old Soldiers and Sailors' Home, Quincy; died February 20, from bronchopneumonia.

Augustus F. G. Zurhorst, Oakfield, N. Y.; Western Reserve University, Cleveland, 1869; aged 72; a member of the Medical Society of the State of New York; a veteran of the Civil War; once supervisor and postmaster of Oakfield from 1914 to 1919; died, February 21, from peritonitis.

Livingston Spraker Hinckley ☉ Newark, N. J.; Bellevue Hospital Medical College, 1878; aged 64; for seventeen years medical superintendent of Essex County Hospital for the Insane, Newark; died in St. Barnabas Hospital, Newark, February 22, from pneumonia.

John Carroll McGinnis ☉ Martin's Ferry, Ohio; Miami Medical College, Cincinnati, 1901; aged 41; who served during the World War as Captain, M. C., U. S. Army, and was discharged, March 20, 1919; died in the Cincinnati Sanatorium, February 21.

David Gildner, Rockwood, Pa.; University of Wooster, Cleveland, 1883; aged 71; disappeared mysteriously, Nov. 8, 1919, and is believed to have been murdered. His dismembered body was found encased in ice in a swamp near Searight, Pa., February 15.

Paul Henry Piper ☉ Detroit; University of Michigan, Ann Arbor, 1918; aged 28; an intern in St. Mary's Hospital, Detroit; while delirious from pneumonia, leaped from a third story window at the hospital, February 14, and was instantly killed.

Charles William Hadley, Columbus, Ohio; Ohio State University, Columbus, 1912; aged 36; a member of the Ohio State Medical Association; instructor in obstetrics in his alma mater; died, February 20, from pneumonia following influenza.

Thurman Ross Beaver, Akron, Ohio; Indiana University, Bloomington and Indianapolis, 1910; aged 31; captain, M. R. C., U. S. Army, during the World War, and discharged, June 21, 1919; died, February 13, from pneumonia following influenza.

Alfred Hugh Fowler, Chicago; Rush Medical College, 1904; aged 42; a member of the Illinois State Medical Society; died in Wesley Memorial Hospital, Chicago, March 3, from chronic nephritis, complicated with cholecystitis and hepatitis.

Henly W. Allen, Boulder, Colo.; College of Physicians and Surgeons, Keokuk, Iowa, 1867; aged 82; a member of the Colorado State Medical Society; formerly president of the board of education of Boulder; also a druggist; died, February 14.

George W. Bean, Kansas City, Kan.; Eclectic Medical University, Kansas City, Mo., 1902; aged 78; a veteran of the Civil War; also a Presbyterian clergyman; died in the Soldiers' Home Hospital, Leavenworth, Kan., February 16.

Howard A. Wilson, Woodbury, N. J.; Jefferson Medical College, 1884; aged 60; a member of the Medical Society of the State of New Jersey; once coroner of Gloucester County; died in his office, February 21, from cerebral hemorrhage.

Frederick M. Brougher, Belen, Miss.; Memphis, Tenn., Hospital Medical College, 1900; aged 62; a member of the Mississippi State Medical Association; health officer of Quitman County; died, February 14, from heart disease.

Wiley A. Jones, Cantril, Iowa (license, Iowa, practitioner, 1887); aged 78; a practitioner for fifty-three years; once mayor of Cantril; surgeon of the Tenth Iowa Volunteer Infantry during the Civil War; died, February 17.

Thomas Rutledge Bass, Lafayette, Ind.; Indiana University, Bloomington and Indianapolis, 1909; aged 36; surgeon in chief of the Indiana State Soldiers' Home Hospital, Lafayette; died, February 15, from pneumonia.

Wallace Miles Knowlton, Newton, Mass.; University of Vermont, Burlington, 1880; a member of the Massachusetts Medical Society and of the American Medico-Psychological Association; died in Boston, February 6.

Joseph M. Finarty, Knoxville, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 72; a member of the Iowa State Medical Society; a veteran of the Civil War; died, February 16, from angina pectoris.

Moses Zeller, Mt. Vernon, N. Y.; Fordham University, New York, 1919; aged 26; an intern in the Lincoln Hospital and Home, the Bronx; died in that institution, February 27, from encephalitis lethargica.

Elisha Price Merritt ☉ Atlanta, Ga.; Atlanta (Ga.) School of Medicine, 1912; aged 34; secretary of the Fulton County

☉ Indicates "Fellow" of the American Medical Association.

Medical Society; a specialist in genito-urinary diseases; died, February 15, from pneumonia.

Charles William Weaver, Grand Rapids, Mich.; Fort Wayne (Ind.) College of Medicine, 1887; aged 55; died in the Detention Hospital, Grand Rapids, February 16, from poisoning by denatured alcohol.

Louis A. Turnbull, St. Louis; Missouri Medical College, St. Louis, 1888; aged 55; for many years a resident of Mexico; died in the Alexian Brothers' Hospital, St. Louis, February 17, from pneumonia.

George Washington Brown, Pratt City, Ala.; Atlanta (Ga.) Medical College, 1877; aged 72; a member of the Medical Association of the State of Alabama; died at an infirmary in Birmingham, February 15.

Harvey George Alexander, Deal Island, Md.; University of Maryland, Baltimore, 1891; aged 50; a member of the Medical and Chirurgical Faculty of Maryland; died, February 12, from influenza.

Harvey G. Hieber ♂ Los Angeles; Northwestern University Medical School, Chicago, 1903; aged 40; formerly of Thief River Falls, Minn.; died in Monrovia, Calif., January 17, from tuberculosis.

Howard Miles Jump ♂ Kelley's Island, Ohio; Toledo (Ohio) Medical College, 1895; aged 52; physician of Kelley's Island for two years; died, February 21, from pneumonia following influenza.

James Evans Kendrick, Luverne, Ala.; University of Alabama, Mobile, 1869; aged 74; a member of the Medical Association of the State of Alabama; a Confederate veteran; died, February 15.

John E. Dougläss, Cincinnati; Medical College of Ohio, Cincinnati, 1883; aged 59; medical director of the Western and Southern Life Insurance Company for thirty-two years; died, February 14.

John Waldo Booth, Binghamton, N. Y.; Northwestern University Medical School, Chicago, 1870; aged 84; a member of the Medical Society of the State of New York; died, February 14.

Edward Dormenio Hall, Meriden, Conn.; Harvard University Medical School, 1873; aged 68; a member of the Connecticut State Medical Society; died, February 19, from pneumonia.

Michael F. Murray, Chicago; Rush Medical College, 1891; aged 59; a member of the Illinois State Medical Society; died, March 3, from gangrene of the foot following arteritis obliterans.

Frank M. Brundage, Conyngham, Pa.; Jefferson Medical College, 1874; aged 68; for eight years United States consul at Aix la Chapelle, Germany; died in Scranton, Pa., February 21.

Walter Meeker Cress, Clark's Summit, Pa.; University of the City of New York, 1893; aged 55; a member of the Medical Society of the State of Pennsylvania; died, February 17.

Nathaniel George McManus, Philadelphia; University of Pennsylvania, Philadelphia, 1901; aged 42; died in St. Joseph's Hospital, Philadelphia, February 18, from heart disease.

Peleg Francis Walker, Providence, R. I.; Boston University, 1881; aged 60; for thirty years a member of the school committee of Providence; died, February 27, from heart disease.

Guy Marshall McDowell, Bay City, Mich.; Ohio Medical University, Columbus, 1906; aged 39; a member of the Michigan State Medical Society; died in Detroit, February 16.

William Adolph Myers, Brooklyn; University of the City of New York, 1888; aged 53; one of the founders of the Bushwick Hospital; died, February 16, from heart disease.

David Hamilton Lewis, Washington, Pa.; Jefferson Medical College, 1877; aged 69; died in St. Francis' Hospital, Pittsburgh, February 17, the result of a nervous breakdown.

Matthew N. Alexander, Pleasant Shade, Tenn.; University of Tennessee, Nashville, 1896; aged 61; a member of the Tennessee State Medical Association; died, February 10.

Jokshan Freymann, Kansas City, Mo.; Cincinnati College of Medicine and Surgery, 1877; aged 73; a member of the Missouri State Medical Association; died, February 13.

Sharps M. Snyder, Greenwich, N. J.; University of Pennsylvania, Philadelphia, 1865; aged 78; died about January 24.

Charles Zuppann, Ballwin, Mo.; Rush Medical College, 1877; aged 57; a member of the Missouri State Medical Association; died, February 15, from heart disease.

John Blake McKay, Marion, Ind.; Trinity Medical College, Toronto, 1904; aged 47; died in the Grant County Hospital, Marion, February 14, from pneumonia.

Robert S. Knode, Omaha; Miami Medical College, Cincinnati, 1867; aged 77; formerly secretary of the American Rhinological Association; died, January 26.

William C. Hodges, Chesterville, Ohio; Columbus, Ohio, Medical College, 1881; Homeopathic Hospital College, Cleveland, 1892; aged 61; died, February 15.

Alfred Walton, Philadelphia; Harvard University Medical School, 1879; aged 62; died at his country home, Woodbury, N. J., February 22, from heart disease.

John Havemeyer Daniels ♂ Buffalo; Niagara University, Buffalo, 1895; aged 51; died in Buffalo General Hospital, February 13, from cerebral hemorrhage.

Thomas Walter Scott ♂ Rushville, Ill.; Missouri Medical College, St. Louis, 1884; aged 71; once mayor of Rushville; died, February 19, from heart disease.

Benjamin Franklin Makepeace ♂ Farmington, Me.; University of the City of New York, 1887; aged 60; died February 16, from lobar pneumonia.

Edward C. Pearse, Braddock, Pa.; New York Homeopathic Medical College, New York City, 1900; aged 45; died, February 14, from pneumonia.

Frederick Kenner Fisher ♂ Galveston, Texas; Tulane University, New Orleans, 1873; aged 67; died, February 11, from valvulus heart disease.

Frank Hamilton Whittemore ♂ New Haven, Conn.; Bellevue Hospital Medical College, 1874; aged 65; died, February 26, from pneumonia.

Milton Keim, Philadelphia; University of Pennsylvania, Philadelphia, 1872; aged 74; a graduate in dentistry in 1866; died, February 24.

John Wellington Moriarty, Churubusco, N. Y.; University of Vermont, Burlington, 1891; aged 62; died, February 9, from pneumonia.

Mary Johnson Cochran, Chester, Pa.; Homeopathic Hospital College, Cleveland, 1889; died, February 12, from pneumonia.

Jennie Holman Griffin, Troy, N. Y.; Cleveland Medical College, Homeopathic, 1895; aged 52; died, February 17, from pneumonia.

Frederick William Ritter ♂ Tannersville, Pa.; Jefferson Medical College, 1901; aged 52; died, February 23, from pneumonia.

George W. Bahn ♂ Spring Grove, Pa.; University of Maryland, Baltimore, 1881; aged 63; died, February 13, from pneumonia.

Belle Ogden Constant, Chicago; Hahnemann Medical College, Chicago, 1917; aged 49; died, February 19, from osteosarcoma.

Mark Rowe, Paris, Ill.; Eclectic Medical Institute, Cincinnati, 1866; aged 85; died, February 14, from bronchitis.

Giacomo Abraham Senigaglia ♂ Nyack, N. Y.; Cornell University, New York, 1909; aged 31; died, February 24.

Bernard Daly, Lakeview, Ore.; University of Louisville, Ky., 1887; aged 61; died in Livermore, Calif., January 26.

Frank Amos Rhoads, Pittsburgh; College of Physicians and Surgeons, Baltimore, 1882; aged 60; died, February 6.

Herbert Daniel Dieterle, Ann Arbor, Mich.; University of Michigan, Ann Arbor, 1918; aged 26; died, February 26.

Frank Edward Fletcher ♂ Ashland, Wis.; University of Michigan, Ann Arbor, 1865; aged 76; died, February 18.

Clarence R. Seeley, Attica, N. Y.; University of Buffalo, N. Y., 1873; aged 71; died in Miami, Fla., February 6.

J. Rodley Rundlett, Delavan, Wis.; Rush Medical College, 1868; aged 74; died, February 8, from septicemia.

Frank Warren Merritt, Jay, Me.; University of Vermont, Burlington, 1889; aged 62; died, January 25.

Fred Swartzlander, Omaha; Jefferson Medical College, 1872; aged 72; died, February 23.

Ira Hersia Leslie, Verona, Wis.; Rush Medical College, 1887; aged 58; died, January 8.

Edwin B. Reed, Asbury Park, N. J.; Jefferson Medical College, 1884; died, March 1.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

HEPATOLA

A physician in Saskatoon, Saskatchewan, sends THE JOURNAL an advertisement from a local paper, reading:

OPERATIONS UNNECESSARY

HEPATOLA removes Gall Stones, corrects Appendicitis in 24 hours without pain. Registered under Pure Food and Drug Acts. \$6.00.

Profitable quackery dies hard. In the United States "Hepatola" was declared a fraud by the federal authorities in 1917 and the Hepatola Company was denied the use of the United States mails. Hepatola was claimed as the discovery of one "Dr. V. M. George" of Columbus, Ohio. So far as THE JOURNAL'S records show, and they are the most complete extant and based on official data, V. M. George is not, and never has been, licensed to practice medicine. In 1912 George was sending out letters to physicians stating that he had "retired from active practice several years ago" and that the "varied and valuable experience" that he had obtained while in practice had taught him "many things." Especially had it resulted in his discovering "a treatment

Dr. V. M. George
2308 N. High Street
COLUMBUS, OHIO

May 15, 1912

Dear Doctor:-

I retired from active practice several years ago, having been engaged, up to that time, mostly in Sanatorium work. That means a varied and valuable experience. It taught me many things, but most of all needed was a treatment that would remove gall atonee through the bowels. This, I have succeeded in doing in 24 hours, without pain or danger, or the use of poisonous drugs. The same treatment, with alight modification, will apply to both appendicitis and Typhlitis. I make no exception to the claims of this treat-

Reproduction (greatly reduced) of the letter head and opening statements made by V. M. George in 1912 when he attempted to interest physicians in his "cure" for gallstones.

that would remove gallstones . . . in twenty-four hours without pain or danger or the use of poisonous drugs." Further, "the same treatment with slight modification, will apply to both appendicitis and typhlitis." George's proposition was that physicians, instead of sending their gallstone patients to the hospital for operation, should let him treat them by his nonsurgical method. Apparently, George was not very sanguine of his venture for he said:

"The knife treatment has apparently so ossified any nascent ambition because of the hospital fees, that the average doctor is fearful to even think of any other modus operandi, lest it might destroy the very source of his existence."

In order, presumably, to fight the devil with his own weapons—and incidentally reap the reward of virtue—George suggested that

" . . . you permit me to work in harmony with you and give you the same percentage of fees as is given by the hospitals."

At the same time that V. M. George was attempting to interest the medical profession under his own name—an unsuccessful attempt as it proved—he was, under the name "Hepatola Company" appealing to the public to take Hepatola for the cure of gallstones and appendicitis. In fact, he also recommended it to persons who were perfectly well. The slogan of the Hepatola concern was "Avoid the knife." At the bottom of each page, set off from the reading matter and printed in italics one read:

"Avoid the knife—and save money"
"Avoid the knife—save your appendix"
"Avoid the knife—honeycombed with danger"
"Avoid the knife—everything for gain"

And then there were these warnings:

"When you once notice a suspicious pain in the right side, radiating to the back, that spells trouble. If you consult your physician, he will tell you right away, gall stones, appendicitis, or serious abdominal trouble. That means an operation. Don't entertain it for a minute, investigate Hepatola."

"Some fine day there is going to be an end to this promiscuous cutting by the doctors. The law protects them, and if you happen to die that closes the chapter—for the doctor. Not for the stricken family, however, who might have been relieved had they known of 'Hepatola.'"

The postoffice authorities finally got around to Mr. George and his Hepatola Company. Hepatola itself was turned over to the federal chemists for analysis and, as might have been expected, was found to be the same old fake gallstone trick—that of giving the victim a large dose of some bland oil and following it up with a saline. The soapy concretions that are voided following this dosing, are the "gallstones" which the "treatment" removes. Here is what the federal chemists reported:

"POWDER: This is an ordinary seidlitz powder, containing rochelle salts, sodium bi-carbonate and tartaric acid.

"LIQUID: This is an ordinary olive oil colored with a coal tar dye and slightly flavored with peppermint."

The same old humbug with ingredients essentially identical with "Fruitola" and "Mayr's Wonderful Stomach Remedy." Hepatola was a mail-order proposition and thus laid itself open to action on the part of the postoffice authorities. Fruitola and Mayr's Stomach Remedy, although, in the past, sold under claims just as ridiculous have always been handled through the "recognized channels" of the retail drug trade. They are still doing business; the Hepatola Company has been debarred from the use of the United States mails. The Canadian authorities might well investigate this Saskatoon industry. Possibly such an investigation would save, if not lives, at least money, for our northern neighbors.

Correspondence

SARCOMA OF THE UTERUS AND ITS RELATION TO ROENTGEN THERAPY*

To the Editor:—In a paper published in the *American Journal of Obstetrics and Diseases of Women and Children* (March, 1914) it was pointed out that the occurrence of sarcomas or of sarcomatous change in uterine fibromyomas was relatively frequent.

A careful study of 250 cases was made at that time, and twelve sarcomas were found that had been removed by operation. In only two instances was the diagnosis made, and then only at the time of operation. It was shown that symptomatically these malignant cases as a rule offered no distinctive diagnostic criteria, and for that reason it was difficult to differentiate clinically the malignant from the non-malignant cases. In other words, it was practically impossible to say definitely that a case supposedly a fibromyoma and therefore amenable to roentgen-ray therapy was not really harboring a malignant tumor. Two of the patients after operation developed extensive recurrences and died; all the others apparently did well.

In view of the frequency of these malignant cases and because of the difficulty of preoperative diagnosis, it was urged that the roentgen-ray treatment of fibroid, especially about the period of the menopause, was hazardous.

In a subsequent study of 290 additional cases there were found ten sarcomas, making a total of 540 cases with a percentage of 4.07 sarcomas. These figures, which embody the results of a study of the material in a large metropolitan hospital, represent a frequency that cannot be set aside arbitrarily. In view of these figures, what must be our attitude toward the roentgen treatment of uterine fibroids that are unassociated with the usual diagnosticable compli-

* Work done under tenure of a George Blumenthal, Jr., fellowship.

cations, such as diseased adnexa, ovarian cysts, or other tumor conditions of the ovaries or tubes?

That the sarcomas occurring in fibroids are malignant there can be no doubt; cases in my own series and the many published reports show that they recur after operation, metastasize and lead ultimately to the death of the patient. On such a basis and because of their inaccessibility, one would be inclined to say that it is temporizing or worse to irradiate a patient who may have a malignant tumor.

The literature on the roentgen treatment of fibroids now teems with statistics, and the results are the quoted observations over long periods of time. To my knowledge there are no cases in the literature of fibroids in which, after or during the roentgen treatment of fibroids, a malignant condition has developed locally. Nor are there any reported cases that during the roentgen-ray treatment or subsequently showed metastatic deposits from a primary uterine tumor. These reports must be accepted as showing that a series of cases, now mounting into thousands, undoubtedly with undiagnosed sarcomas among them, have been irradiated and cured or at least rendered innocuous, for the period of observation. It cannot be argued that the bad results have not been reported, and we must therefore alter our point of view as regards the roentgen-ray treatment of fibroids. It must be stated that, in view of the frequency of sarcomas in the cases in which operation is performed, the same percentage must occur in the cases in which irradiation has been employed. If after irradiation and prolonged periods of observation no malignancy develops in the uterus and no metastases occur, then we are bound to say not only that the roentgen ray causes a beneficent result in the treatment of fibroids but also that in those cases complicated by sarcomatous change or those cases of sarcoma not diagnosed, the same arrest in growth and retrogression of size and disappearance of symptoms takes place as in the ordinary fibroid. Whether or not subsequent observation will show that these conclusions are erroneous one cannot say; but at least if the reports of the roentgenotherapist are comprehensive, then roentgen-ray therapy has a decided place in the treatment of fibroids irrespective of whether or not the diagnosis of sarcoma or of sarcomatous degeneration was overlooked.

In a previous paper it was stated that the sarcomatous elements may not be giving rise to any special symptoms, and that thus temporarily one is lulled into a feeling of false security. It was contended that until it was proved by a long period of observation that the roentgen ray might have a curative effect on uterine sarcomas, it was unfair to expose a patient to the unnecessary risk and delay that the roentgen treatment in those cases would entail. It seems that such a period of observation has now passed and that we must realize that the roentgen ray, when applied in the approved method to uterine fibroids whether or not complicated by sarcoma, is productive of favorable results in properly selected cases.

S. H. GEIST, M.D., New York.

Adjunct Gynecologist and Associate in Surgical
Pathology, Mount Sinai Hospital.

REVISION OF THE PHARMACOPEIA

To the Editor:—Your recent announcement concerning the coming meeting of the U. S. Pharmacopeial Convention (*THE JOURNAL*, Feb. 28, 1920, p. 613) is most timely. It is important that every medical society and college privileged to send delegates to the convention should do so. The Pharmacopeia should furnish standards of purity and strength of drugs needed by the profession. It also should tell how to make standard preparations of them.

Drugs that are useful are those which possess physiologic or pathologic action. Unfortunately, the Pharmacopeia still contains some that possess neither. It is still more encumbered by a multiplicity of preparations that must now be learned by pharmacists and physicians. Two preparations, or in some instances three or four of each drug, are all that are needed. The Pharmacopeia should point out these best preparations and necessary drugs; others should be omitted.

The latest revision of the Pharmacopeia was about five years in making. If cut to proper proportions, the revision could be made much more promptly, for it takes as long to prepare the description of unnecessary and superfluous drugs and preparations as of necessary ones. It is so important for medical men to possess standards for the drugs and preparations which they use that they must take interest in the revising of the Pharmacopeia. This should not be left altogether to retail or manufacturing druggists and, above all, the manufacturers of trade-marked and proprietary preparations.

I hope that you will continue to agitate this subject until the medical profession takes the active part in the affairs of the Pharmacopeia which it should.

N. S. DAVIS, M.D., Pasadena, Calif.

"WHAT IS SO-CALLED SCIENTIFIC DRINK CONTROL?"

To the Editor:—Your editorial "What Is So-Called Scientific Drink Control?" in *THE JOURNAL*, February 14, is presented at a time when this question is uppermost in the minds of many thoughtful students, and when the question as to what is an intoxicating beverage is being submitted for a correct answer to the medical profession. The national prohibition act has raised the question, What is an intoxicating beverage? It would appear that the term "intoxicating" is used in the ordinary, reasonable and accepted sense, and is synonymous with drunkenness. Doubtless this question will finally be officially determined as a result of scientific tests made by competent medical authorities. Only the other day the New York State Bureau of Health was requested by the legislature of that state to study this phase of the alcohol question and to report its findings, in order to guide the legislature in arriving at a conclusion as to what is an intoxicating beverage. As you rightly say, it is remarkable that, while much has been written with reference to alcohol, there is yet much to learn with reference to its action. This would appear to apply especially to alcohol in dilute solutions and to alcohol when it appears in combination with other substances, as in the malt beverages. Practically all the available data of experimental work done prior to 1919 refer to relatively strong solutions of alcohol.

That the effects of different doses of alcohol may yield different results at times is referred to by Dodge and Benedict, from whose work I quote:

In addition to the main experimental precautions we systematically varied the alcohol dose. This was done for the following reasons. In the first place, it is a fact that different doses of some drugs produce quite different physiological effects amounting even to a change of sign. That this is true of alcohol seemed to be indicated in more than one experimental investigation.

When one considers the complex chemistry of beer, there is reason for believing that its alcohol is modified and that for this reason beer with a low alcohol content is rendered nonintoxicating. Recent experiments have been conducted in this country to determine whether or not a beverage with an alcohol content of 2.75 per cent. by weight of alcohol is intoxicating. As a result, the conclusion was reached that malt beverages with an alcohol content of 2.75 per cent. by weight are not intoxicating as that term is ordinarily used, and the reasons assigned for this are in the main in accord with the work of Mellanby which you refer to. These were published in the "Hearings before the Subcommittee of the Committee of the Judiciary of the United States Senate, 66th Congress, First Session on the Bills to Prohibit the Liquor Traffic, and to Provide for the Enforcement of such Prohibition and the War Prohibition Act." Part 3. Government Printing Office Washington, D. C.

While it is, of course, true that these experiments have dealt with a limited number of subjects, and it is also true, as you state, that nowadays scientific experiments are being conducted on a national scale, it is also a fact that for some years past there has been conducted a scientific experiment on a national scale with reference to the effects of malt beverages of low alcoholic content. I refer to the people of

Norway, who are held up to us as models of righteousness, thrift and sobriety, and among whom there is sold, with practically no restrictions whatsoever, beer with an alcoholic content of 2.75 per cent. by weight.

CHARLES A. ROSEWATER, M.D., Newark, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NERVE AND SPINAL CORD COMPLICATIONS OF MALARIA

To the Editor:—What are the principal nerve or cord lesions following malarial fever. I believe I read a paper in THE JOURNAL some time ago, but I cannot recall it at present.

SAMUEL GINSBURG, M.D., Buffalo.

ANSWER.—Among the rarer complications of malarial fever which have been observed are: paraplegia, which may be due to a peripheral neuritis or to changes in the spinal cord; hemiplegia, which may occur in the pernicious comatose form or, occasionally, at the very height of a paroxysm; spinal irritation; paresis; meningitis; psychoses; aphasia; acute ataxia, and, in a few cases, symptoms of disseminated sclerosis.

REQUEST FOR MATERIAL TO AID MALARIA INVESTIGATION

To the Editor:—The undersigned would like to enter into communication with physicians who may be located in malarial districts, in reference to securing postmortem material from fatal cases of malaria, for purposes of investigation. Any aid that may be afforded us in this connection we should deeply appreciate.

C. E. SIMON, M.D.; R. W. HEGNER, PH.D., Baltimore.

School of Hygiene and Public Health, The Johns Hopkins University.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

FLORIDA: Jacksonville, March 16. Sec., Homeo. Bd., Dr. Geo. A. Davis, East Port.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New Jersey Reciprocity Report

Dr. Alexander Macalister, secretary of the New Jersey State Board of Medical Examiners, reports that 68 candidates were licensed by reciprocity and 2 candidates were licensed on presentation of a certificate from the National Board of Medical Examiners from July 3 to Nov. 8, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University	(1913)	Dist. Colum.
Chicago College of Medicine and Surgery	(1915)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1915)	Illinois
University of Louisville	(1908)	Illinois
Bowdoin Medical School	(1915)	Maine
University of Maryland	(1914)	Maine, (1917) W. Virginia

Harvard University	.....	(1899)	New Hamp.
Tufts College Medical School	.....	(1916)	Massachusetts, Vermont.
University of Michigan Homeopathic Medical School	.....	(1910)	Kentucky
Albany Medical College	.....	(1913), (1916), (1917)	New York
Columbia University	.....	(1914, 2), (1915), (1917, 2)	New York
Cornell University	.....	(1915), (1918)	New York
Fordham University	.....	(1915), (1917), (1918, 2)	New York
L. I. Coll. Hos.	.....	(1893), (1907), (1910), (1914), (1918, 2)	New York
New York Homeopathic Medical College and Flower Hospital	.....	(1902), (1914), New York, (1915), (1916)	Connecticut
.....	.....	.....	(1918, 2) New York
New York Med. Coll. and Hosp. for Women	.....	(1907)	New York
University and Bellevue Hospital Medical College	.....	.....	.....
.....	.....	(1909), (1917), (1918, 3)	New York
University of Buffalo	.....	(1915)	New York
Starling-Ohio Medical College	.....	(1908)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia	.....	(1899)	New York
.....	.....	(1906)	Penna.
Jefferson Medical College	.....	(1904) North Carolina, Pennsylvania, (1905)	Pennsylvania, (1910) North Dakota, Pennsylvania, (1911) Pennsylv.
Medico-Chirurgical College of Philadelphia	.....	(1912), (1913)	Penna.
University of Pennsylvania	.....	(1899) Georgia, Pennsylvania, (1917)	New York, (1918) New York, Pennsylvania.
Woman's Medical College of Penna.	.....	(1910), (1914)	Penna.
University of Tennessee	.....	(1917)	Tennessee
University of the South	.....	(1906)	*Philip. Isl.
Vanderbilt University	.....	(1914)	Kentucky
Baylor University	.....	(1917)	Texas
University of Vermont	.....	(1915, 2)	Vermont

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Pennsylvania	(1916), (1918)	N. B. M. Ex.
*License not verified.			

Pennsylvania July Examination

Dr. Thomas E. Finnegan, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written and practical examination held at Philadelphia and Pittsburgh, July 8-10, 1919. The examination covered 5 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 192 candidates examined, 172 passed and 20 failed. Seven candidates were licensed on Army and Navy credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
George Washington University	(1914)	1
Howard University	(1917), (1918, 3)	4
University of Louisville	(1917)	1
College of Physicians and Surgeons, Baltimore	(1915)	1
Johns Hopkins University	(1917)	1
Southern Homeo. Med. Coll., Baltimore	(1905)	1
University of Maryland	(1906), (1917, 2)	(1918) 4
Tufts College Medical School	(1914)	1
Cornell University	(1916)	1
New York Homeopathic Medical College	(1907), (1918)	2
University and Bellevue Hosp. Med. Coll.	(1916), (1917)	2
University of Buffalo	(1915)	1
Ohio State Univ. Coll. of Homeo. Med.	(1918)	1
Hahnemann Med. Coll. & Hosp. of Phila.	(1917, 4), (1918, 6)	10
Jefferson Med. Coll.	(1915, 2), (1916, 7), (1917, 11), (1918, 28)	48
Medico-Chirurgical Coll. of Philadelphia	(1916, 2)	2
Temple University	(1917, 4), (1918, 7)	11
University of Pennsylvania	(1913, 2), (1915, 2), (1916, 4), (1917, 13), (1918, 32)	53
University of Pittsburgh	(1917), (1919, 20)	21
Woman's Med. Coll. of Philadelphia	(1917), (1918)	2
Medical College of Virginia	(1914)	1
University of Toronto	(1904)	1
University of Wurzburg, Germany	(1907)	1
University of Tomsk, Siberia	(1913)	1

College	FAILED	Year Grad.	Number Licensed
Kentucky School of Medicine	(1893)	1
University of Louisville	(1917)	1
Leonard Medical School	(1904), (1906), (1907)	3
Cleveland Homeo. Medical College	(1902)	1
Ohio State University Coll. of Homeo. Med.	(1918)	1
Hahnemann Med. Coll. and Hosp. of Philadelphia	(1917)	1
Jefferson Medical College	(1918)	2
Temple University	(1918)	2
University of Pennsylvania	(1917, 2), (1918, 3)	5
University of Pittsburgh	(1917)	1
Woman's Medical College of Pennsylvania	(1918)	1
Medical College of the State of South Carolina	(1907)	1

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
University of Maryland	(1917)	U. S. Army
Jefferson Medical College	(1915), (1916), (1917)	U. S. Army
Medico-Chirurgical College of Philadelphia	(1916)	U. S. Army
University of Pennsylvania	(1915), (1916)	U. S. Army

Connecticut November Report

Dr. James E. Hair, secretary of the Connecticut Eclectic Medical Examining Board, reports that 3 candidates were licensed by reciprocity at the meeting held at New Haven, Nov. 11, 1919. The following colleges were represented.

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Kansas City College of Medicine and Surgery	(1918)	Arkansas
Eclectic Medical College of the City of New York	(1892, 2)	New York

Miscellany

THE "CRIME OF VACCINATION"

Old St. Joe Does Not Take the Antis Seriously

A few weeks ago the lady propagandist who goes over the country giving a series of talks against vaccination, was in St. Joseph, Mo. At one of the meetings various speakers attacked vaccination as a "crime" and dilated on its fearsome effects on the minds of its victims. While pausing for breath one of the speakers, mistaking a physician in the audience for the city health officer, accused him of being afraid to say anything. The physician in question was Dr. W. L. Kenney of St. Joseph, who immediately arose to the occasion. Here, according to the *St. Joseph Gazette*, is what happened:

"How many of us adults have submitted to this crime of vaccination?" he asked.

"Here, here," cries arose, and about fifty raised their hands. None were louder than the speaker who had just finished.

"How many of these have been 'crippled in the mind' by this vaccination?" Dr. Kenney then asked, smiling. In the hush that followed, the doctor said, "Thank you," and left the room.

The indignation that followed is well described by the newspaper, but can as easily be imagined. As a result, Dr. Kenney was challenged by the lady propagandist previously mentioned to debate the question of vaccination. Dr. Kenney's only reply was a statement which he gave to the *Gazette*. It is worth reproducing:

David went to his challenger with much greater confidence than I can. Who am I to match this Goliath of the anti-orthodox? I am only an oculist. But chiefly I am afraid to debate with the lady. I have lost a daily debate with one certain lady for twenty years and I know the odds are too heavy.

Besides, the crippling effect of vaccination on the mind is recalled to me every time I see that scar on my arm. It isn't fair of an unvaccinated, uncrippled antivaccinationist to pull me into a hopeless argument.

WHO HAS FOOLED THEM?

Now, if it were a question of facts and proofs instead of debate, there could be a decision rendered. But a decision has been rendered on proofs before the public for several generations, so that the man in the street, as a matter of common knowledge, knows that vaccination will check an epidemic by preventing smallpox. Millions of people for half a dozen generations and in various climes and countries have voted for compulsory vaccination. Who has fooled these millions? Why haven't the antis saved past generations? They were more active then than now, yet generation after generation votes to vaccinate the other fellow. Doctors are chumps to cut off a source of profit by preaching to the people. They prevent typhoid by vaccination, and typhoid used to be always with us. Poor business men, these doctors! However, the antis claim that mammoth trusts control the doctors, so that they are willing to lose a \$200 case of typhoid for a \$5 vaccine fee.

FEEL A PROFESSIONAL RESPONSIBILITY

Why can't the antis believe that doctors feel a professional responsibility toward humanity, and when knowledge comes to them they give it to the world? That is what the antis claim to do, so why can't they understand that others may feel the zeal of the proselyter. But the antis protest that only the compulsory feature is objectionable to them and that they favor sanitation and lots of good things.

Yes, and they favor compulsory quarantine, for they know full well no other is effective. And they favor compulsory sanitation, for who will pay for expensive sanitation except the law requires it? Even then the doctors continually campaigning for enforcement of sanitation laws—the sneaking poisoners! Why, the evil-minded trust of medical men has eradicated yellow fever, a deadly disease indeed, and malaria, too, by urging compulsory laws they have suggested. Of course, it was for dollars or else some other trust bade them do it!

OTHER COMPULSORY LAWS

Don't antis know that we must have compulsory laws to raise taxes and we have compulsory traffic laws, compulsory educational laws, compulsory Sunday laws, compulsory mili-

tary laws, compulsory prohibition laws, and compulsory monogamy laws? And each one is necessarily compulsory, too. Besides the compulsion, the antis have urged that the vaccination may transfer bovine qualities. I grant that many do bellow like a calf at the time. The antis made this claim contemporaneously with the experiments on monkeys and arm-to-arm inoculation, and corpse-monkey-calf sequence of inoculation as quoted in recent handbills of the antis.

Recent speakers also claim the transference of the following, as taken from my notes: leprosy, tuberculosis, foot-and-mouth disease, influenza, typhoid, syphilis, cancer, heart and kidney diseases. And solemnly read the assertion of an outlaw doctor that the sore on the arm is nothing else than the chancre or initial sore of syphilis. We can so easily show the germs of syphilis and the blood tests are so dependable that any anxious anti can find out positively. However, I have yet to meet a case of real honest-to-goodness syphilis that couldn't tell me confidentially the precise source.

AS TO CANCER

Now, cancer next. Oh, cancer! what chills can be thrown by thy name! But the microscope shows positively and easily what tissue is cancer and what is not. It is very hard to inoculate and remains as a local tumor at the point of inoculation. It is possible to inoculate mice with their own kind of cancer, but almost impossible to inoculate cancer into the human family.

The antis solemnly say doctors can't say what causes cancer, therefore they can't say that vaccination doesn't. Well, they can't say what causes twins, but they do say that vaccination doesn't. The antis take statistics and show that cancer and pneumonia and insanity have been on the increase since vaccination came in. Well, so have divorces! Also the high cost of living! It seems more probable that in the past cancer was not diagnosed or reported. In fact, it is hard to get diseases reported in this present century.

In all debates the burden of proof is on the one who assaults an established thing or custom. I challenge the antis to bring the one-armed veterans of the antivaccination war who reside in St. Joseph into a gigantic parade on Saturday, each squad of four carrying in their right and lonesome hands a stretcher supporting a cripple less fortunate. Let them be captained by those who *nearly* lost an arm and let the battalions be marshaled by those who had smallpox despite vaccination. Let the nurses be ladies with pock-marked faces and a banner proclaiming the advantages of scars on the faces rather than on the arm. And for a general, try to find an anti who has been vaccinated and escaped without a crippled mind. Let this army parade into the east door of the courthouse and from the north or west door I will advance with an equal number of cases of smallpox, man for man. Then let all hold up their hands who object to vaccination!

THE CAMPAIGN AGAINST VENEREAL DISEASE IN SWITZERLAND

An association to combat the spread of venereal disease was formed in French-speaking Switzerland in 1918, and in October, 1919, it launched a vigorous general campaign over the whole of this part of the country by means of numerous local committees for small sections. The local group comprises physicians, teachers, clergy, and delegates from athletic and other clubs, etc., besides the municipal authorities. Each local committee works under general direction from the headquarters at Lausanne, and material for propaganda is provided. The aim is to decentralize the work as much as possible, starting innumerable foci for propaganda throughout the country.

Lantern slides are loaned and the lectures are widely advertised on the billboards: "Social Danger of the Venereal Diseases. Free public lecture by Dr. X and Senator X." A state or municipal authority always speaks in addition to the medical speaker. Pamphlets and circulars are distributed in assemblies of men and in factories. Series of conferences are given also for the sexes separately. Public lectures have thus already been delivered, according to a writer in the *Paris Médical*, to a total of twelve at Geneva, twenty at Neuchâtel and Lausanne, and from one to five at other points.

The fact that no protests are heard against the billboard announcements shows, the writer says, that the time is ripe for this open campaign. The halls are constantly crowded.

The expense is borne by subsidies from factories, etc., donations from individuals, and state appropriations. German-speaking Switzerland has an association of its own for the purpose, but it works on the centralization system, instead of the scattered foci plan of the Lausanne headquarters.

Medicolegal

A Valid Food and Soft Drink Health Ordinance

(*City of Portland v. Traynor (Ore.)*, 183 Pac. R. 933)

The Supreme Court of Oregon, in affirming, in two cases considered together, judgments of conviction of violating Ordinance 35013 of the city, providing for the licensing of persons conducting or working in food and soft drink establishments, holds that, under its charter, the city had a legal right to adopt the ordinance. The charter also makes it the duty of the bureau of health to enforce such an ordinance, and vests it with power to make the necessary rules and regulations for its enforcement. The ordinance provides that it shall be unlawful for any person to open for business, conduct or maintain, or cause to be opened, conducted or maintained, any food establishment in the city of Portland without first securing a license therefor. If, on investigation, the proposed location is found to be suitable for a food or soft drink establishment, and in proper sanitary condition, according to the ordinances of the city and the rules and regulations of the United States with reference to plumbing, water supply, ventilation and cleanliness, the bureau of health shall issue to the applicant a permit for such establishment. The ordinance also provides that it shall be unlawful for any individual to be employed or to work in any food establishment without having first obtained a health certificate, or for any employer to hire any individual without such certificate, and it is specified that the certificate is to be renewed quarterly, and that no certificate more than three months old shall be recognized by any employer. Any person desiring to secure a certificate of health shall present himself to the bureau of health at least once every three months, and, if the person is found by the bureau to be physically fit and free from diseases that are dangerous to the public, the bureau of health shall issue to such person a certificate of health entitling such person to work in a food establishment or soft drink establishment. The term "food establishment," whenever used in the ordinance, shall mean and include every place in the city where food products are sold or offered for sale or served to the public, or manufactured, produced, concocted, prepared or cooked for the public. The term "soft drink establishment" shall be deemed to mean every place in the city where drinks are sold, manufactured or served or offered for sale to the public. The word "person" shall mean any person, firm, or corporation. To carry out the provisions of the ordinance the city was divided into seven districts, and inspectors were appointed for each. It was their duty to examine all the food and soft drink establishments in the city, to ascertain whether the owners thereof were complying with the municipal health ordinances in the construction of their buildings and sale of their merchandise, and in particular to note whether employees coming in contact with soft drinks, groceries, fruit and vegetables with their hands were healthy and free from contagious or infectious diseases. A card index system was established, and after inspection the employees were required to report to the bureau of health, and to submit to physical examination, for which, under the terms of the ordinance, a nominal charge was made. If it was found by the inspectors that the premises where the business was to be conducted were sanitary and complied with the ordinances of the city, a license was then granted to conduct the business on the payment of an annual fee. If on examination an employee was found to be free from contagious or infectious diseases, a certificate was then issued to him by the bureau of health, authorizing him to handle and sell such merchandise in bulk,

as distinguished from canned or carton goods. The defendant was engaged in conducting a grocery store in the city, and refused to obtain a license for his business. He raised constitutional questions to the validity of the ordinance, but the court holds that it was valid. The defendant's contention that the medical examiners were careless and negligent in the discharge of their duties was not supported by the evidence; but, assuming that to be true, it would go only to the administration, and not to the validity, of the ordinance, and would not be a defense to the charge against him. Nor was it for this court to say whether or not the measure should have been enacted; that was a legislative, and not a judicial, question.

Stenographer Not Able to Bind Company for Operation

(*Producers' Oil Co. v. Green (Texas)*, 212 S. W. R. 68)

The Court of Civil Appeals of Texas, in reversing a judgment for \$150 that was obtained by the plaintiff, Dr. Green, against the oil company, says that the action was brought against the corporation and one Sherman to recover the reasonable value of services rendered in the performance of a surgical operation, known as suture of the patella, on one Earp, one of the company's employees who had been injured while in its service. The plaintiff sought judgment against Sherman individually only in the event that the corporation was not held. The undisputed testimony showed that Sherman was merely a stenographer and clerk in the office of one Clayton, the latter being a general officer of the company and head of the department in which Sherman worked, the actual operation of the corporation's business being divided into departments, each having a head. The jury found, on special issues submitted to it, that Sherman, before the service was rendered, requested Dr. Green to perform the operation on Earp under statement that the company would pay him for it, and that Sherman was authorized by the company to make such request and statement. But the evidence showed that at the time he made the request and statement the company was a subscriber to the workmen's compensation act, and had provided for the insurance of all its employees thereunder, which facts were then communicated to Dr. Green; and that, aside from such authority as legally might and actually did come to him from his superior officer, Mr. Clayton, Sherman had none whatever to bind the company to pay for medical services rendered to Earp, and Mr. Clayton had turned over to him only the matter of attending to the accident report in Earp's case, and not the management of it generally. Under all the circumstances, the court concludes that the jury's finding that Sherman was authorized by the oil company to make the arrangement stated with Dr. Green had no support; that the company was not liable, and that its request for a peremptory instruction embodying that view of the law should have been given. Private corporations with the limited charter powers of operating, drilling for and producing oil, as this one was shown to be, may not become bound on the mere ipse dixit or statement of such an underling for medical services, rendered, or to be rendered, under the circumstances here presented, to another of its employees. Corporations can be bound by their agents only when acting within the scope of their authority, and those dealing with such agents are not only chargeable with notice of, but, in case of controversy, have the burden of showing, the authority assumed to have been in fact possessed. Manifestly no such burden was met in this case. Even if it had been shown that Clayton knew all that Dr. Green said occurred between himself and Sherman, and had delegated to the latter every power he himself possessed for the corporation, a majority of the court is of the opinion that it would still not have been bound; this for the reason that the company had previously provided a method of caring for such contingencies by means of, the insurance it had taken out for the benefit of its employees under the compensation act; and not even one of its general officers could substitute a different provision, or impose a liability on account of services rendered an employee, particularly in the absence of special authority from the board of directors.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Dermatological Association, Asheville, April 22-24.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

The conference met in the Congress Hotel and was called to order at 10 a. m. by Dr. Arthur Dean Bevan, Chicago, chairman of the Council on Medical Education.

Further Development of Medical Education

DR. ARTHUR DEAN BEVAN, Chicago: In calling your attention to certain tendencies and weaknesses, which I have felt should be pointed out and corrected, I do so with the feeling of optimism for what our medical schools are accomplishing and what we shall certainly accomplish within the near future. I feel strongly, however, that in developing the medical school as we are now very properly doing, as the medical department of the university, we must do so on very broad and practical lines and keep in mind the interests of the patient, of the profession, and the community and remember that medicine is not only a science but also an art.

At present in this country we are in a condition in which the professor in anatomy, physiology and the other laboratory branches and the laboratory worker in clinical medicine have been given too large a part in the task of reorganizing the university medical schools and in developing the medical curriculum. This tendency should be corrected. We should keep constantly in mind the fact that the first and highest duty of the medical school is to train competent practitioners of medicine, and this cannot be done by the college professor of embryology and comparative anatomy, or by the chemist working in a clinical laboratory or by the research worker in some isolated medical institute. These men are not competent to develop and control medical education along sound lines. Yet, that is unfortunately the tendency of the time. This problem should be met by placing the control of medical education where it belongs, in the hands of medical men.

First, we should insist that the teachers of the laboratory branches shall have a medical training, a medical point of view; that they keep in touch with the medical profession and the art and science of medicine, and that they realize that their first duty is to assist in training practitioners of medicine.

Secondly, we should insist that the teachers of the clinical branches shall have a broad training in both the science and the art of medicine; that they be great clinicians in their special fields, and that they be trained to understand not only what the medical student needs to know in their particular specialty, but also what anatomy and physiology, pathology and pharmacology the student needs to acquire to become

an expert practitioner in any particular field. Such teachers would bring about a better correlation of the clinical and laboratory branches. Fortunately, in the last twenty years, we have trained many such men in this country. There is an abundance of high class, well trained men to fill the places of the clinical teachers required.

The back bone of a medical faculty should consist of the professors of medicine, surgery, obstetrics and pathology. Such a group should control a teaching hospital and outpatient department, with adequate clinical and pathologic material and well equipped laboratories. The plant should be located where it can secure ample clinical material with little or no cost to the medical school. The affiliation of a large municipal, state or sectarian hospital with a medical school would be of mutual benefit, not only to the hospital and medical school but also to the community in which they are located.

The laboratory branches in medicine are important, but a medical school is a school to train physicians and not anatomists or physiologists. If the training of physicians is well done it will frequently result in training teachers and research workers at the same time as important and desirable by-products.

THE FINANCIAL SIDE OF MEDICAL EDUCATION

Many plans are now being developed apparently without any consideration of the cost of medical education. Fees of students average about \$150 a year, and the cost of a medical education is about \$450, and in many institutions \$1,000 or more, and is still mounting. The cost of running a hospital for medical teaching should never be charged to the medical school. It is not in the interest of the community for a medical school to create and maintain a hospital primarily for the teaching of medicine. The first purpose of a hospital is to take proper medical care of patients, and this function is best performed if it also fulfils the functions of medical teaching and medical research. The great municipal, state and sectarian hospitals should be placed at the disposal of our medical schools for teaching and research.

A state hospital in Iowa, operated primarily for the purpose of furnishing the best medical care to the people of the state, is very properly placed under the control of the State University of Iowa, and becomes the teaching hospital of the medical school. The Iowa plan has been well thought out and is so sound that many of our older medical schools might adopt it with profit to themselves.

The much discussed plan of all-time clinical teachers is a very costly one. It is so extravagant that it cannot be generally adopted by the medical schools of the country. Unless it has unlimited resources, a medical school should not consider the plan at all. Even a school with large resources can secure better results by adopting the more practical part-time plan for its clinical teaching. The all-time clinical teacher scheme has proved to be exceedingly costly; it is also exceedingly difficult to secure the most desired men with the restrictions that at once exclude the holder from the rewards of professional work well done. The all-time plan is an experiment that should be tried out in a few schools that can obtain the large endowments necessary.

The majority of medical schools should adopt the part-time plan. The teachers in the clinical departments should receive the same salaries as the professors in the other departments in the university, and should be required to devote the necessary amount of time to their positions. The college should insist, however, that their clinicians maintain positions as great clinicians and keep in contact with both the medical profession and the community. The clinician should be provided with a limited number of private beds in the hospital, and to these his private work should be limited. If the professor abuses his privileges, the university authorities should correct or eliminate him.

GRADUATE MEDICAL EDUCATION

There is a growing demand for graduate instruction in medicine which must be met by the universities of the country. Fifteen or twenty universities are so situated that they could establish satisfactory graduate medical schools.

The plan proposed includes the following propositions:

1. A complete and separate department for graduate work should be established. Certain men might work in both undergraduate and graduate departments, and certain laboratories and hospitals might be used in common; but in order to develop a graduate department of the best type, a complete separate faculty and plant is required.

2. This graduate school of medicine should furnish instruction of various kinds, as follows:

(a) For recent graduates who have completed their hospital internship and who desire to specialize in some clinical or laboratory field, a course of three years should be provided in a well organized clinic, where each assistant would be an essential part of the machinery, where he does clinical work, teaching and research work, and is given a real opportunity and responsibility in the handling of patients. At the end of such a three years of training, the assistant would be competent, in the absence of his superior, to conduct the clinic. At the end of such a course the student should be given a degree, Master of Science in Surgery, Ophthalmology, etc., or, if the assistant has taken a three-year course in a laboratory branch, a degree of Doctor of Philosophy, in Anatomy, Pathology, etc.

(b) For physicians who have been practicing for three or more years, a concentrated course of one to one and a half years should be provided in the clinical branches, leading to the same degree as granted to the men in the preceding group.

(c) A well planned course of from three to six months should be provided, in which practitioners could take special and thorough work in some limited field. For this they should receive no degree, but they might possibly be given letters stating that they have taken such a special course:

(d) There should be courses in which practitioners can brush up on several subjects, selecting their own subjects, the amount of time they devote being optional but ranging from a month to six weeks. This will numerically be probably the largest group. These practitioner courses are on the whole of great value to the medical profession and to the community. Of course, no degree or statement of attendance of any kind should be given for this work.

3. Courses should be provided for general practitioners who live near enough to the medical school to come once or twice a week to some clinical or laboratory course on some special subject.

Improvements in Medical Education in Sixteen Years

DR. N. P. COLWELL, Chicago: About forty of the 162 medical schools existing in 1906 were without laboratories and without clinical material. Nevertheless, in 1907 these institutions turned out from twelve to 105 graduates. Now most of the medical schools have five or more well equipped laboratories, and there is not one which does not have at least three laboratories. As to clinical material, most medical colleges now actually own or control a teaching hospital,

and there is not one which does not have relationship with a hospital in which at least amphitheater clinics can be held.

Methods of clinical teaching have been greatly improved. Formerly the amphitheater clinic largely prevailed in which the professor gave a lecture-clinic, or performed an operation before a large body of students. This has given way to the smaller group clinics at the patient's bedside. Patients are now regularly assigned to senior students, who write the histories, make the physical and laboratory examinations and suggest the diagnosis and treatment.

Since 1904 the proportion of medical schools requiring any college work for admission increased from only four, or less than 3 per cent., of the 160 medical colleges, to seventy-nine, or 92 per cent., of the eighty-five colleges now existing. All but one of the medical schools require that the premedical work be taken in a college of arts and science. (See Chart 1.)

The advantages in requiring that the premedical work be taken in approved colleges of arts and sciences are:

1. The physics, chemistry and biology are taught without reference to their special bearing on medicine. It is not known today what particular facts obtained in the study of these sciences will be most useful in the medical research of tomorrow.

2. The quality of the premedical work is assured since it is carried in the courses leading to the degree of Bachelor of Science in reputable colleges of arts and sciences. This provides also a satisfactory standard for measuring the value of irregular or so-called "equivalent" courses.

3. The student is free to make a final choice of his life work until he is best qualified to do so. He enters the classes leading to the Science degree; he has a chance to compare notes with those studying for other callings, and may find that some other line of endeavor appeals to him more than medicine. If

so, he can make the change without any loss of time, since his premedical courses are equally acceptable for admission to other departments. This freedom of choice is of great importance to the students, since from 10 to 30 per cent. change to some other calling before their two-year course is completed.

4. Students now enter medical schools with the benefit of two years in the college atmosphere, the contact with students in other departments, the social life, and the athletics, which are bound to influence their entire lives.

5. The arrangement is a safeguard against medical cults. It is seldom that a student who has studied genuine science in his courses in physics, chemistry and biology will be misled by the fallacious claims advanced by unscientific cults.

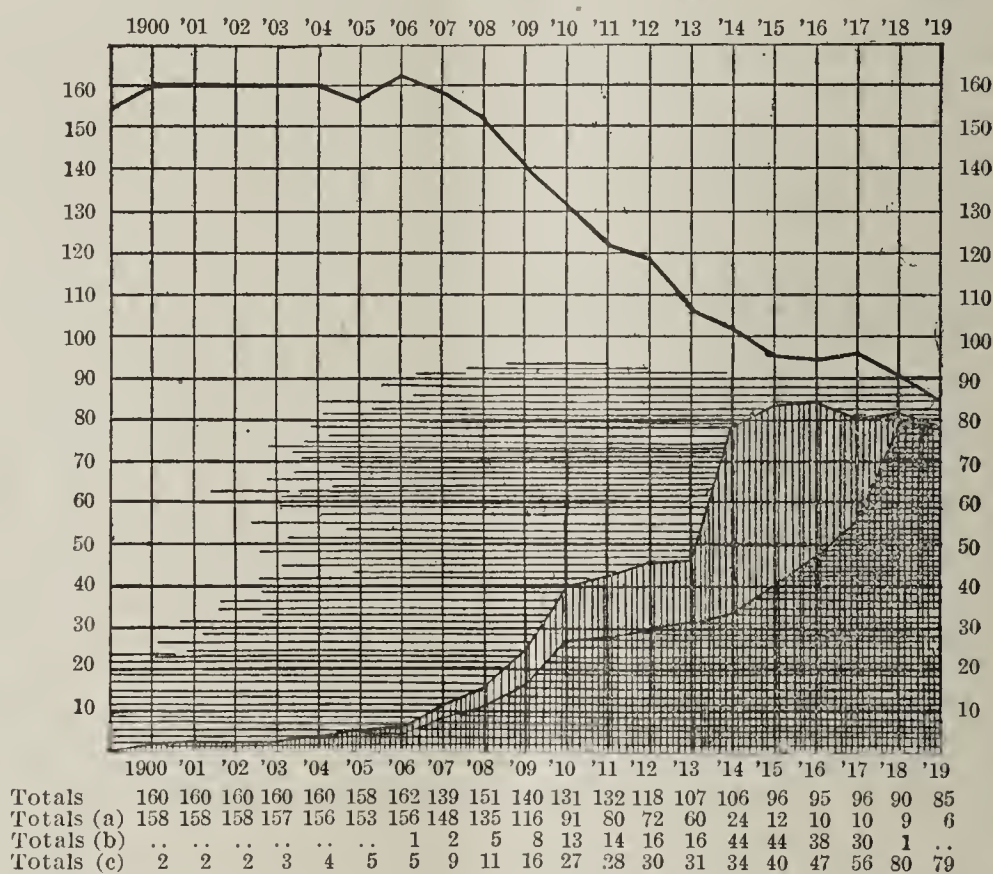
The one disadvantage of the arrangement is the lack of uniformity in the courses in physics, chemistry and biology given in different colleges or universities. This disadvantage will be corrected through the plan to secure more uniformity.

NO DEARTH OF MEDICAL STUDENTS

Early in the campaign for higher requirements of preliminary education, some feared that medical schools would

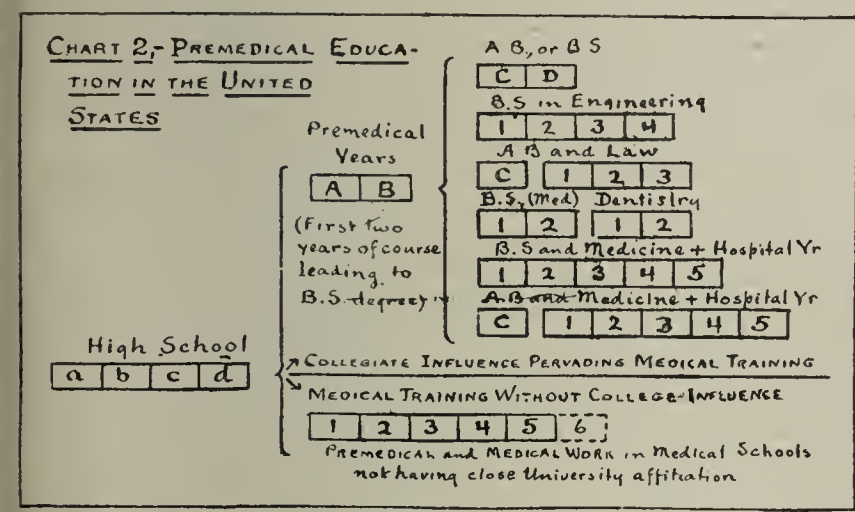
CHART 1.—MEDICAL SCHOOLS AND ENTRANCE REQUIREMENTS

The heavy line at the top shows the total numbers of medical schools existing in the various years. The horizontal shading (indefinite) shows those requiring for admission a four-year high school education; the vertical shading those requiring one year of college work and the heavy shading those requiring two years of college work.



Figures show (a) those requiring for admission a high school education or less; (b) those requiring one year of college work; (c) those requiring two or more years of college work.

be unable to secure students. A reduced enrolment in the first session naturally followed the adoption of the higher requirement; but in subsequent sessions, in all the better medical schools, enrolments have returned to normal proportions.



This chart shows (a) that the student is under the influence of college life and atmosphere during his two premedical college years; (b) that he is not required to make a final decision in regard to his life work until he has finished all premedical work, and (c) that at any time he can change to some other calling without difficulty.

LIMITATION OF ENROLMENTS

The limitation of enrolments by medical schools and reports of excessive numbers of premedical students have caused some alarm lest medical schools may not be able in future to admit all the well qualified students who apply. An investigation shows that the sixteen Class A medical schools which have limited their enrolments can care for 4,559 students. Thirty-nine medical schools report that their highest capacity with efficiency of teaching would enable them to care for 9,061 students. An estimate based on the inspection of thirteen other medical schools shows they can enroll and properly train about 1,810 students. The sixty-eight medical schools in Class A, therefore, can enroll without overcrowding 15,430 medical students or approximately 2,000 more than are at present enrolled in the eighty-five medical schools of the United States. By the addition of more teachers; or by the enlargement of laboratories, or by the completion of college buildings being planned or already in course of construction, the numbers of medical students who

CHART 3.—CAPACITY OF MEDICAL SCHOOLS UNDER LIMITED ENROLMENTS

Medical Colleges	No. Colleges	Total Enrolment				Average Enrolment per College
		1st Yr.	2d Yr.	3d Yr.	4th Yr.	
Enrolments limited.....	16	1,136	1,121	1,151	1,151	4,559
Report highest capacity with efficiency:						
4-year colleges.....	31	2,222	2,109	2,063	2,056	8,450
2-year colleges.....	8	307	304	.....	.....	611
Estimated highest capacity with efficiency:						
4-year colleges.....	10	430	430	410	410	1,680
2-year colleges.....	3	65	65	.....	.....	130
Totals, Class A colleges....	68	4,160	4,029	3,624	3,617	15,430
Class B colleges:						
Capacity reported.....	5	240	240	240	240	960
Capacity estimated.....	5	135	135	140	140	550
Totals, Class B colleges....	10	375	375	380	380	1,510
Totals, A and B Colleges..	78	4,535	4,404	4,004	3,997	16,940

can be satisfactorily taught could be further increased to 17,000 or 18,000 students. The existing medical schools, therefore, are more than adequate to meet present needs and in future as the numbers of students may increase, ample provision can be made for them. There is a real demand for medical graduates to serve as interns in hospitals, but this demand could not be met even if the number of medical colleges and the number of grad-

uates annually should be doubled or trebled. The intern problem requires some other remedy: (a) The internship might be extended to eighteen months or two years, by which the annual output of graduates would supply about twice as many hospitals. (b) The hospitals might employ recent graduates to remain for several years as resident physicians or surgeons. (c) Hospital assistants or nurses might be trained to do much of the work now devolving on the intern. (d) The situation is relieved in some hospitals by the employment of stenographers who, at the time the patients are examined, take down histories from dictation by the members of the attending staff.

The Needs and Future of Medical Education; Ideals and Their Function in Medical Education

GEORGE E. VINCENT, President of the Rockefeller Foundation, New York: In order to measure achievement and to guide progress, there is need of ideals or standards. Without tests there is danger that opportunism, provincialism, even a narrow nationalism, will prevent the development of medical education on a broad, international basis. In human institutions there are no absolute standards. The highest ideal may be approximated in a few medical schools in which methods may be tested and leaders trained, but it would be a serious mistake not to recognize various degrees of achievement. The influence of local conditions, the possibilities of economic support, and relations with other university units must be taken into account. All that can be confidently affirmed is that some institutions fall below any standard that can be recognized as guaranteeing results which will safeguard the public and protect the profession. The number of such schools in the United States grows steadily smaller.

There is danger that the existence of a standard may force a formal rather than a real compliance with ideals. A premature effort to conform to an accepted standard may do positive harm. For example, there is reason to believe that in the case of medical schools in the South, where high school systems have had to be developed within a brief period, there has been an overstimulation of secondary and college education; that three-year high schools have changed to a four-year curriculum with little or no additional resources or increases in numbers and efficiency of teaching staff, and that colleges have offered courses which they are not prepared to give efficiently. Moreover, the Class A of the American Medical Association, having been accepted by state boards of medical examiners and thus become a part of the official machinery has been extended in such a way as to produce serious anomalies. These will doubtless be largely removed as a result of the new survey which has recently been completed.

One of the ideals of modern medical teaching which needs constant emphasis is the provision of the best type of medical care for the sick. Laboratory and clinical methods must be thought of as a protection to the patient. Careful diagnosis, resourceful treatment, constant watchfulness are sources of safety and hope to those who come under the care of a modern university hospital. The prestige of the clinical teachers who are in charge is always at stake. The mutual scrutiny of members of the teaching staff, and the alertness of students, together with unremitting search for new truth and its application to disease, make the teaching hospital the best place for the sick.

In medical education, the relation of the laboratory and clinical years is organic. The antithesis which is often set up between these two aspects of medical education is most unfortunate. In the first and second years, the chief emphasis is laid on work in the laboratories; but this training ought to be extended right into the clinical phases of the curriculum. While it will usually happen that laboratory teachers will be graduates in medicine, many able laboratory men without the M.D. degree have demonstrated their capacity to develop cooperative and sympathetic team-work with clinical departments.

As to the hospital, it is recognized that effective teaching can be secured only in an institution which is under the

complete control of the medical school. The devices of clinical clerkships, the individual responsibility of students, close relations between bedside and laboratory, the proper organization of the teaching staff, permanence of tenure, team-work, necropsy conferences, and case conferences with physicians and social service workers are all factors in the development of clinical training of the right type.

In spite of the overcrowding to which reference has been made, there is an increasing demand for the introduction in undergraduate teaching of such subjects as preventive medicine, psychiatry, institutional administration, and some knowledge of social amelioration through clinics, popular education, improved housing, better food, recreation, and the development of community responsibility. The introduction of medical sociology in the premedical course would be of distinct value.

Judged by the criteria which are suggested in this paper, existing medical schools fitting the present need fall into two general groups:

1. University centers for teaching and investigation. The chief characteristics of these institutions are: broad and thorough preparation; limitation of numbers in proportion to faculties and staff; well rounded laboratory equipment with professional teaching corps; complete control of adequate hospital and dispensary facilities with vocational leadership in the clinical departments, which include the chief specialties; practitioner or avocational clinical teachers organized systemically into a unified staff; geographic concentration of all phases of plant and instruction; laboratories and clinics in close relations of cooperation and interdependence; research a conscious purpose; facilities for graduate study.

2. Training centers, parts of academic institutions. Two-year college requirement; limitation of numbers; fundamental laboratory facilities with professional teachers; control of appointments to hospital and dispensary staff; practitioner clinical teachers well organized in long service periods; assisted by full-time resident and other assistants; concentration of buildings and work; cooperation between laboratories and clinics; some opportunity for research by staff members.

As to the policy of the General Education Board and the Rockefeller Foundation with regard to assistance to medical education, it may be said that there is no one, inflexible type of organization which it is proposed to suggest to all institutions. Aid has been given and will continue to be given to a few centers of the higher type, but assistance is also being considered with respect to a number of institutions less highly developed. The General Education Board cooperates with medical schools in the United States, while to the Rockefeller Foundation falls the opportunity to work with medical centers in Canada and in other countries.

DISCUSSION

DR. RAY LYMAN WILBUR, President, Leland Stanford Junior University, Stanford University, Calif.: Medical education is characterized in that it must be built up around a close personal relationship between the physician and the patient. In addition to the laboratory, the library and the lecture room, it requires for its development a whole group of social agencies including the hospital and the clinic. Consequently, the medical school is unique among university departments in the immediate service rendered in the solution of the day to day physical problems of the individual and of society. The whole essence of clinical teaching is to bring together the teacher, the patient, the nurse and the student in an environment most favorable for all of them. The future of medical education depends largely on the way this environment is financed and controlled. The union of the four elements is inevitable. Society, with its heavy burden of suffering, will insist on this in some form or another.

We put tens of thousands of the mentally sick into great isolated institutions, largely without medical students or training schools for nurses. Through competent administrators we care for them reasonably well, but we have learned and are learning but little of mental disease. The ignorance of the average medical man of psychology and

psychiatry is painful. Every such hospital should be a live optimistic center for study and not a pen for the lingering care of the hopeless or semihopeless. We cannot think of medical education in the future without bringing the stimulus of the student to all such hospitals, and likewise bringing one such hospital into the closest of contact with every university medical school. Perhaps with the establishment of such conditions we can gradually place the decisions on the questions of mental conditions in the hands of physicians instead of in those of untrained judges and emotional juries.

No city with a population of half a million will rest content until its medical men have at their disposal suitable hospital and other facilities for superior medical care. It is also inevitable that there will be some medical instruction wherever good medical work is done. The master in medicine needs students as much as they need a master. This does not mean a medical school in every city, but it does mean at least teaching hospitals for interns and the physicians of the neighborhood and good training schools for nurses—in other words, an educational center of prime value to the community.

Community welfare depends on the engineer and the physician more than on the politician. No physician or nurse can do his or her duty in the ordinary professional routine without training in disease from the community or public health standpoint. Every medical center, be it hospital, clinic or medical school, cannot be complete unless it offers such opportunity.

During the period immediately before us, no greater disaster could come to medical education than to have it and all of its necessary accessories fall completely into the hands of the state. The glory of American education lies in the bold initiative of such institutions as Harvard and Johns Hopkins. Picture medicine in America today had there been no Johns Hopkins, Harvard, Physicians and Surgeons of New York, or University of Pennsylvania to lead the way, so that legislatures could be stimulated to vote the money for the medical schools that have developed around the state universities. We may look ahead to a democratic state with governing bodies and a public wise enough to provide leadership in medicine; but for several generations we cannot safely trust the future of medical education with all of its needed accessories to the chances of politics.

The safety of the state university medical schools will come from the active presence of those independently endowed setting the standards in various parts of the Union. The greater burden, though, of medical education must fall on state or city controlled hospitals and universities. Through them the public will gradually learn to do its full duty in medical teaching, and in the care of patients and in research, as it is learning to spend its money to get back the return in increased production that has come from the agricultural schools.

CHARLES F. THWING, President, Western Reserve University, Cleveland: If we define education as the power to think, I think that we have a right to define medical education as the power to think in terms of medicine. I think we also have a right to say that legal education is the power to think in terms of law, both common and statute. To think is not to know simply, but it is to assess and relate knowledge. It is to know and relate fact to fact, and from fact to infer new facts. To think in terms of medicine is to think in terms of diagnosis, or understanding, of the proper evaluation of symptoms or the result of observation, each result related to every other; to assess the result of the thinking in terms of therapeutics and in terms of prognosis.

Every year at the faculty meeting in June we in Western Reserve University have this fact to contend with. We are now graduating our students at 27½ years of age. Can we get these men into the medical profession at an earlier day? We can if we will adopt the proper means; and the means lies away back of the high school; it lies in the grammar school or the grades. Boys and girls ought to enter the high school at the age of 12 and not of 14. The only way to secure that result, in my humble opinion, is not a change in the curriculum of the grammar school, but a change in the

advancing power to teach in these grammar schools; that power of advanced teaching lies in the smaller schools, the worth of the teacher lies in the element of cost, and the cost lies in the purse of the man who pays taxes. American communities ought to assess twice the present assessment in the improvement of the schools for boys and girls before the age of 12, and American communities I think are willing to do that, provided they be assured that the money is spent effectively. We are always glad to pay money in taxes for education if only the education be good. France has proved to us that their boys of 12 are as far advanced intellectually as boys of 14 in America, by reason largely of improved teaching before that age. It may be well for us in the medical school to persuade men of rather unique power to continue their education far beyond the graduation period. There are men known to every teacher who hold forth great promise. Those men should be encouraged to stay and become shepherds for the communities.

SURGEON-GENERAL WILLIAM C. BRAISTED, Washington, D. C.: We are deeply interested in the subject of medical education. We have had magnificent institutions, with full staffs of the finest type of men from the Reserve Corps. We have had perhaps the best the colleges could give us to carry on our work during the war. I feel a great degree of comfort and satisfaction in having that type of men; with the end of the war, however, we should not desist, but try to reestablish and maintain the splendid organization we had during the war. To do that we shall have to educate as quickly as possible young men for the positions of specialists. The organization I am trying to maintain is something like this: There should be an extensive laboratory. There should be specialists in operative surgery, eye, ear, nose and throat; there should be a psychiatrist, a roentgen-ray man, and the like. What I am trying to do is to have all these specialists associated and work together. For instance, in the Washington Hospital, Admiral Stitt is not only a very fine laboratory man, but one of the finest diagnosticians we have. The time has come when we in our premedical institutions should select or cull men of particular worth for work of a particular character.

SURGEON-GENERAL M. W. IRELAND, Washington, D. C.: Medical education is of the greatest importance to us. Very early in the history of the Medical Department of the Army the Surgeon-General called attention in his annual report to the better class of men we were getting. Away back in 1840, the Medical Department of the Army had something to do in creating a better and higher standard for students who were studying medicine. In the last twenty years, medical men have been coming into the Medical Department of the Army at the average age of 28. They should enter earlier in life. In many of our army hospitals we can now give good training in diseases of women and children, as well as in the other departments of medicine. We will take men from medical colleges and give them certain compensation in addition to their upkeep while in the hospital. That is the proposition we have to present to young graduates in medicine who come into the Medical Department of the Army to complete their hospital experience.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: Dr. Bevan, if I understood him correctly, spoke rather slightly of the showing that the civilian medical profession made in the war, particularly the laboratory men. I am not going to say a word about what the clinicians did in the war. When Surgeon-General Gorgas wanted me to formulate rules for the sterilization of water in all camps in the army, to whom could I turn? I summoned three men to Washington—Whipple, Sedgwick and Phelps, not medical men but laboratory men—men skilled in preventive medicine. I do not believe any one of them has a medical degree. These men formulated rules and gave details for the sterilization of water in all the camps and in all the field hospitals. It was done in three days. The chlorination of water was decided on.

We are building a hospital now in Ann Arbor that will have 800 beds; but this is a relatively small part of the hospital. Most of it will consist of laboratories for professors

of bacteriology, pathology, clinical medicine, scientific medicine, chemistry, etc. There is no one who has greater admiration for the surgeon and the clinician than I have, but it does seem to me that we overlook sometimes the valuable services rendered by the laboratory men to the surgeon and clinician. The pathologist, the chemist and the bacteriologist are just as important in their respective fields as the man who gives medicine or uses the knife.

DR. H. GIDEON WELLS, Chicago: I have been authorized to read into the minutes of this joint conference the resolutions passed by the National Research Council, composed of both clinicians and laboratory men:

WHEREAS, A committee composed of Drs. Erlanger, Jackson, Lusk, Thayer and Vaughan appointed by the Division of Medical Sciences of the National Research Council to study the situation in regard to the supply of assistants in preclinical departments have made a thorough study of conditions in the medical schools of the country and submitted a report setting forth existing conditions and analyzing suggestions as to improvements; and

WHEREAS, This study shows that there is a serious scarcity of men of proper caliber for assistants in preclinical sciences seeking such positions; be it

Resolved, By the Division of Medical Sciences of the National Research Council:

1. That this deficiency in assistants constitutes a very serious menace to medical education because not alone are there insufficient assistants for the present needs of instruction in the preclinical sciences, but the deficiency of the present inevitably must result in an inadequate number of men qualified for higher positions in the preclinical sciences and a consequent deterioration in these departments in a very few years.

2. That since the clinical departments are in many ways dependent for their efficiency on the instruction afforded and the investigation conducted in the preclinical sciences, deterioration in the preclinical sciences will result in deterioration in the clinical departments.

3. That since these conditions enumerated under 1 and 2 exist, it is very essential that steps be taken to provide for a more satisfactory supply of assistants in the preclinical sciences.

4. That since directly or indirectly the remedy for these conditions depends to a large degree on increased budgets for salaries for assistants, instructors, assistant professors and professors, technicians and supplies, it is highly important that funds be secured for these purposes to prevent deterioration in the entire structure of medical education.

5. That, since this need for funds for the preclinical sciences seems so pressing, the larger proportion of funds available for developing medical education should be applied to the preclinical rather than to the clinical departments of the medical schools for the present and until such time as a more satisfactory situation is obtained in the preclinical sciences.

DR. LOUIS B. WILSON, Rochester, Minn.: I should like the privilege of supporting these recommendations of the Council on Medical Research. Since Jan. 1, 1919, I have had 1,121 applications for fellowships in the Mayo Foundation. Four were for work in the fundamental sciences. This is not the general ratio. So far as we can determine, there are in the United States today not one-fourth as many young men engaged in laboratory work as there should be to fill the places which are now vacant.

DR. GEORGE M. KOBER, Washington, D. C.: We are all proud of the achievements in scientific medicine in the United States which have been brought about very largely through experimentation on the lower animals in determining the causes, prevention and treatment of disease. A bill has been introduced in Congress, known as Senate Bill 1258, and in connection therewith I wish to present the following for adoption:

The Annual Congress on Medical Education, composed of the Council on Medical Education of the American Medical Association, the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States, has learned with regret that serious efforts are being made to enact Senate Bill 1258, "A bill to prohibit experiments upon living dogs in the District of Columbia and in any of the Territorial or Insular Possessions of the United States."

The highest aim of scientific medicine is the eradication of preventable diseases. The average span of life in the United States has been lengthened fully eight years during the past twenty-five years, largely the result of animal experimentation in the study of the causes, prevention and treatment of communicable diseases.

A careful examination of the law now in force in the District of Columbia shows that the provisions of the current law are ample and sufficient to prevent cruelty to animals, and since the enactment of the bill would be the death knell to the progress of scientific medicine, this congress respectfully but earnestly protests against its enactment as unnecessary legislation and detrimental to the best interests of the human family, and to animal husbandry.

The resolution was put to a vote and adopted unanimously.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

December, 1919, 6, No. 12

- Roentgenologic Study of Metastatic Malignancy of Bones. A. B. Moore, Rochester.—p. 589.
Case of Myxochondrosarcoma of Femur. A. Cotton and S. McCleary, Baltimore.—p. 594.
*Dislocation of Innominate Bone. J. T. Murphy, Toledo.—p. 601.
Arithmetical Computation of Roentgen Dosage. G. M. MacKee, New York.—p. 602.
Treatment of Diseases of Thyroid; So-Called Hyperthyroidism. J. A. Lichty, Pittsburgh.—p. 608.
Treatment of Goiter by Radiation. R. H. Boggs, Pittsburgh.—p. 613.
*Early Roentgen-Ray Diagnosis of Ulcerative Tuberculous Colitis. L. Brown and H. L. Sampson, Trudeau, N. Y.—p. 625.
Teleroentgenography of Head. P. M. Hickey, Detroit.—p. 641.
Safety Device for Roentgen Ray Tubes. G. C. Johnston, Pittsburgh.—p. 643.
Multiple Myeloma of Bones. W. A. Evans, Detroit.—p. 646.

Dislocation of Innominate Bone.—A boy, aged 6 years, fell from the seat of a farm wagon loaded with 3,200 pounds of coal, and the front wheels passed over his abdomen. Shock and prostration were marked. The patient could not be moved for ten days. The leg was flexed and the foot was everted. A large hematoma covered the entire lumbar region. The roentgen rays revealed a dislocation of the left innominate bone. Attempted reduction failed; fixation in plaster for three weeks brought about recovery with normal function.

Early Roentgen-Ray Diagnosis of Ulcerative Tuberculous Colitis.—While in many cases of ulcerative tuberculous colitis a positive diagnosis by clinical or laboratory methods cannot be made, Brown and Sampson claim that the roentgenologic method has enabled them to make a diagnosis positively in many cases in which otherwise the diagnosis would have remained uncertain. The roentgenologic diagnostic criteria are filling defects and hypermotility.

Archives of Internal Medicine, Chicago

Feb. 16, 1920, 25, No. 2

- *Study of Colloidal Gold Reaction and Its Clinical Interpretation. M. Warwick and C. E. Nixon, Minneapolis.—p. 119.
Analysis of Spread of Excitation Wave in Human Ventricle. G. Fahr, Madison, Wis.—p. 146.
*Yellow Fever Observations Made in Guayaquil, Ecuador, in 1918. C. A. Elliott, Chicago.—p. 174.
*Pericarditis with Effusion. An Experimental Study. C. S. Williamson, Chicago.—p. 206.

Study of Colloidal Gold Reaction and Its Clinical Interpretation.—While Warwick and Nixon believe that the colloidal gold test is the most delicate of the routine spinal fluid reactions, it does not replace any other test but, on the other hand, is of independent value. It is of especial importance in the early diagnosis of neurosyphilis. A colloidal gold curve may be obtained with or without other positive findings after provocative treatment. It does not parallel clinical signs nor give definite evidence of improvement under treatment. Patients with no involvement of the central nervous system, or who are nonsyphilitic, give no colloidal gold curve. Clear cut clinical cases of tabes dorsalis may show all the spinal fluid reactions negative both before and after treatment. A curve in Zone III, with a negative cell count and negative or faintly positive globulin, is strongly suggestive of a brain or cord tumor or myelitis. Curves in Zones I and II may be found in nonsyphilitic conditions, such as multiple sclerosis and brain abscess. A cell count above five is pathologic, but the cell count is of no value in indicating duration or severity of the process or improvement. The authors recommend that this reaction should be included in every spinal fluid analysis and neurologic examination as well as in all cases of general syphilis.

Yellow Fever in Guayaquil, Ecuador, in 1918.—The clinical and pathologic findings are summarized by Elliott from a study of about seventy cases of yellow fever observed in Guayaquil, Ecuador, during the summer of 1918. Clinically, yellow fever is similar to infectious jaundice. The differ-

ences existing between the two diseases appear to be chiefly those of degree. There is more marked jaundice and less hemorrhage in yellow fever than in infectious jaundice. Although hemorrhage is a usual occurrence in all severe cases, yellow fever is not a true hemorrhagic disease. The hemorrhage apparently follows necrosis of parenchymatous tissues and endothelial cells. The jaundice of yellow fever appears to be of a nontoxic dissociated, hepatic (suppression) type. Death appears to be due to uremia. It is usually preceded by anuria. There is an intense degeneration of the epithelium of the convoluted tubules. The glomeruli and collecting tubes remain relatively free from degeneration. Convalescence in all patients who survive is prompt. The complete restitution of all organs to normal is remarkable. No evidences of impaired liver or kidney function remained in the cases studied, although Elliott says that intense parenchymatous changes must have occurred. Many cases are analyzed.

Pericarditis with Effusion.—By means of experimental research, Williamson found that in pericardial effusion the fluid accumulates first along the lower margin of the heart and about the apex, particularly on the diaphragmatic surface of the heart. With small effusions, this is the only place in which fluid accumulates with regularity. The result of the accumulation of the fluid in this position is to push down the left lobe of the liver. This was demonstrable in practically every case, and in many cases it was a very conspicuous feature. Special stress should be laid on this as an early diagnostic sign. The second place in which fluid accumulates is over the great vessels at the base. With small effusions it is occasionally present in sufficient amount to be detected by percussion. With medium sized effusions this layer is generally thick enough to be demonstrable by percussion, and this retrosternal dullness is an important diagnostic sign. With both small and medium sized exudates Williamson was unable satisfactorily to demonstrate percussion dullness in the fifth right interspace (Rotch), nor could a rounding of the cardiohepatic (Ebstein) angle be made out in a single case. The behavior of the fluid is practically independent of the position of the patient. In at least fourteen of the thirty-three cases studied the anterior surface of the heart, in spite of the exudate, remained, in part, uncovered by the fluid so that a pericardial friction rub could readily exist. This pericardial rub is to be anticipated in cases in which the heart is relatively large, so that it fills out the space between the vertebral column and the sternum. From the standpoint of the most readily reached small amounts of fluid, the most appropriate sites for puncture are either just outside the apex or in the chondroxyphoid angle.

Boston Medical and Surgical Journal

Feb. 26, 1920, 182, No. 9

- Surgery of Genito-Urinary Tract Observed at Base Section 2, France. R. F. O'Neill, Boston.—p. 213.
Mental Factor in Chronic Intestinal Invalid. J. Bryant, Boston.—p. 219.
Specific Diagnosis and Treatment of Acute Lobar Pneumonia. L. H. Spooner, Boston.—p. 224.

Canadian Medical Association Journal, Toronto

February, 1920, 10, No. 2

- Focal Infections; Ileal and Colonic Stasis. G. E. Armstrong, Montreal.—p. 106.
Chronic Intestinal Stasis. D. T. Smith, Ottawa.—p. 111.
*Winnipeg Epidemic of Lethargic Encephalitis. W. Boyd, Winnipeg.—p. 117.
Obstetric Paralysis. J. W. Sever, Boston.—p. 141.
Treatment of Empyema in Lobar Pneumonia by Early Aspiration. T. McCrac, Philadelphia.—p. 162.
Blood Transfusion. C. K. P. Henry, Montreal.—p. 166.
Cases of Syphilitic Aortic Insufficiency and Cerebrospinal Fever Supervening on (?) Erythema Nodosum. J. C. Meakins, Montreal.—p. 179.
System in Care of Sick. R. D. Rudolf, Toronto.—p. 185.

Winnipeg Epidemic of Lethargic Encephalitis.—In the Winnipeg epidemic of sixty cases there were twenty-three deaths, a mortality of 38 per cent. The characteristic case presented fever, drowsiness, strabismus, ptosis, diplopia, tinnitus, some degree of facial weakness, constipation and,

perhaps, some urinary and spinal fluid changes. The fleeting nature of the disturbances was very typical. Sensory disturbances were present in a number of cases. Some of the cases were atypical, suggesting cerebral tumor, apoplexy and other brain lesions. The brain was examined in eighteen cases, and showed marked congestion, perivascular infiltration with lymphocytes and plasma cells, and occasionally hemorrhage. Degeneration of the nerve cells was variable. The changes were most marked in the midbrain. Marked lesions were also found in the kidneys. A remarkable epidemic of hiccup occurred in Winnipeg at the same time as the outbreak of encephalitis.

Colorado Medicine, Denver

February, 1920, 17, No. 2

- Empyema at Camp Kearney During Recent Epidemic of Influenza. T. E. Bailly, J. R. Arneill, A. S. Granger, L. Shulman and F. E. Smith, M. C., U. S. Army.—p. 30.
Diagnosis of Empyema. J. N. Hall and S. B. Childs, Denver.—p. 36.
Treatment of Corneal Conditions by General Practitioner. W. H. Crisp, Denver.—p. 44.
Vincent's Angina. I. D. Scott, Boulder.—p. 47.

Delaware State Medical Journal, Wilmington

Oct., Nov., Dec., 1919, 10, No. 4

- Röntgen-Ray Treatment of Hyperthyroidism. G. C. MacElfatrick, Wilmington.—p. 6.
Tuberculosis Problems Confronting the General Practitioner. A. Robin, Wilmington.—p. 11.

Georgia Medical Association Journal, Atlanta

January, 1920, 9, No. 9

- Digitalis Administration. W. C. Pumpelly, Macon.—p. 33.
Importance of Urologic Examination in Abdominal Diagnosis. G. Y. Massenburg, Macon.—p. 34.
Mental Hygiene. W. L. Funkhouser, Atlanta.—p. 36.
Importance of Early Correction of Club Feet. T. Toepel, Atlanta.—p. 38.
Part and Profit of Family Physician in Public Health. M. F. Haygood, Atlanta.—p. 42.
Early Recognition and Treatment of Neuroses and Psychoneuroses. N. M. Owensby, Atlanta.—p. 43.
Early Diagnosis of Carcinoma of the Uterus and Its Treatment with Radium. W. C. Gewin, Birmingham.—p. 49.

Iowa State Medical Society Journal, Des Moines

Feb. 15, 1920, 10, No. 2

- Influenza in an Army Camp. E. T. Edgerly, Ottumwa.—p. 31.
Bacteriology and Pathology of Influenza. H. Albert, Iowa City.—p. 35.
Control of Influenza Epidemics. J. H. Hamilton, Iowa City.—p. 38.
Relation of Influenza to Tuberculosis. J. H. Peck, Des Moines.—p. 42.
Surgical Complications in 1,030 Cases of Influenza. C. J. Rowan, Iowa City.—p. 44.

Relation of Influenza to Tuberculosis.—A resumé of the cases seen in private and clinical practice during the past four months leads Peck to the conclusion that while a fair proportion of patients admitted a recent attack of influenza and every respiratory infection short of a frank pneumonia has been called the "flu," it has appeared that in some the tuberculosis has been evidently aggravated, but in the large majority the intercurrent influenza has apparently not been the actual causative factor in the acute exacerbation of tuberculosis.

Journal of Bacteriology, Baltimore

January, 1920, 5, No. 1

- Nitrogen Metabolism of Actinomycetes. S. A. Waksman.—p. 1.
Changes in Reaction as Result of Growth of Actinomycetes on Culture Mediums. S. A. Waksman and J. S. Joffe.—p. 31.
Sterilization of Oils by Means of Ultraviolet Rays. L. T. Fairhall and P. M. Bates, Washington, D. C.—p. 49.
Bacillus of Morgan No. 1; A Metacolon-Bacillus. Th. Thjøtta, Bergen, Norway.—p. 67.
Method of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria. J. Bronfenbrenner, M. J. Schlesinger and D. Soletsky, Boston.—p. 79.
Extracts of Pure Dry Yeast for Culture Medium. S. H. Ayers and P. Rupp, Washington, D. C.—p. 89.
Modified Procedure for Preparation of Testicular Infusion Agar. G. W. Clark, Berkeley, Calif.—p. 99.
Apparatus for Obtaining Samples of Water at Different Depths for Bacteriologic Analysis. F. C. Wilson, Madison, Wis.—p. 103.

Sterilization of Oils by Means of Ultraviolet Rays.—Experimental research by Fairhall and Bates has shown that certain oils, such as olive oil, cottonseed oil and almond oil,

can be sterilized effectively by means of relatively short exposure to ultraviolet rays. The abiotic power of the ultra rays is not restricted to the vegetative bacterial cell alone but extends to the spores as well as to certain molds, such as *Penicillium*, *Aspergillus* and *Mucor*. Lipolytic enzymes in oil are sensitive to, and their action is inhibited by, exposure to ultraviolet rays. Except for a slight bleaching, the oil is unchanged physically and chemically by this exposure. The sterilizing effect of ultraviolet rays is still apparent after they have been filtered through layers of oil 4 mm. in thickness. Olive oil when exposed for long periods of time shows an increase in acidity, and this increase is directly proportional to the length of exposure.

Bacillus of Morgan No. 1: A Metacolon Bacillus.—Nine cases of diarrhea or dysenteriform colitis are analyzed by Thjøtta. Two of these ended fatally and the postmortem examination showed the existence of a severe colitis. From these cases of intestinal disturbance, typical strains of the bacillus No. 1 of Morgan were isolated, while it was impossible to discover the presence of other pathogenic germs. Seven of these strains were studied immediately after isolation as well as after one and one-half years of growth on artificial mediums, and most of them altered their characters considerably during this time. They could culturally no longer be recognized as belonging to the Morgan group, but had to be looked on as dysentery strains. Serologically, there could not be detected any relation between these strains and other pathogenic microbes, such as typhoid, paratyphoid A and B, dysentery I, II and III or colon bacilli. Neither was it possible to find any considerable relation between the various strains themselves, nor did any of the strains show the slightest agglutination in the serum from the patients. Thjøtta concludes that the Morgan bacillus is simply a *Bacterium coli* of a certain fermenting type. Consequently, he says, it would be better to give it the Danish name "metacolon organism" as this name points to the large group of the colon bacilli, while the name of Morgan bacillus gives the idea of a microbe of a certain special type.

Methods of Isolation and Identification of Members of Colon-Typhoid Group of Bacteria.—According to these authors the bactericidal power of CR (China blue-Rosolic acid) is due entirely to the action of rosolic acid. Moreover, the inhibition of growth seems to be directed only against gram-positive bacteria. Almost all gram-negative bacteria tested grow readily on a medium containing twenty-five times the amount of rosolic acid which is inhibitive for gram-positive organisms. This apparent selective action of rosolic acid, coupled with its failure to inhibit the growth of *B. dysenteriae* renders this dye particularly suitable for the preparation of selective mediums to be used for the isolation of intestinal bacteria.

Extracts of Pure Yeast for Culture Mediums.—The value of using extracts made from dried pure yeast, that is, yeast which has been washed and then dried at a low temperature without the addition of starch or other fillers, is emphasized by Ayers and Rupp. This extract may be used alone as a basis for more complicated mediums when necessary. Extracts of pure yeast contain, besides amino-acids and other proteins, fermentable material in small amounts, probably present in the yeast cell which makes them valuable for general bacteriologic purposes. The fermentable material probably stimulates growth but renders the extract valueless as an ingredient of mediums for fermentation tests.

Journal of Cancer Research, Baltimore

January, 1920, 5, No. 1

- Pathologic Changes Accompanying Injections of an Active Deposit of Radium Emanation. Intravenous and Subcutaneous Injections in White Rat. H. J. Bagg, New York.—p. 1.
Relation of Pregnancy and Reproduction to Tumor Growth Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slyce, Chicago.—p. 25.
Relation of Inbreeding to Tumor Production: Studies in Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slyce, Chicago.—p. 53.

Pathologic Changes Accompanying Injections of Active Deposit of Radium Emanation.—Gagg claims that following

injections of an "active deposit" of radium emanation there is a diffusion of the radioactive substance throughout the animal body, which results in pathologic changes in the various organs. The most interesting changes were those that were found in the liver, and resulted from comparatively small doses of radium injected subcutaneously. A fatty degeneration, associated with many giant cells and hyperchromatic nuclei, was found in the liver for a comparatively long time after the treatment. Following large doses of radium, congestion and hemorrhages were frequently found in practically all the organs and in the severe, acute cases the animals died after showing symptoms of marked enteritis. The most frequent pathologic condition that occurred in the kidney was a granular degeneration and erosion of the renal cells. It was found that injections of radium resulted in the destruction of the cells of the bone marrow, and replacement by blood. Congestion of the spleen was the most constant feature following radium treatment, and in some cases this was associated with hemorrhages, and the destruction of red blood cells. The method of injection appears to determine, to a certain extent, the severity of reaction in certain organs. For example, following subcutaneous injections there was comparatively no pathologic reaction, of an appreciable extent, in the lungs, but with intravenous doses, of about the same strength, the lung lesions were severe, and consisted of proliferation and desquamation of the epithelial cells of the bronchi, marked edema, congestion and hemorrhage. The results of this investigation tend to show that the liver, gastro-intestinal tract, kidneys, lungs and spleen receive the greatest amount of radioactivity.

Relation of Inbreeding to Tumor Production.—Inbreeding is demonstrated by Slye not to be an influence in the increase or the incidence of cancer, but merely a method of analyzing a strain. Strains consistently inbred may produce 100 per cent., or 50 per cent., or 0 per cent. of cancer according to how much cancer is bred in, not in accordance with the method used. The real effect of inbreeding is to eliminate cancer by eliminating the strain. It is hybridization which increases cancer by increasing the output of cancer progeny. The ratio of tumor "takes" in increasingly later generations from hybrid crosses of low grade productivity, proves nothing, Slye claims, with reference to the inheritability of cancer, but demonstrates the biologic relation between race vigor and the number of tumor "takes." As the cancer ancestry behind a generation broadens and deepens, the individuals of that generation tend to run more and more to cancer production. This is equally true of inbred and of hybrid generations, since the amount of cancer which comes out in the progeny depends on the amount which is put into the ancestry, whether the method is inbreeding or hybridization. It is, therefore, possible wholly to eliminate cancer from the race by not putting it in through the ancestry; this is true both in inbreeding and in hybridization. In demonstrating the inheritability of cancer and of other tumor types in mice, Slye has demonstrated their inheritability also for man and for every other species in which they occur, since the cancer and noncancer tendencies which segregate out in mice must segregate out also in every other species in which they occur, and this is the test of heredity.

Kansas Medical Society Journal, Topeka

February, 1920, **20**, No. 2

- Diagnosis and Treatment of Syphilis. N. F. Ockerland, Topeka.—p. 25.
Nonspecific Therapy. W. A. Myers, Rosedale.—p. 30.

Laryngoscope, St. Louis

January, 1920, **30**, No. 1

- Five Cases of Lateral Sinus Thrombosis. C. R. Holmes and H. M. Goodyear, Cincinnati.—p. 1.
Otogenic Facial Paralysis. I. W. Voorhees, New York City.—p. 14.
Effect of Repeated Rotation on Nystagmus. C. R. Griffith, Urbana.—p. 22.
Laryngology and Rhinology in France. R. H. Skillern, Philadelphia.—p. 26.
Italian Contributions to Etiology and Therapy of Ozena. C. Caldera, Modena, Italy.—p. 31.
Cerebral Abscess of Frontal Sinus Origin. F. L. Christiana, Norway.—p. 38.

Maine Medical Association Journal, Augusta

February, 1920, **10**, No. 7

- Control of Venereal Disease in Maine. H. E. Hitchcock, Augusta.—p. 199.

Medical Record, New York

Feb. 14, 1920, **97**, No. 7

- Applied Calcium Therapy: Study of Deficiency Diseases. J. Aulde, Philadelphia.—p. 257.
Blood Transfusion in Obstetrics. J. R. Losee, New York.—p. 265.
Conservative Remedial Measures in Most Acute Infectious Diseases. In Particular for Adults and During Influenza. J. M. Taylor, Philadelphia.—p. 268.
Prognosis in Pulmonary Tuberculosis. A. Henry, Indianapolis.—p. 272.
Local Anesthesia in Radical Cure of Hernia. C. T. Souther, Cincinnati.—p. 274.
Dreams. H. Laveson, New York.—p. 275.
Case of Huntington's Chorea. M. H. Frantz, New York.—p. 277.

Feb. 21, 1920, **97**, No. 8

- Experimental Study in Mental Therapeutics. L. P. Clark, New York.—p. 299.
Some Present Day Cardiac Topics. T. E. Satterthwaite, New York.—p. 305.
Cases from Orthopedic Clinic of Lebanon Hospital. J. Grossman, New York.—p. 309.
Hippocratic Medicine. J. H. Hare, Evansville.—p. 313.
Latent Tuberculosis. O. W. McMichael, Chicago.—p. 317.
Ulcer of Esophagus. J. E. Sheehan, New York.—p. 319.

Mental Hygiene, Concord, N. H.

January, 1920, **4**, No. 1

- Colony and Extra-Institutional Care for the Feeble-minded. C. Bernstein, Rome, N. Y.—p. 1.
Some New Problems for Psychiatric Research in Delinquency. T. W. Salmon, Boston.—p. 29.
Movement for Mental Hygiene of Industry. E. E. Southard, Boston.—p. 43.
The "Nervousness" of the Jew. A. Meyerson, Boston.—p. 65.
Anxiety and Fear. F. E. Williams.—p. 73.
Problems Confronting a Psychoeducational Clinic in a Large Municipality. J. E. W. Wallin, St. Louis.—p. 103.
Comparative Statistics of State Hospitals for Mental Disease, 1918, H. M. Pollock and E. M. Furbush, New York.—p. 137.

Michigan State Medical Society Journal, Grand Rapids

February, 1920, **18**, No. 2

- Radicalism Versus Sound Judgment. R. R. Reed, Bay City.—p. 59.
Syphilis at U. S. Army Base Hospital, Camp Greene, Charlotte, N. C. C. F. Ross, Richmond, Va., and W. A. DeFoe, Detroit.—p. 60.
*Surgery of Supraspinatus Muscle. A. S. Kitchen, Escanaba.—p. 64.
*Intestinal Drainage (Enterotomy) for Intestinal Obstruction. H. J. V. Berg, Grand Rapids.—p. 67.
Etiology of Organic Heart Disease. M. A. Mortensen, Battle Creek, Mich.—p. 71.
*Why the Pain of Peptic Ulcer Is Best Accounted for by Corrosion of Gastric Juice Rather than by Hunger Contractions and Hyper-tonus. C. E. Vreeland, Detroit.—p. 74.
Inversion of Uterus. H. W. Yates, Detroit.—p. 75.
Reminiscence of Sir William Osler. B. N. Epler, Kalamazoo.—p. 79.

Surgery of Supraspinatus Muscle.—Among about 100 cases of injuries to the shoulder in which the roentgenograms were used for diagnosis, Kitchen found the insertion of this muscle torn out in about ten cases, as indicated by the separation of the topmost portion of the greater tuberosity of the humerus. In Kitchen's cases of dislocation of the shoulder, separation of the insertion of the supraspinatus occurred in one-half of the cases.

Intestinal Drainage (Enterotomy) for Intestinal Obstruction.—Berg has modified Moynihan's method of tube drainage of the intestine so that it can be accomplished without any soiling.

Pain of Peptic Ulcer Is Best Accounted for by Corrosion of Gastric Juice.—Thirteen reasons are given and discussed by Vreeland in support of the corrosion theory of the formation of gastric ulcer.

New Jersey Medical Society Journal, Orange

February, 1920, **17**, No. 2

- Application of Rehabilitation Methods from War to Civil Life.. F. H. Albee, New York.—p. 37.
Epithelioma of Tongue. E. D. Newman, Newark.—p. 41.
*Tropical Sprue in New York. M. Sturtevant, New York.—p. 44.
Cardiac Sequels of Influenza. G. P. Curtis, New Haven, Conn.—p. 45.

Tropical Sprue in New York.—Two cases of sprue seen in New York are reported by Sturtevant. One of the patients had been in Havana and the other had been in Florida for a few weeks each winter. Both the patients had symptoms

of sore mouth and diarrhea, coming in attacks. They had both lost weight. Both had a curious earthy color to their skin. Their stools were largely fat with normal pancreatic ferments. They responded in striking manner to milk diet. One of the patients showed characteristic improvement on strawberries. The other patient found the addition of salt to his milk made the milk more palatable and developed a sort of salt hunger or craving so that he would take from 40 to 70 gm. or more of sodium chlorid in twenty-four hours.

New York Medical Journal

Feb. 7, 1920, 111, No. 6

- Introduction of Study of Endocrines in Gynecology. S. W. Bandler, New York.—p. 221.
Indications for Internal Gland Therapy. W. Timme, New York.—p. 226.
Endocrine Neuroses and Their Treatment. J. Rogers, New York.—p. 229.
Endocrinology in Daily Practice. W. V. P. Garretson, New York.—p. 232.
Pineal Body. S. E. Jelliffe, New York.—p. 235.
Endocrine Tropisms; Adrenotropisms. D. M. Kaplan, New York.—p. 241.
Case of Acromegaly. M. W. Barr, Elwyn, Pa.—p. 248.
Interdependence of Function of Ductless Glands; Etiologic Factor in Toxic Goitre. J. C. O'Day, Honolulu, Hawaii.—p. 250.

Ohio State Medical Journal, Columbus

February, 1920, 16, No. 2

- Bringing Health to People. L. K. Frankel, New York.—p. 78.
Medical Service with Rainbow Division. H. D. Jackson, Circleville.—p. 82.
New Hope in Heredity. M. H. Fischer, Cincinnati.—p. 88.
Is Epilepsy Curable? C. W. King, Dayton.—p. 95.
Infection During Child Birth. H. J. Lower, Marion.—p. 98.

Texas State Journal of Medicine, Fort Worth

February, 1920, 15, No. 10

- Reporting Syphilis to State Boards of Health. R. Blue, Washington, D. C.—p. 355.
Early Diagnosis and Treatment of Syphilis. I. L. McGlasson, San Antonio.—p. 356.
Early Diagnosis and Treatment of Syphilis as Taught in U. S. Army. N. Snyder, Brownwood.—p. 358.
Syphilis of Tracheobronchial Tree; Case of Gumma of Trachea. S. Israel, Houston.—p. 362.
Neurosyphilis Prophylaxis. G. H. Hampshire, Marlin.—p. 365.
Syphilitic Heart Disease. C. M. Grigsby, Dallas.—p. 368.

Gumma of Trachea.—The symptom for which Israel's patient came to the hospital was a severe attack of dyspnea. On examination, a swelling about the size of a hen's egg, was found in the upper third of the trachea. The blood Wassermann was + + + + positive. Under antisyphilitic treatment, arsphenamin injections and potassium iodid, the mass seemed to melt away. Only a slight thickening remained.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

January, 1920, 24, No. 8

- Perihilar Bronchopneumonic Pseudolobar Phthisis. W. Overend.—p. 241.
Special Points in Technic for Roentgenography of Clavicle and Lateral Aspect of Ribs for Detection of Injuries. R. K.—p. 248.
*Roentgenotherapy of Uterine Fibroids; Results of Four Hundred Cases. Bécclère.—p. 254.
*Roentgen-Ray Treatment of Case of Early Acromegaly. J. H. D. Webster.—p. 261.
Fetish of Central Ray. M. Berry.—p. 264.

Roentgenotherapy of Uterine Fibroids.—In 400 cases treated by Bécclère with the roentgen ray, the two principal results obtained have been the suppression of the metrorrhagia and the reduction in the volume of the tumors. He believes that radiotherapy of uterine fibroids is one of the most important of the uses of roentgen rays in the treatment of neoplasms. Its principal rôle is to induce the destruction and disappearance of the neoplastic cellular elements of which the fibromas consist; this is the direct effect of this form of treatment, and is the earliest manifestation of its action. It is, however, nearly always necessary to continue the radiations up to the point of the destruction of

the normal cellular elements of the primitive ovarian follicles. When the treatment is suspended after the cessation of the periods, and the appearance of the hot flushes which characterize the menopause, the uterine tumors usually continue to decrease, sometimes much more slowly than during the treatment. But, if, after a more or less long interval the periods reappear, this return is very frequently accompanied by a revival of the activity of the fibroid, and it again increases in size. Bécclère recommends that patients, especially those under the menopause age, should not wait until the periods return before they resume treatment, but that they should submit themselves for a fresh examination if the hot flushes prematurely cease. In a similar manner the discovery that the uterine tumor has increased in size is an indication for the immediate resumption of the treatment.

Roentgen-Ray Treatment of Case of Early Acromegaly.—In acromegaly, roentgen-ray treatment at present rests almost entirely on a theoretic basis. Webster contends that it should be eminently a disease suitable for roentgen-therapy, especially in its early stages, when the anterior lobe of the pituitary would show merely a simple chromophil hyperplasia, and before secondary tumor-like formation, local pressure damage, and much skeletal change has been produced. In his case so treated the disease had been of almost four years' duration. She had sixteen treatments with hard filtered rays from temporal and frontotemporal areas, the first eleven at weekly intervals, then fortnightly, latterly at monthly or longer periods. The effect was remarkable. The severe headache was rapidly relieved, and soon entirely disappeared. The "queer feelings" almost entirely left her: from two or three weekly they dropped to about one a month. The irritability and depression almost completely left her. She lost about seven pounds in weight. The most striking changes were in the eyes, the optic discs returned practically to the normal, while the fields of vision (especially for red) greatly enlarged. The right eye still presented some irregular contraction, chiefly inferior temporal. Apart from one or two bromid powders there was no treatment beyond irradiation. The patient was lost sight of for nearly two years; her condition, subjectively and objectively, had become aggravated again. She was then operated on successfully by the nasosphenoidal route.

British Journal of Children's Diseases, London

October-December, 1919, 16, Nos. 190-192

- Poliomyelitis and Polioencephalitis. Report of Cases. E. Cautley.—p. 193.
*Sequel in Case of Lipodystrophia Progressiva. P. Weber, T. H. Gunewardene, and H. M. Turnbull.—p. 200.
School Dental Clinic. C. E. Wallis.—p. 204.
*Lymphangioma of Tongue. B. W. Howell.—p. 213.
*Case of Leukoderma and Melanoderma Associated with Leukonychia. H. C. Samuel.—p. 217.

Sequel of Lipodystrophia Progressiva.—It is claimed by the authors that this seems to be the first published post-mortem examination of a case of lipodystrophia progressiva. The patient, a girl, aged 13 years, was operated on for a purulent otorrhea. Soon afterward there developed a septic type of pyrexia. The patient died about three months after operation. In the sections of the scalp and abdominal wall, the only evidence detected of fatty tissue was the presence in the scalp of a few small areas which may have been occupied by fat cells. One of the sections of the suprarenal bodies included a little of the surrounding retroperitoneal tissue. Definite fatty tissue was present in this. In no section were there lobules of embryonic fatty tissue such as are found in the fetus, and in infants during the first and even second year of life. No abnormality was detected in the ovary. In the suprarenal bodies there appears to be less lipid than usual in the cortex. In the thyroid glands there was an excess of secretion of colloid. The authors consider it reasonable that such a pathologic condition of the thyroid was connected with the abnormality in the subcutaneous fat.

Lymphangioma of Tongue.—Howell's patient was only 6 years old. There was no family or personal history of disease. He gave a negative Wassermann reaction. He had congenital nevus of the lower lip, which involved the mucons membrane of the gum. This got fuller when the child cried,

and bled occasionally. The swelling of the tongue was first noticed when the child was 3 years of age. It commenced on the posterior aspect and had grown forward slowly. It became stationary, vesicles continually broke down and ulcerated, causing pain, and on that account the boy bolted his food, which was always minced. He ate most things and took a rather large amount of salt, of which he was fond, but avoided sauces. Occasionally, the tongue was enlarged without apparent cause, and protruded from the mouth. It was then excessively painful, and was a source of anxiety to the patient and his parents. Salivation was excessive and articulation impaired. The tonsils were much hypertrophied, the submaxillary lymphatic glands were much enlarged, and the submental glands were palpable.

Case of Leukoderma and Melanoderma Associated with Leukonychia.—A boy, aged 6 years, presented in the left lower costal and lumbar regions a melanodermic sheet on which were small leukodermic spots arranged in lines. On his nails were some early spots of leukonychia. The elder brother also exhibited the early stages of leukonychia striata on several of the finger nails. The father had recently developed well marked leukoderma and melanoderma at the angle of his lower jaw, and some leukonychia of his fingers. The father's brother had every well-marked leukonychia striata of all his finger nails.

British Medical Journal, London

Feb. 7, 1920, 1, No. 3084

Flail Joints and Their Treatment. R. Jones.—p. 175.

*Tumors Complicating Pregnancy, Labor and the Puerperium. H. R. Spencer.—p. 179.

*Penetrating Wound of Chest; Thoracotomy; Suture of Pericardium. J. B. Haycraft.—p. 184.

Acute Intestinal Obstruction Due to Pregnancy in a Bicornuate Uterus. C. E. S. Jackson.—p. 185.

Antistreptococcal Serum in Puerperal Fever. O. Hilton.—p. 185.

*Simple Treatment of Ringworm of Nails. R. Craik.—p. 185.

Mode of Infection in Pulmonary Infection. T. Campbell.—p. 185.

Tumors Complicating Pregnancy, Labor and Puerperium.

—It is Spencer's belief that the great majority of cases require only careful supervision during pregnancy, periodical examination of the urine, rest, mild aperients and anodynes if the tumors become painful. Induction of abortion, premature labor and forcible delivery past obstructing tumors are contraindicated. Forceps may be required for inertia but should never be used to overcome resistance caused by tumors. Craniotomy and embryotomy are called for only in cases in which the fetus is dead and the mother not affected. Polypi and pedunculated subperitoneal tumors should be removed. Vaginal myomectomy may be required for cervical fibroids, but should not be performed for retrocervical tumors. Abdominal myomectomy is rarely needed, and usually only for very large or twisted or necrobiotic tumors. It not infrequently leads to abortion and to hysterectomy in order to stop the hemorrhage from the bed of the tumor, and it often fails to remove all the tumors present in the uterus. Before performing myomectomy, as also before conservative cesarean section, the tumor should be examined bacteriologically, and if it is infected, the whole uterus should be removed. Hysterectomy during early pregnancy, in the absence of hemorrhage or infection, is rarely called for. Conservative cesarean section is rarely indicated by the fibroids alone, but may be performed when fibroids are associated with contracted pelvis or malpresentations of the child, especially in elderly primiparae. In the case of a single myoma, it might be possible to remove the myoma and child through the same incision. In the puerperium, vaginal myomectomy is usually the best treatment for submucous tumors even when they are infected or invert the uterus. It should usually be tried before resorting to hysterectomy, which Spencer has never found to be necessary. In infected subperitoneal or intramural tumors total abdominal hysterectomy should be performed.

Penetrating Wound of Chest: Thoracotomy: Suture of Pericardium.—Haycraft regards his case as of interest as throwing light on the question whether it is necessary to close a large traumatic communication between the pericardial and pleural cavities. He was obliged to suture a

tear in the right lung at the lower part of the junction of the anterior and basal borders, with fine linen thread, and a tear in the pericardium about 2 inches in length from above downward, through which was protruding the right auricular appendix and part of the right auricle. This was closed by a continuous suture of fine linen thread, but with considerable difficulty, owing to the extremely rapid beating of the heart and the attempts of the auricular appendix to get outside the pericardium at each beat.

Treatment of Ringworm of Nails.—In the two cases cited by Craik, the disease had existed for months in one patient, for years in the other. They were given a lotion consisting of 1 dram of salicylic acid in 1½ ounces of methylated spirit, to be painted on after scraping every night, and without scraping every morning, and to be used for three months or longer. Both patients were cured.

Japan Medical World, Tokyo

*Modified Silver Method of Staining Cilia and Spirochetes. K. Imai and H. Hidaka.—p. 57.

Nature of Hematemesis. K. Yoshida.—p. 57.

Absorption of Stains by Vital Embryonic Tissues. Special Reference to Carmine and Allied Stains. K. Kiyona.—p. 58.

Transplantation and Growth of Poultry Tumors, Especially Their Transplantation to Wing Bone. T. Kato.—p. 58.

Influence of Opium on Experimental Sugar in Blood. Furukawa and Uchi.—p. 58.

Modified Silver Method of Staining Cilia and Spirochetes.

—Hidaka makes use of silver in the form of an ammonium salt. Not only the cilia of the typhoid bacilli and allied bacteria, but also spirochetes and the cilia of cholera vibrios take the stain very easily. The following solutions are employed: (A) 100 parts of a 10 per cent. acetic potassium solution; (B) 100 parts of a 3 per cent. phenol solution; 10 parts of tannic acid; (C) 20 parts of a 2 per cent. stibio-kalium tartaricum. Solution A is put in a 200 c.c. flask and heated at 40 C. While heating, solution B is poured into the flask and heating is continued until the white precipitate is completely dissolved. Solution C is then added; a thick white precipitation occurs. This cloudy solution is the required macerating solution and may be used without being filtered. The solution thus obtained is stored in a brownish dripping bottle and is shaken before use. The residue is more efficacious than the filtrate. This residue may be desiccated and the dried substance may be employed by dissolving in water. This solution is poured over the entire surface of the smear to be stained, and is heated over the flame until vapor arises from the surface of the fluid, which becomes granular in appearance. Usually from one-half to one minute heating will effect this. Then the smear is washed with water. The ammonium silver is poured over the smear and heated; washed in water. Ammonium silver solution is prepared as follows: Ammoniac water is poured into a 3 per cent. silver nitrate solution enough to effect the dissolution of all the precipitate that is formed by the adding of the former for the first time. Then the 3 per cent. silver nitrate solution is dropped into the mixture until it turns cloudy. The mixture thus prepared is stored in a brown bottle. The bacterial bodies appear black and the cilia dark brown.

Journal of Tropical Medicine and Hygiene, London

Feb. 2, 1920, 23, No. 3

The "Tenue" Phase of Plasmodium Vivax (Grassi and Feletti 1890). A. J. Chalmers and R. G. Archibald.—p. 33.

Three Cases of Filariasis in Which Intravenous Injections of Tartar Emetic Were Given. J. W. S. Macfie.—p. 36.

Ulcer Tropicum Treated with Tartar Emetic. A. Mei.—p. 38.

Lancet, London

Feb. 7, 1920, 1, No. 5032

*"Bone Setting"; Practice and Results of Forced Movement. J. B. Mennell.—p. 297.

Dental Sepsis in Children. F. St. J. Steadman.—p. 303.

Pauchet's Method of Gastrectomy. I. MacDonald.—p. 308.

*Case of Hydatid Disease of Bone. C. E. Corlette.—p. 311.

War Edema in Turkish Prisoners of War. J. I. Enright.—p. 314.

Acute Glanders in Man. T. Hunter.—p. 316.

An Operation Under Difficulties. N. Crichton.—p. 317.

*Four Cases of Intestinal Obstruction. A. C. Perry.—p. 318.

Case of Corneoscleral Cyst. H. H. Bywater and P. E. Gorst.—p. 319.

"Bone Setting" Forced Movement.—The whole subject of treatment of after-effects of injury, Mennell says, is interwoven with that of the administration of forced movement, and this in turn is intimately connected with the art of what is commonly known as "bone-setting," and until the time has come when the old teaching of absolute and prolonged rest after injury shall have been supplanted by Lucas-Championnière's doctrine of the scientific combination of rest with mobilization, the type of disability which fills the "bone-setter's" rooms will never disappear. The first golden rule in manipulation under anesthesia should, therefore, be that no further attempt at movement is to be made in any direction when once a definite adhesion has been felt to give way. If this rule is ignored, injury will inevitably be inflicted on the fibrous tissue which forms a large bulk of the muscles which oppose the movement. Movement in other directions may, however, be continued. Mennell discusses the choice of time anesthetic and technic, the general procedure and the movement used for individual joints in detail.

Hydatid Disease of Bone.—In Corlette's case hydatid cysts were found in the femur, the right pelvic bones and the thigh, reaching from the level of the upper end of the bone above nearly to the popliteal space below; between the spleen and the diaphragm, the top of the spleen forming its floor, and the under surface of the diaphragm forming its roof. The kidneys and liver were entirely free from any sort of hydatid growth or deposit. So was the left lung. But the right lung presented a very remarkable appearance. The whole of the apical part looked like marble, giving the impression that a series of small hydatid cysts were lodged beneath the pleural surface. At the lower margin of the upper lobe another hydatid mass could be seen, about the size of a pigeon's egg and elastic in consistency. This was incised and found to contain a densely packed mass of crumpled looking hydatid membrane, cutting like a solid jelly. No free fluid exuded from the section, and there was no sign of an enveloping mother cyst. The brain was not examined.

Cases of Intestinal Obstruction.—Perry cites a case of atresia of the small intestine discovered in a child eighteen hours after birth. The small intestine ended blindly. Enterostomy was performed but the child died after six hours. A second case was one of strangulated sciatic hernia in a woman, aged 27, who was eighteen weeks pregnant.

Medical Journal of South Africa, Johannesburg

August, 1919, **15**, No. 1

Principles of Psychanalysis and Modern Psychotherapy. H. Goodman.—p. 1.

September, 1919, **15**, No. 2

Trench Fever in Salonica and France. H. T. H. Butt.—p. 33.

October, 1919, **15**, No. 3

Medical Boarding of "Heart Cases." G. D. Maynard.—p. 57.

Case of Pseudohypertrophic Muscular Dystrophy in a Native. M. D. Utrecht.—p. 60.

November, 1919, **15**, No. 4

Case of Chronic Abscess Caused by Nocardia Foulertonii. A. Pijper.—p. 82.

South African Medical Record, Cape Town

Dec. 27, 1920, **17**, No. 24

*Agar: A Fluid Medium. A. Pijper.—p. 372.

Jan. 10, 1920, **18**, No. 1

Cases Treated by Roentgen Rays, Radium and Electrotherapeutics. de V. Hugo.—p. 4.

Poisoning of Cooper's Dip. P. H. Walker.—p. 12.

Agar: A Fluid Medium.—Pijper maintains that the so-called water of condensation found at the bottom of agar slants and on the surface of agar plates is not water and not merely the product of a process of condensation. This so-called water of condensation, Pijper says, ought to be called agar serum, and it is mainly the product of a process of secretion caused by the syneresis of the agar gel. The micro-organisms planted on the medium are bathed in this agar serum, which provides them with nutrient substances. Agar mediums, therefore, are not solid, nor simply liquefiable mediums, but they are fluid mediums, in which the

production of the fluid available for the nutrition of the microbes proceeds very slowly and follows certain rules. The secretion of this serum, and the concentration of its constituents, and therewith the value of an agar medium from a bacteriologic point of view, are dependent on various factors, which ought to be investigated.

Archives Médicales Belges, Brussels

September, 1919, **72**, No. 9

War Gases. H. Fredericq.—p. 229. Conc'n.

*Serotherapy of Tetanus. M. Stassen and J. Voncken.—p. 255.

*Artificial Eyes in Antiquity. Van Duyse.—p. 262.

Clinical Examination in Disease of Nervous System. M. Molhant.—p. 27. Conc'n.

Serotherapy of Tetanus.—Stassen and Voncken emphasize that the fear of serum sickness and even the development of serum accidents should not deter from pushing the anti-serum treatment in tetanus, both by the intraspinal and the subcutaneous routes, as in it lies the only hope of influencing the disease.

Artificial Eyes in Antiquity.—Van Duyse recalls that no authentic specimen of an artificial eye supposed to have been worn by a living person has been found in the excavations in Egypt. But the marble and glass, terra cotta and enamel eyes found in mummies and in funeral masks are indirect testimony in favor of the ancient Egyptians having known and used prostheses for the eyes, as they were so particular about their appearance.

Bulletin Médical, Paris

Jan. 17, 1920, **34**, No. 3

*Vaccine Therapy of Osteomyelitis. R. Grégoire.—p. 41.

Clinical Examination of the Constipated. J. Gévelier.—p. 42.

Vaccine Therapy of Acute Staphylococcus Osteomyelitis.—Grégoire warns that time should not be wasted on vaccine therapy when septicemia has undetermined the system so that it is unable to respond to the stimulus of the vaccine. Even when the general aspect is good, he does not persist with the vaccine if the fever does not show signs of abating in forty-eight hours. The abscess should not be opened, as this invites secondary infection. Even very large swellings subsided completely under the vaccine treatment; in three cases he punctured to relieve the distention. His experience has not indicated that any better results are obtained with large doses than with small, while there may be disagreeable reactions to the larger doses, especially on the part of the heart. The pulse always ran up, sometimes to 140 or 150, but without disturbing the patient, and it kept high for two, three or four days. He never ventured a new injection until the pulse had returned to its former rate. Nine cases of acute or subacute osteomyelitis have been treated in this way, beginning with a stock vaccine; sometimes the abscess was punctured two or three times before the final complete retrogression. Some of the patients recovered without hyperostosis, and it never amounted to much. From two to nine injections were given in the different cases, and the total of 400 millions was never surpassed. The cure was complete in five or six weeks and the general condition was far better than in the surgical cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 26, 1919, **43**, No. 38

*Congenital Senile Skin. G. Variot and Cailliau.—p. 1125.

*Spirochetal Jaundice with Rash. M. Garnier and J. Reilly.—p. 1128.

*Transfusion of Blood in Malignant Measles. E. Terrien.—p. 1134.

*Erosive Angina. P. Harvier and de Léobardy.—p. 1136.

*Malaria and Amebiasis. E. Job and L. Hirtzmänn.—p. 1139.

Ouabain in Cirrhosis of Liver. H. Dufour and G. Semelaigne.—p. 1143.

Congenital Senile Skin.—Variot and Cailliau state that the corrugated senile skin in the case reported was noted at birth, while in cases of geromorphism that have been published by others, the senile aspect of the skin developed in the children later, after several years of a normal aspect.

Spirochetal Jaundice with Rash.—Garnier and Reilly say that a scarlatiniform rash preceded the jaundice in a case they relate. The young civilian recovered completely in

about a month. The urine contained the spirochetes, confirmed by inoculation of guinea-pigs but agglutination tests were negative. The differential diagnosis was difficult as the symptoms for five days were merely gastro-intestinal disturbance, fever, depression and myalgia, headache and herpes, and then came the rash. As this became generalized, the eyes showed the tendency to jaundice. There was no desquamation later, and the assumption of superposed scarlet fever has no basis.

Measles and Transfusion of Blood.—Terrien found that the infant of 13 months was developing a malignant form of measles. The rash lasted only one day, and the most vigorous measures, including mustard packs, failed to bring it out again. The child's strength was kept up with camphorated oil and daily glucose-epinephrin injections. The condition growing constantly worse, a subcutaneous injection was made the fifth day of 20 c.c. of whole blood from a brother who had had measles six months before. By evening the infant was playing in its bath, and he slept that night for the first time. The temperature began to go down, and by the next day the child was cured. Terrien emphasizes the rapid improvement after this plasma-therapy, the efficacy of the subcutaneous route for infants, and the fact that the antitoxins had persisted for six months in the donor. The subcutaneous route avoids the danger of the shock from intravenous administration, and it also renders unnecessary any preliminary testing of the donor's blood for hemolytic properties.

Erosive Angina.—Harvier has encountered three cases recently which do not fit into the frame of any known type of sore throat. The infectious process affected only the anterior pillar, and only on one side. The oval lesion is more an erosion than an ulceration, and there is no false membrane formation, but the onset is febrile and stormy, and the glands nearby show slight congestion. The lesion does not spread, but it lasts for three weeks and then subsides, regardless of the local measures applied. Bacteriologic tests showed cocci and an occasional staphylococcus.

Malaria and Amebiasis.—Job and Hirtzmann comment on the puzzling character of the sickness when amebiasis is associated with malaria. Proper treatment is extremely important as emetin will cure the one and quinin the other, or at least this will attenuate them, as a rule. In some cases, however, the intestinal or liver amebic disease complicated with malaria proves inevitably fatal.

Journal de Chirurgie, Paris

December, 1919, 15, No. 5

*Minor Displacements of the Vertebrae. E. C. Cyriax.—p. 457.

*Tuberculous Lesions in Temporal Bone. Bellin, Aloin and Vernet.—p. 486.

*Ligneous Phlegmons. S. Mercadé.—p. 499.

*Buried Shoe-Lace Suture. W. Dubreuilh.—p. 509.

Minor Displacements of Cervical Vertebrae.—Cyriax' experience with hundreds of cases of incomplete dislocation of the cervical vertebrae has confirmed its unsuspected frequency, and that it can occur without any symptom, although usually it causes more or less disturbance analogous to similar minor displacements in the bones and cartilages of the limbs. The pathology and the necessity for reduction and the technic for the latter are practically the same in all. The pain, stiffness, and inability to move the head may all disappear as compensation becomes established. In one of his cases there were no functional symptoms except change in the voice, rebellious to all treatment. Palpation in the dorsal position is most instructive. One transverse process in front, the other at the back, signifies rotation on the axis; one in front, with the other in normal position, signifies rotation with unilateral forward displacement. He lists the other displacements liable to be encountered, with radiograms of each, and four typical case histories. The displacement can generally be reduced by the appropriate maneuvers with little or no pain.

Tuberculous Lesions in Temporal Bone.—Bellin and his co-workers have encountered four types of tuberculous osteitis in the temporal region and ear, and cite a fifth type

described by Bernard. They give an illustrated description of a case in each type: (1) latent tuberculous mastoiditis, often revealed by deafness; (2) tuberculous mastoiditis with necrosis, sometimes revealed by facial paralysis; (3) the same with fistulas; (4) chronic osteitis of the middle ear with hyperostosis of the mastoid, and (5) osteitis of the auditory meatus or of the scala tympani. The cases reported terminated fatally, the mastoid lesion being usually accompanied with tuberculous lesions elsewhere. The only exception is a case in which the outcome is not known although the immediate results of a radical operation were good. The lesion seemed to be limited to the external meatus and scala tympani, except where the condyle of the lower jaw had been touched by the osteitis. As a general rule, reliance must be on general measures until we can learn to detect these processes in their incipency and remove the focus before there is extensive destruction.

Woody Phlegmon.—Mercadé is confident that some foreign body is the primary factor in a ligneous phlegmon. Medical measures have always failed, and there is scant hope for resorption until the tumor with its foreign body has been excised. The incision can be sutured at once and the cure is complete in a few days, unless the phlegmon has assumed such dimensions that its entire removal is impracticable. In the ten personal cases described, the phlegmon was on the thigh, forearm, buttocks or neck, and it had developed after a war wound.

Buried Shoe-Lace Suture.—Dubreuilh uses very fine catgut and an extremely curved needle, and sutures the deeper layers of the incision together, the course of the threads exactly like the lacing of a shoe. The stitches must be as close together as possible—less than 1 cm. apart—as the threads cross and recross each other. To ensure even coaptation he ties the threads together at every fourth or fifth stitch. In three or four of the 100 cases in which he has applied this shoe-lacing suture in operations on the face, the catgut was cast off; in a few others the lips separated anew but only for a short distance, thanks to the relay knots. On the other hand, the superficial sutures have sometimes suppurred, especially in operations on the mouth, but the buried shoe-lacing suture held. This suture is a little more tedious than others but it interferes less with the circulation, and has several other advantages for operations on the face.

Journal de Radiologie et d'Electrologie, Paris

November, 1919, 3, No. 10

*Roentgen Treatment of Uterine Fibromyomas. Bécclère.—p. 433.

*The Fluorometer. H. Guilleminot.—p. 440.

*Roentgen Treatment of Localized Tuberculosis. Cottenot.—p. 447.

*Roentgenoscopy of the Tender Points. M. Jaulin.—p. 455.

Gastrocolonic Fistula from Early Cancer. L. Nahan.—p. 458.

Diaphragmatic Hernia. M. Audan.—p. 460.

*The Pylorus with Duodenal Ulcer. E. Constantin.—p. 462.

Calculation of Depth of Foreign Body. M. Ozil.—p. 463.

Roentgen-Ray Treatment of Uterine Fibromyomas.—Bécclère's communication supplements his previous one at the London medical congress in 1913. He now has a record of 500 cases of uterine fibromyomas treated by irradiation, and the interval since in 400 of the cases has been long enough for a decisive verdict. In 84.5 per cent. of the cases the fibromas projected into the abdomen from 1 to 30 cm. above the pubis. They began to subside in size even from the second or third sitting, shrinking about 1 cm. a week, but menstruation usually was not arrested under two or three months. In 60 per cent. of the total cases only twelve or fourteen sittings were required, so that the course took only from ten to twelve weeks, and the women continued their usual life all the time, and there was no suffering of any kind. The fibromas subside much more rapidly than at the natural menopause, so that the treatment must act on the tumors directly, as well as indirectly through the ovaries.

The Fluorometer.—Guilleminot's fluorometer determines the dose of the roentgen rays by the power of the rays to render fluorescent a small luminous screen.

Roentgen Treatment of Bone, Joint and Gland Tuberculosis.—Cottenot has been able to compile a long list of local tuberculous lesions which have been benefited by roentgen

treatment. It is still a question whether tubercle bacilli are destroyed by the rays, but there is general agreement that the cells of the tubercles are destroyed by them while proliferation of connective tissue is promoted. He deplors that notwithstanding the fine results realized from irradiation of bone and joint tuberculous processes during the last ten years, this treatment has not yet won the place that its efficiency and harmlessness deserve. It would avert the necessity for surgical measures and prolonged courses of heliotherapy. The best results have been realized to date with tuberculous processes in the small bones, as they are more accessible to the rays. He has cured many cases of processes in long bones and joints by combining roentgen irradiation with immobilization after evacuating pus and sequesters. The hip joint is almost beyond the reach of the rays; only Schede has reported two successful cases of coxalgia. Iselin has reported more than 800 cases of cured tuberculous osteoarthritis.

Roentgenoscopy of Painful Points.—Jaulin advises the roentgenologist to pay special heed to the tender points, and to outline them with a metal ring, as an important aid in the differential diagnosis.

Functional Insufficiency of the Pylorus with Duodenal Ulcer.—Constantin found that the pylorus allowed the contrast suspension to pass at once into the duodenum in six cases of duodenal ulcer. This insufficiency may be spontaneously manifest or can be induced by pressing on the prepyloric region. It may be latent and transient, but it seems to accompany duodenal ulcer often enough to have differential importance. In two other dubious cases, this insufficiency was not evident.

Presse Médicale, Paris

Jan. 21, 1920, 28, No. 6

*Internal Treatment of Psoriasis. R. Sabouraud.—p. 53.

*Ulcerating Mouth and Throat Lesions. David and Hecquet.—p. 54.
Angina Pectoris. R. Benon.—p. 56.

Internal Treatment of Psoriasis.—Sabouraud affirms that the treatment of psoriasis has entered on a new era of late with the discovery that certain measures which have nothing in common, except that they all give a kind of shake-up to the organism, are proving effectual in certain cases, although not in all. The list includes injection of mercurial salts, of antitoxic serums, and of emulsions of killed microbes from the patient's stools. There is hope that still more effectual means of inducing the shake-up or shock may yet be found. The field of experimentation seems immense and almost unlimited. Danysz' enterovaccine from the stools seems to be harmless, and great improvement under it seems to occur in more cases and to last longer than with any other measures yet known.

Ulcerative Lesions in the Mouth.—David and Hecquet write from Roumania to tell of their finding Vincent's fusiform bacilli in ulcerating lesions in the mouth and pharynx, which at first were ascribed to the prevalent scorbutus. In a recent twenty days, they encountered twelve cases of Vincent's angina. Glycerin solutions of arsenobenzol have proved useful.

Annaes Paulistas de Med. e Cirurgia, S. Paulo, Brazil

November, 1919, 10, No. 11

*Pulsating Exophthalmos. P. Gomes.—p. 241.
Therapeutics in 1918. C. Ferreira.—p. 247.

Ligation of Carotid for Pulsating Exophthalmos.—Great improvement followed ligation of the right common carotid to control an arteriovenous aneurysm of the internal carotid, communicating with the cavernous sinus, and entailing pulsating exophthalmos. Gomes adds that the latter was only attenuated by the treatment, but the other symptoms subsided.

Archivos Brasileiros de Medicina, Rio de Janeiro

September, 1919, 9, No. 9

*Abnormal Forms of Appendicitis. A. Possollo.—p. 707.
*Sugar Treatment of Pulmonary Tuberculosis. Ramiro Magalhães.—p. 736.

Abnormal Forms of Appendicitis.—Possollo reviews the unusual clinical picture that may be presented when the appendix is not in its normal place but is pushed to the left or is involved in a hernia or is adherent to pelvic organs, etc., or some infectious process elsewhere modifies the symptoms, or a tumor, constitutional disease, tuberculosis or actinomycosis may modify it, or the age may affect it, as when appendicitis develops in the infant or the aged. He remarks that while the diagnosis of appendicitis is not always easy under the most normal conditions, it is sometimes almost impossible under some of those just described. He has found the Abderhalden reaction a valuable aid in certain puzzling cases; in one, the presence in the blood of the special appendicular ferments gave the clue to the disease, confirmed by the operation. In another case the negative findings were confirmed by the operation which revealed right salpingitis. In a third, the positive findings conflicted with the presumptive diagnosis of colitis, but time proved the Abderhalden findings the correct ones. In a fourth case the findings were still positive two months after the appendix had been removed. Mariaute's experience has also confirmed that abnormal cases of appendicitis can be elucidated and confirmed by the Abderhalden reaction. In one case described in detail the young woman for two years had been having intense pain in the right iliac fossa at each menstrual period, but was free from pain during the intervals. It was so severe in the right hip and leg that she could not use them while it lasted. Possollo incriminated the appendix, and it was found pathologic, with a grape stone in it. In another case the septicemic appendicitis showed no local symptoms, no digestive disturbance, nor rigid abdominal wall. The only symptoms were those of acute nephritis, pain in the lumbar region and blood in the urine.

Sugar Treatment of Tuberculosis.—Ramiro Magalhães applied Lo Monaco's method of injections of sugar solution in forty-eight cases of pulmonary tuberculosis with negative results.

Archivos de Ginecopatía, Obstet. y Ped., Barcelona

July, 1919, 32, No. 7

*Ophthalmia Neonatorum. F. Vidal Solares.—p. 149.

*Pubiotomy in Extreme Case. A. Agustí Planell.—p. 153.

Prophylaxis of Ophthalmia Neonatorum.—Vidal emphasizes the necessity for laws in Spain making compulsory the disinfection of the eyes of the newly born, and other measures for collective prophylaxis of blindness.

Pubiotomy in Extreme Case.—The rachitic lumbar kyphosis and ante flexion of the uterus, with transverse diameter of only 8 cm., were combated by pubiotomy and stretching the severed bone apart for 6 cm. The child was safely delivered and the wound healed with only a slight febrile reaction. Fifteen days after delivery an apical tuberculous process became manifest and rapidly spread through the lungs, with death the fortieth day after delivery.

Brazil-Medico, Rio de Janeiro

Nov. 15, 1919, 33, No. 46

*Case of Actinomycosis. O. Torres.—p. 361.

Cervicofacial Actinomycosis.—The lesions in the case reported by Torres were on the face and neck of a working man of 43, the third case of actinomycosis he has encountered. As in the other cases, the diagnosis had been cancer at first. Treatment with sodium iodid and arsphenamin has been begun.

Dec. 6, 1919, 33, No. 49

*Ichthyosis. Werneck Machado.—p. 385.

Epidemic Poliomyelitis in Uruguay. V. Escardo y Anaya.—p. 389.
Cont'n.

***Ichthyosis.**—Werneck Machado gives an illustrated description of three cases of ichthyosis in children now under treatment in his service. He knows of only five other cases in Brazil. Two of his own three cases are brother and sister, and others tell of cousins with the same trouble. In two of these eight Brazilian cases the infants were 2

and 4 months old, but one patient is a young man. The parents were cousins in one case, and inherited syphilis was evident in two others. In treatment, besides the general tonics and special measures, efforts to rouse the skin to better functioning are indicated, and among these he commends in particular jaborandi and its alkaloid, pilocarpin. Fox ascribes to thyroid treatment the recovery in his case. Polyglandular treatment might prove more effectual in other cases. Great improvement was realized under mercury and potassium iodid in one child with a syphilitic father. In addition to other external measures, steam baths and Russian baths have proved useful.

Crónica Médica, Lima, Peru

October, 1919, 36, No. 676

- *Bacillary Dysentery in Peru. E. Escamel.—p. 339.
- *Urinary Calculi. C. Morales Maccdo.—p. 342.
- *Pathogenesis of Delirium Cordis. M. Arias Schreiber.—p. 350.
- Forensic Case of Oxalic Acid Poisoning. L. Avendaño and M. A. Velásquez.—p. 353.
- *Case of Hirschsprung's Disease. E. P. Manchego.—p. 359.

Bacillary Dysentery in Peru.—Although Escamel has made it his routine practice for fifteen years to examine the stools in cases of dysentery, he never found any bacilli that could be incriminated except in an epidemic of dysentery at Yura in 1917, and this did not spread beyond the limits of the town. The dysentery proved amenable to the treatment which has yielded such constantly good results in trichomonosis by his technic. His method has been described in these columns, May 17, 1919, p. 1501. It consists essentially in three enemas daily composed of 15 or 20 drops of oil of turpentine emulsified with the yolk of one egg and 60 gm. of distilled water, and from 5 to 20 drops, according to age, of laudanum. Each enema is retained as long as possible. An astringent, bismuth salicylate, and camphorated tincture of opium are given by the mouth, with hot applications to the abdomen every two hours. The prompt recovery under this combined treatment seems to indicate that these bacilli live in the rectum, as a rule. The liver returned to normal as the other symptoms subsided, which testifies that the liver complications are of toxic origin, the hemorrhoidal veins providing a ready means of access for the toxins from the rectum. Escamel was recently awarded a prize by the Académie de médecine at Paris for his notable contributions to the knowledge and treatment of tropical diseases.

Operative Indications for Calculi in Kidneys or Ureters.—Morales reviews nine different conditions that may be induced by renal lithiasis, and the indications with each. As general contraindications he cites syphilis and tuberculosis, which should be given treatment before operating for stone, outside of emergency cases. The operation also should be postponed with gonorrheal arthritis, or very violent gonococcus infection of any kind. The temperature and lack of any recent great loss in weight are also instructive. The heart, blood pressure, blood count, etc., should never be neglected, and with very nervous patients, it may be advisable to delay the operation until a course of psychotherapy has been given.

Delirium Cordis.—Arias presents evidence to show that fibrillation may be of nervous origin in some cases. This explains the cases in which the general condition keeps good, notwithstanding the permanently irregular pulse.

Megacolon.—Manchego's patient was a man of 38 and the Hirschsprung disease was not recognized until the abdomen had been opened by an exploratory laparotomy.

Medicina Ibero, Madrid

April 26, 1919, 7, No. 77

- Traumatic Shock. E. Díaz y Gómez.—p. 61. Cont'n.
- Syphilitic Facial Paralysis. Miguel F. Criado.—p. 63.
- The Manic-Depressive Psychoses. R. Alvarez Salazar.—p. 64.
- Nervous Disturbances in Children. H. Rodríguez Pinilla.—p. 78. Cont'n.

Dec. 6, 1919, 9, No. 109

- Auscultation of the Pulse. A. Crespo Alvarez.—p. 177.
- Expulsion of Giant Gallstone. Santiago Carro.—p. 179.

Prensa Médica Argentina, Buenos Aires

Nov. 30, 1919, 6, No. 18

- *Treatment of Fractured Leg. A. F. Celesia.—p. 181.
- *Liver Tumor in Infant. Casaubon and Bacigalupo.—p. 183. Cont'n.
- *Psychology of Aphasia. Enrique Mouchet.—p. 187.
- *Wiring of Aneurysm. Nicolas Tagliavacche.—p. 189.

Fracture of the Tibia.—Celesia is delighted with the results obtained in twenty cases with a light plaster cast applied to allow free use of the knee and ankle after fracture of the tibia. The patient could walk about while the fractured bones were healing under the immobilization, the plaster collar above and below fitting against the tuberosities of the tibia and the malleoli. The patients are walking by the second or third day, and the muscles keep well nourished and strong.

Liver Tumors in Infants.—Casaubon and Bacigalupo report a liver tumor in a 10 months babe. Several photomicrographs are given, and 33 cases of neoplasms in the liver in children are tabulated as compiled from the literature, and 11 cases of metastatic liver cancer. The primary tumor was in the right kidney in 4; in the left in 5, and in the pancreas in 2. In one infant of 2 months a sarcoma had developed in both liver and suprarenal at the same time. These cases supplement the 28 compiled by Steffen.

The Psychology of Aphasia.—Mouchet describes a case of aphasia in a man of 63 and lists sixty-six titles on the psychology of aphasia.

Wiring an Aneurysm.—Tagliavacche gives an illustrated description of an aneurysm of the descending aorta in which marked improvement followed wiring, introducing 21 meters of copper wire. The patient is a man of 64 in such a grave general condition that long survival is not to be expected.

Dec. 30, 1919, 6, No. 21

- *Chronic Mediastinitis from Tardy Inherited Syphilis. M. R. Castex and J. J. Beretervide.—p. 213.
- *Chronaximeter. V. Tedeschi.—p. 217.
- Influenza Bacillus Meningitis in Infant. J. P. Garrahan and C. Gourdy.—p. 220.
- Arrhythmias. P. M. Barlaro.—p. 221. Continuation.

Chronic Mediastinitis from Tardy Inherited Syphilis.—Castex and Beretervide say that chronic mediastinitis of syphilitic origin in children has been well studied and also from acquired syphilis in adults, but they do not know of any case like the one they describe in a man of 28 in which there were other manifestations of inherited syphilis, and the mediastinitis was a recent tardy development. The compression of the vena cava dominated the clinical picture. The slow but progressive improvement under specific treatment showed that the trouble was from gummas rather than from irreparable sclerosis.

Electric Device for Electrodiagnosis.—Tedeschi gives an illustrated description of his apparatus which, he says, avoids the errors of other chronaximeters and similar apparatus. The current passes merely during the impact of two elastic balls.

Semana Médica, Buenos Aires

Nov. 6, 1919, 26, No. 45

- *Ankylosis of the Knee. J. M. Jorge.—p. 539.
- *Poisonous Anise. J. V. Negrete and C. F. Velarde.—p. 554.
- *Percutaneous Tuberculin Treatment. S. de Madrid.—p. 565.
- *Cyst in Infant's Spleen. J. Bacigalupo and A. Grosso.—p. 576.
- Resolutions Adopted by Argentine Tuberculosis Congress.—p. 578.
- *Eugenics. L. Mathé.—p. 581.

Ankylosis of the Knee.—Jorge gives roentgenograms of ten cases of ankylosis calling for surgical treatment. He warns that it must not be forgotten that the tissues around the joint are less resistant than normal, and cannot stand much pressure. He warns further that typical resection of a joint should not be done on a child either for arthritis or ankylosis. One of the illustrations shows the irreparable damage done by resecting the knee for a tuberculous process at the age of 14. Jorge reiterates that the epiphyseal cartilage should always be held absolutely sacred and left unmolested.

Toxicity of Japanese Star Anise.—Negrete and Velarde have been studying samples of *Illicium religiosum* which had caused sickness in a number of children. It is evidently a poison for the central nervous system, inducing in all the

laboratory animals tested periodical or subcontinuous convulsions and paresis. The symptoms are so typical that it might prove useful as a drug for biologic tests.

Tuberculin Treatment by the Percutaneous Route.—De Madrid has given this treatment in hundreds of cases and here defines its indications and contraindications, and extols its importance as an adjuvant to other measures.

Cyst in Spleen.—The cyst was found in an infant cadaver, the child having died from bronchopneumonia. No symptoms had called attention to the spleen.

Eugenics.—Mathé defines eugenics as applied physiology and biology extended to include collective life. Physicians must take the lead in the new science, he declares, but they must secure the cooperation of sociologists and legislators. Eugenics is closely connected with the fight against alcohol and overcrowding, tuberculosis, and syphilis.

Siglo Médico, Madrid

Dec. 20, 1919, 66, No. 3445

Incontinence of Urine in Children. F. González Aguilar.—p. 1097. Conc'n in No. 3446.

Epidemic Poliomyelitis. G. Hurtado.—p. 1101.

Epidemic Poliomyelitis.—Hurtado has applied in a number of cases of advanced poliomyelitis, treatment by light, heat and repose according to the method advocated by Flexner and Lucy O. Wight. The details of a few typical cases are given, the paralyzed children regaining the use of their limbs, although some still tire easily and there is a little atrophy of the members. But even in these, the condition is immeasurably improved.

Berliner klinische Wochenschrift, Berlin

Nov. 3, 1919, 56, No. 44

*Radiotherapy in Erythremia. Forschbach.—p. 1034.

*Staining of Guarnieri's Bodies. E. Hesse.—p. 1035.

*Kidney Function in Diabetic and Postdiabetic Conditions. P. Weil.—p. 1037.

*Pleural Tumors. E. Kornitzer.—p. 1039.

Critical Studies on Malaria and Staining Technic. H. Simons.—p. 1041. Begun in No. 43, p. 1009.

Proposed Reforms in Medical Course. O. Lubarsch.—p. 1044. Conc'n.

Exceptionally Long Roentgen-Ray Treatment Finally Successful in Case of Polycythemia.—Forschbach reports a case of erythremia that required an unusually long period of roentgenotherapy before the cure was finally realized. The patient, a man of 61, was admitted to the hospital in 1912, complaining of pains in the epigastrium, dizziness and rush of blood to the head. The findings in May, 1912, were: cyanotic appearance of the face; mild peripheral arteriosclerosis; enlargement of the spleen and liver; blood pressure, 165; erythrocytes, 6,000,000. The diagnosis was the hypertonic form of erythrocythaemia rubra. By July, 1916, his condition had grown much worse. At times, on account of dizziness, the patient could not walk alone. The erythrocyte count now varied from 7,000,000 to 12,500,000; hemoglobin was from 100 to 150 per cent.; the white cell count was from 10,700 to 13,600; the urine contained, from time to time, albumin and casts. Venesection brought no relief. July 22, 1916, deep roentgen irradiation of the long bones was begun. The irradiation period usually covered eight days, and was followed by a week's rest, at first; later, the intervals depended on the appearance of the blood picture. The first two periods of treatment had no effect whatever on the blood picture, so the treatments were discontinued, although the patient himself protested that irradiation had brought subjective relief. In the meantime Forschbach's attention was called to the case of Tancre, in which a reduction of the red corpuscles from 14,200,000 to 6,600,000, and of the hemoglobin from 175 to 163 per cent., was brought about. Forschbach was thus encouraged, after the lapse of a year, to recommence treatment in September, 1917. The long bones were treated in the same manner as before, but with longer pauses. Not until after the eighth period of treatment, given from April 9 to May 11, 1918, did the red cell count begin to fall rapidly. By Sept. 13, 1918, it had fallen to 3,300,000 and the hemoglobin to 62 per cent. The treatments were discontinued and by April 23, 1919, the red

cell count was 4,796,000 and the hemoglobin 90 per cent. There was also very great improvement in the subjective symptoms. For duration of treatment Forschbach thinks that his case surpasses all reported thus far. He warns that an exceedingly careful control of the red and white cell count must go hand in hand with the use of roentgenotherapy in erythremia in order to avoid serious leukopenia. Premonitory lowering of the white cell count is an indication to lengthen the intervals of rest between the exposures to the rays.

Staining of Guarnieri's Bodies.—Hesse has been trying to improve on previous methods of staining Guarnieri's bodies (vaccine bodies arising in the corneal epithelium of rabbits inoculated with vaccine lymph). He sought a quick method by which only the Guarnieri bodies would be stained, the cell nuclei, leukocytes and the products of cell degeneration remaining unstained. In preparing his stain he used 10 c.c. of a saturated alcoholic solution of cresyl-fast violet (Grübler) added to 90 c.c. of a 5 per cent. phenol solution. The stain is thoroughly mixed and filtered, and can then be used at once. After the slides have been washed with xylene to remove the paraffin, and the xylene has been removed by means of absolute alcohol, the sections are stained for from fifteen to twenty minutes with the cresyl-fast violet; and, without being rinsed in water, a fresh 2.5 per cent. aqueous solution of ammonium ferric sulphate is used as a mordant. The slides are now rinsed in distilled water and are put for differentiation in a 60 per cent. aqueous solution of acetone. The differentiation requires from twenty to thirty minutes, and, until one is thoroughly experienced, should be observed under the microscope. Thus the moment when the cell nuclei and leukocytes have given off the last bit of stain may be ascertained; while, it will be noted, Guarnieri's bodies are distinctly differentiated by a rather dark violet hue. Hesse's investigations with the above described stain lead him to the conclusion (which he considers important) that Guarnieri's bodies are not derived from the nuclei of leukocytes or epithelial cells. The fact that Guarnieri's bodies have entirely different staining characteristics, together with their peculiar structure, indicates, Hesse thinks, their specific origin.

Kidney Function in Diabetic and Postdiabetic Conditions.—Weil distinguishes three forms under which albuminuria may be combined with diabetes: (1) A harmless albuminuria, associated with glycosuria and receding with the disappearance of the sugar, or with the decrease of the high sugar content (saccharogenic albuminuria so called); (2) albuminuria caused by a complicating arteriosclerosis or arteriolosclerosis (diabetic nephrosclerosis), and (3) albuminuria produced by genuine nephritic processes (diabetic nephritis or nephrosis). He states that recent progress in the examination of diabetics has made possible a closer differentiation between benign and malignant forms of nephrosclerosis. He thinks, therefore, that in diabetic nephrosclerosis kidney function tests should be made more frequently than has been done in the past. Often the functional activity will be found to be the same as in simple nephrosclerosis, so that, for the time being at least, the prognosis is more favorable than it would otherwise appear. In other words, from the diagnostic and prognostic standpoint, diabetic nephrosclerosis may be viewed in much the same light as nondiabetic nephrosclerosis.

Myoma of the Pleura.—Kornitzer was unable to find in the literature any descriptions of pleural myomas, as in a case reported. His patient, a man, aged 40, was admitted to the hospital, July 27, 1917. Examination revealed dullness over the right thorax, and respiratory and vocal fremitus could not be elicited. Subfebrile temperatures were noted. Puncture revealed hemorrhagic fluid. The diagnosis was hemorrhagic pleuritis. The disease took a rapid course. August 13, pleural puncture was done and one-half liter hemorrhagic fluid was removed. August 16, the patient died. Necropsy revealed a poorly nourished but strongly built man. On loosening adhesions of the left lung, a round, apple-sized tumor of tough, elastic consistency was found on the posterior surface of the inferior lobe. The tumor,

which Kornitzer calls a fibroleiomyoma, was enclosed in a hard capsule. There were no very firm adhesions between the tumor and the surrounding tissues, but it was attached to the lung by a fibrous strand. This fibrous strand and the free surface of the tumor were covered with pleural endothelium, which was connected with the endothelium enveloping the lung. At the cut surface the tissue was grayish yellow. In the center of the tumor were cavities as large as a cherry, though not sharply outlined. In the right pleura an endothelioma was found, from which, besides numerous other metastases, one of microscopic size had developed in the above described fibromyoma. Kornitzer thought, at first, that the subpleural tissue might perhaps be assumed to be the point of origin of the fibromyoma, but he found in the textbooks on comparative anatomy and embryology no reference to smooth muscle fibers occurring in the pleural tissue. He thinks, therefore, that we must assume that muscle cells, cast off from the walls of blood vessels, constituted the tissue from which the tumor took its origin.

Münchener medizinische Wochenschrift, Munich

Nov. 7, 1919, 66, No. 45

- *The Spring Apex of Tetany. E. Moro.—p. 1281.
- *Treatment of Surgical Tuberculosis. E. Kisch.—p. 1283.
- *Urology and the General Practitioner. F. Schlagintweit.—p. 1284.
- *Human Fat (Humanol) in Surgery. F. Loeffler.—p. 1290.
- *Extirpation of Enlarged Spleen. F. Kleeblatt.—p. 1291.
- *Gangrene of the Bladder Following Carcinoma Operation. H. Hisgen.—p. 1292.
- *Treatment of Old Ulcerating Wounds. R. Pürckhauer.—p. 1293.
- Splint for Fractured Radius. Asam.—p. 1293.
- So-Called Ulcer Carriers. G. B. Gruber.—p. 1294.
- *Abuse of Phenolphthalein. L. Schliep.—p. 1294.

The Spring Peak of Tetany.—Moro's curves confirm the seasonal prevalence of tetany, its gradual increase during the fall and winter months, to its apex about March, when it falls sharply, and then drops off more gradually until midsummer. In adults with a tendency to tetany, as spring approaches, the skin of the hands often feels dead or leathery. Moro connects these facts with the markedly increased irritability of the vasomotor nerves and the vegetative nerve system, and with the increased activity of internal secretions that regularly occur in spring. He adds, "It has been said, 'Night is the time of the unstriated muscle,' and the awakening of the instincts in the animal kingdom shows that it can be said likewise, 'Spring is the time of the internal secretions.'"

Treatment of Surgical Tuberculosis.—The conditions of the war period in Germany, Kisch says, have caused not only a deplorable increase of tuberculosis, but the disease appears also in more serious forms. In surgical tuberculosis, the patients usually have, either simultaneously or consecutively, several foci of infection, often as high as seven or more, and they are characterized by profuse supuration. The large number and wide extent of the foci, together with the weakened general condition of the patients, and their vast numbers, make it impossible to apply operative measures in all the cases of tuberculosis of the bones, joints, and glands. Kisch employs heliotherapy (natural and artificial) aided by passive hyperemia, and administers sodium iodid. As regards tuberculin treatment, he thinks it will, when used alone, effect a cure only in selected cases. He himself has effected cures by its exclusive use in spina ventosa and scrofuloderma in children, and beginning soft swellings of the lymphatic glands have disappeared. Heliotherapy is applicable to all cases. Kisch states that in the sanatorium associated with the Berlin university surgical clinic, in the majority of cases, immediately after a tuberculous focus has cleared up, or even before, tuberculin treatment is instituted to prevent new foci. Occasionally, because of unfavorable reactions, further tuberculin treatment is contraindicated. Under heliotherapy as described by Kisch, patients with unusually severe tuberculosis of the joints have been cured, and a normal, or at least adequate, function of the joints has been restored. A number of patients over 50 and even 60 years old, with severe tuberculosis of the spine, have been cured. Patients with severe tuberculosis should always be treated in sanatoriums far removed

from large cities, where they can get the maximal benefit from sunlight and fresh air. Mild cases may be treated in sanatoriums located at the edge of large cities, so that patients, if necessary for financial reasons, may continue to follow their calling.

Urology and the General Practitioner.—This six-page article is made up of material used by Schlagintweit in a graduate course of lectures. He regrets that most general practitioners have never taken a thorough course in urology. By the average practitioner the kidneys are looked on and studied as one connected organ, whereas the urologist carefully considers the function of each kidney separately. He says that 33 per cent. of all chronic, suppurative processes of the urinary apparatus are of a tuberculous nature. The presence of white corpuscles in the urine is the most significant urinary symptom. Pollakiuria in the daytime, but not at night, can be only of nervous origin, especially if micturition is not painful or difficult, for any inflammatory irritation or congestion of the bladder or the region of the vesical sphincter will awaken the patient at night by the desire to urinate. Under such conditions, when the bladder fills to a certain degree, it manifests itself as regularly as an alarm clock. In the case of an old man, frequent desire to urinate at night, provided he has to strain and wait for the flow to begin, or has to walk around a while first, may be taken as a sign of hypertrophy of the prostate. The cardinal urologic symptoms which Schlagintweit regards as indicating the urgency of a thorough instrumental diagnosis and therapeusis, possibly necessitating local or general anesthesia are: (1) acute retention of urine; (2) unendurable pain, especially colicky pain; (3) fever; (4) total anuria; (5) chronic uremia; (6) rapid emaciation, and (7) severe hemorrhage. Aside from the foregoing indications, all urologic diseases may be profitably treated by rest in bed, application of heat and the administration of mild narcotics, for two or three weeks, until the true condition of affairs can be cleared up. Urologic diseases, especially those of the lower urinary passages, that do not clear up promptly following rest in bed, are usually due either to some mechanical cause or to some pathologic condition of the upper urinary passages; for example, a cystitis arising from a pyelitis or prostatitis. We must never assume that a pyelitis that has existed for years is incurable without considering that the condition may be unilateral, and that it may be cured by unilateral nephrectomy.

Value of Fluid Human Fat (Humanol) in Surgery.—This article is a preliminary report of Loeffler's experimental use of humanol (fluid human fat) in surgery. He has been using humanol for three years and it has given excellent results. Humanol is obtained from the fatty tissue secured in connection with operations (abdominal fat, lipomas, etc.). All connective tissue is removed, and the fat is then heated for three hours over a water bath and filtered. Only the fat of healthy persons is used. Good results were secured by using humanol for the isolation of tendons and nerves from adhesions, and to prevent the formation of new adhesions. After the tendon or nerve has been removed from surrounding adhesions and all hemorrhage has been stopped, the wound is closed, leaving a pinhead opening just large enough to admit the tip of the syringe. The suture is drawn tighter, the humanol is injected, and the suture is then tied. Light effleurage spreads the humanol around. The wound heals well, and the cicatrix is soft and elastic. In numerous tendon transplantations on the foot, in infantile paralysis, humanol was used, and there were no disturbances caused by adhesions. In hand and finger injuries humanol found its widest application. Loeffler has not been able to discover that humanol softens scars as claimed by Wederhake. In joint injuries (arthritis deformans, arthrogenous contractures) it was found useful. Iodoform glycerin had come to be regarded as most valuable in treating the rapidly increasing number of cases of tuberculosis of the bones and joints. But glycerin became scarce and was of poor quality. Then again, a high fever was often caused by the injection of small quantities of iodoform glycerin. Accordingly, Loeffler used 5 or 10 per cent. "iodoform humanol," injections of

which gave exceptionally good results. Iodoform glycerin has therefore been discarded. As humanol is absorbed within from five to seven days after subcutaneous injection, Loeffler cannot recommend its use for plastic purposes. If mixed with animal and vegetable fats (e. g. tallow), the humanol is absorbed, while the other ingredients are left as a foreign body.

Indications for Splenectomy.—Kleeblatt states that the spleen is being removed nowadays in all sorts of cases, without very clear indications therefor. However, after other forms of treatment have failed, tumors of the spleen, associated with kala-azar and malaria may justly be removed for mechanical reasons; for example, on account of rupture or too great size. Now that we assume that leukemia is a systemic disease affecting the lymphatic glands and the bone marrow, and that the enlargement of the spleen is only an accompanying phenomenon, the failures following extirpation of the spleen should no longer cause surprise. Removal of the spleen for polycythemia is not indicated, for the reason, he says, that the disease, though it has various etiologic factors, has nothing to do with the spleen. Küttner and others have reported cases of polycythemia arising after extirpation of the spleen. In isolated tuberculosis of the spleen, removal of this organ rests on a good basis. It is also indicated in all diseases attended with severe hemolytic processes; for example, hemolytic icterus, hypertrophic cirrhosis of the liver and atrophic cirrhosis (Banti's disease) in the first and second stages, but only as a last resort in the third stage. In pernicious anemia the good effects are transitory. Splenectomy is contraindicated in thrombosis of the portal vein and all disease processes caused by primary portal stasis. The urobilin excretion as a measure of the hemolytic processes in the body (Eppinger), Kleeblatt thinks, may eventually make clear the indications for extirpation of the spleen.

Gangrene of Bladder Following Vaginal Carcinoma Operation.—A long convalescence followed an uneventful operation for carcinoma of the portio vaginalis performed by Hisgen on a 28-year-old nullipara. After the operation the patient presented a septic appearance. The urine contained more and more blood, and by the seventh day had a strong odor. Bladder lavage was done and hexamethylenamin was administered. On the seventeenth day the lower end of the abdominal incision began to swell, and on the twenty-fifth day it broke open, and an incredible quantity of foul-smelling fluid was evacuated. A piece of necrotic tissue almost the size of a man's hand appeared in the wound and was removed. The palpating finger was able to touch through the fistula a catheter introduced through the urethra. It was thus evident that there was an extensive defect in the bladder wall. A retention catheter was inserted in the urethra and lavage several times daily was done. The temperature gradually became normal, the urine clearer, and the odor less noticeable. In three weeks the fistula in the abdominal wall had closed and the catheter was removed. Two months after the operation the temperature was normal. The patient was free from subjective symptoms, but was much emaciated. The cystoscopic examination, just before the patient was dismissed, revealed that the region of the trigonum was scarcely changed; both ureters were functioning normally. At the base of the bladder, next to the posterior wall, there was whitish, shiny tissue (doubtless scar tissue). In three months the patient had completely recovered. The primary cause of the condition was doubtless deficiency of the blood supply owing to the bladder wall having been detached to such an extent. Secondly, an infection from the wound cavity in the pelvis destroyed completely the badly damaged portion of the bladder wall. Whether adhesions had roofed the space could not be definitely ascertained, but, in any event, the patient can now retain the same amount of urine as before the operation.

Treatment of Old Ulcerating Wounds.—Pürckhauer reports his success in using Drehmann's method of treating old ulcerating wounds, and regrets that the method is not better known, as the prompt results secured make it worthy of the widest recognition. The physiologic principle on which the

method is based is the securing of a better blood supply by removing obstructing factors. The wound is scraped with a sharp curet, and then a circular incision is made in the surrounding healthy tissues down to the fascia, and even through the fascia, in case there are strongly supporting bones, as, for example, in the front of the leg. The edges of the wound are approximated by means of adhesive strips. After about five days the strips are removed, showing surprisingly good results. The base of the wound, which had presented a dead appearance, is covered with fresh, lively granulations, and the surface of the wound is considerably smaller. Fresh adhesive strips are applied and in a short time the wound is healed. Rest in bed must be strictly observed. Pürckhauer has thus succeeded in causing wounds to heal that had defied all other treatment for months and even years. Some of the ulcerating surfaces had been as large as a saucer.

The Abuse of Phenolphthalein.—In view of the fact that Fuld's warning uttered in 1909 does not seem to be heeded, Schliep calls renewed attention to the fact that phenolphthalein even in small doses of 0.1 gm. [the U. S. P. average adult dose is 0.15 gm.] may cause serious hemorrhagic nephritis attended by severe anemia. He regrets especially that phenolphthalein is used as an ingredient of biscuits, cakes, chocolate confections, bonbons, drops, etc., as these are given to children in indiscriminate quantities without a physician's prescription. Schliep has compiled a list of seventy-two proprietaries containing phenolphthalein, which he reports in full, and cites a few cases of severe phenolphthalein poisoning in Germany. One man of 59 had transient heart failure and nephritis after he had taken only 0.6 gm. in the course of twenty-four hours. In two other cases there were hemorrhagic nephritis and jaundice with serious collapse.

Therapeutische Monatshefte, Berlin

November, 1919, 33, No. 11

*Intraspinal Medication. G. Neumann.—p. 401. Conc'n.

*Thermal Baths in Cardiovascular Disease. Grunow.—p. 406.

*Puncture Treatment of Anasarca. R. von den Velden.—p. 417.

*The Capacity for Synthesis of the Human and Animal Cell. Grumme.—p. 421.

Intraspinal Treatment Exclusive of Serotherapy.—The first instalment of Neuman's article was briefly summarized on page 143. The final conclusions of the article state that the outcome of intraspinal treatment of tuberculous meningitis with tuberculin and of tetanus with silver preparations is dubious, and that intraspinal treatment with magnesium sulphate is fraught with danger and can be replaced by other methods. Intraspinal administration of drugs seems to have benefited in treating meningitis with sodium chlorid solution, Ringer's fluid, optochin, and silver preparations. But the number of cases to date is too small for a conclusive judgment. A decision is most difficult in respect to the effects of intraspinal administration of arsphenamin. It has proved unquestionably successful in certain cases of neurosyphilis, but this generally responds well to treatment by the vein. The clinical symptoms in tabes and progressive paralysis do not always keep pace with the serologic improvement. To date there is no evidence to prove that tabes and paralysis can actually be arrested by intralumbar treatment, as some maintain. She concludes the article with the remark that the dangers of intraspinal treatment seem great, and out of all proportion to the benefit therefrom. It should be applied only after failure of other measures. A bibliography giving the titles of sixty-six articles is appended, including three from THE JOURNAL.

Thermal Baths with Cardiovascular Disease.—Grunow refers to thermal mildly saline, noncarbonated waters, supposed to be strongly radioactive, and discusses the indications and contraindications. An especially favorable influence may be expected with arteriosclerosis and intermittent limping; aortic defects; syphilitic vascular lesions; gout and obesity, provided the myocardium with the latter is functionally capable; and neuroses of the heart and vascular system. The waters soothe the tendency to spasm and dilate

contracted vessels, but special care is necessary when there is a neurotic tendency. The finest results have been realized in Raynaud's disease and similar conditions.

Puncture in Treatment of Edema.—Von den Velden comments on the dread which general practitioners so often display in respect to tapping anasarca. He gives the tracings from two of twenty-three cases in which the benefits from puncture were particularly striking. In one, the weight dropped 16 kg. in three days after puncture of the skin on both legs; in the other case 13 liters of edema fluid drained away in one day, to a total of 25 liters by the sixth day. The puncture is done with a fine trocar, 0.5 to 1.5 cm. deep, in a series of from five to fifteen rows of puncture holes, 1 or 2 cm. apart, on the foot or leg where the edema is the most pronounced. From fifty to eighty puncture holes were thus made on each leg, as a rule, and the results far surpassed those with incisions and cannulas. Small incisions heal up too quickly; large ones heal badly. The patient is prepared three or four hours beforehand by shaving the legs and wrapping them in cloths moistened with alcohol or mercuric chlorid solution, as he sits in an easy chair, the feet on a soft stool. The punctures take only a few minutes, only two minutes with practice, and the legs are then wrapped anew and the patient stays in the chair for at least a day. The dressings are changed twice in twenty-four hours, and no disinfectants are used. A little morphin beforehand may be advisable.

Assimilation of Inorganic Mineral Salts.—Grumme presents arguments to prove that inorganic iron cannot be assimilated, as also all mineral salts not combined with albumin, and he refuses to accept the statements in the literature to the contrary. He declares that the experiments and experiences on record do not justify the conclusions that have been drawn from them. Inorganic iron, he insists, has merely a stimulating action. The only iron or calcium that is assimilated is that in the food, as it is combined with groups of albumin atoms. Animals perish when they are deprived of organic iron, even although they may be getting large amounts of inorganic iron. It may be possible, he suggests, to add to iron-poor food some artificially prepared combination of albumin and iron which might be readily assimilated and bring the food up to the required level of organic iron.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 15, 1919, 2, No. 20

*Examination and Diplomas. G. van Rijnberk.—p. 1513.

*Whooping Cough. B. H. Sajet and J. van Gelderen.—p. 1525.

Hospitals and Sickness Insurance. C. W. Vrendenberg.—p. 1546.

Examinations.—Van Rijnberk discusses what examinations are good for and what they should be. A passage from a recent work by B. Fischer is quoted which states that in Germany the incompetents are not weeded out by the examinations, "so that there is no one so feeble-minded or incompetent (aside from the insane requiring internment) that cannot in time and finally pass the examination for the medical degree."

Whooping Cough and Its Prevention.—Sajet and van Gelderen analyze the statistics in regard to whooping cough at Amsterdam since 1890. Among the curious facts thus brought out is the increase in the mortality from whooping cough from 3.81 to 5.99 per cent. of the general mortality in 1890-1899 and 1907-1916, respectively. Another fact is the higher mortality in the northern and western parts of the country, and in the bleaker months. Children of the poorer classes contract whooping cough from their mates while quite young. Only 10 per cent. developed it during the school years, while the children of the well-to-do escaped it young, 37 per cent. acquiring it in school. As whooping cough grows less and less dangerous for a child after the age of 5, this testifies to the graver danger from whooping cough for the children of the masses. The mortality under 1 year was 42.3 per cent.; from 1 to 5, 55.9 per cent., and above the fifth year only 1.8 per cent. It is mentioned further that the mortality from whooping cough was three and a half times smaller in Jewish families than in others. In prophylaxis

they urge the special importance of protecting the younger children against infection with whooping cough. Every child admitted to an institution for quite young children should be regarded as suspected of various acute infectious diseases until time proves the contrary. They advocate that compulsory notification should be enforced, and a service for combating acute infectious diseases should be organized, as also ample hospital facilities for whooping cough children.

Acta Medica Scandinavica, Stockholm

Jan. 23, 1920, 52, No. 5

*Muscular and Reflex Segmentation of Abdominal Wall. G. Söderbergh.—p. 647.

*Changes in the Blood After Experimental Feeding with Spleen Tissue. A. Brinchmann.—p. 689.

Neurology of Abdominal Wall.—Söderbergh's article is in French. He reviews his previous researches and adds the results of new on the innervation of the abdominal reflexes, according to the segment of the spinal cord and roots involved. Eleven clinical cases of spinal paresis or meningitis are analyzed. It must be borne in mind, he says, that the motor and reflex symptoms are more objective than the sensory symptoms. Also that the extramedullary tumors are almost all located in the dorsal region of the cord. The extent of the area of rigidity is instructive.

The Blood on a Spleen Tissue Diet.—Brinchmann fed guinea-pigs and rabbits on fresh beef spleen, and devotes nearly a hundred pages to minute analysis of the changes in the blood on this diet. Within two hours after the meal the number of both red and white corpuscles is much reduced, the reds dropping off by 11 per cent. and the whites by 21 per cent. on an average, the lymphocytes by 37 per cent. The blood usually had returned to normal by the end of two hours.

Hygiea, Stockholm

Jan. 16, 1920, 82, No. 1

*Operative Treatment of Embolism. H. Sundberg.—p. 1.

*Some Ancient Remedies. H. Kjerrulf.—p. 12.

Operative Removal of Embolus.—Sundberg reports another successful case to add to the 6 on record in which an embolus was removed from an artery (exclusive of the pulmonary artery), with a permanent cure. These 6 are the only permanent cures from arteriotomy in the total of 20 cases he has compiled, and in 4 of this group of 6 the operation had been done by a Swedish surgeon. In his own case the patient was a man of 63 with myocarditis and extensive arteriosclerosis, and the embolus was drawn out, and the artery sutured afterward with button sutures, the suture taken only through the outer and middle coats, using a fine curved needle and extremely fine silk lubricated with petrolatum. There was no bleeding, and the man has had no further disturbances from it since. Sundberg ascribes the lack of thrombosis later to the exact coaptation of the walls of the artery and the fact that no sutures entered the intima. The patient was the oldest one on whom such an operation has been performed, and the heart disease and arteriosclerosis and the long interval render the success all the more striking. In Proust's case the interval was fourteen hours and the thrombus was 12 cm. long; in Lundmark's case, ten hours, and 3 cm. long, and in the present case, twelve hours and the thrombus was 86 cm. long. The operation was done under local anesthesia and 0.015 gm. morphin. The longitudinal incision was 2 cm. long, just at the point of the bifurcation of the common femoral artery. The upper end of the embolus was drawn out and the spurting blood was arrested by clamping above, and clamping the deep femoral. The continuation of the thrombus in the superficial femoral was then seized with forceps and gently pulled out in one piece. Convalescence was retarded by a slight thrombophlebitis, but since then there have been no disturbances in the leg.

Ancient Remedies.—Kjerrulf gives a historical sketch of the *acqua magnanimitatis* of the seventeenth century, and of the use of formic acid as a drug, which was of still older origin.

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GENERAL PROGNOSIS OF SYPHILIS IN THE LIGHT OF RECENT PROGRESS

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The additions to our knowledge of syphilis during the last two decades are: (1) the discovery of the spirochete; (2) the Wassermann test, and (3) the new organic arsenic compounds. To these achievements of primary importance may be added the use of the dark-field microscope and the employment of spinal puncture for diagnostic and therapeutic purposes.

DISCOVERY OF THE SPIROCHETE

The discovery of the spirochete is one of those fundamental additions to our knowledge, the ultimate effect of which it is impossible to gage. The whole field of experimental syphilis has been placed on a scientific basis, and progress is as inevitable as it was in other fields after the discovery of the germs of diphtheria, tetanus, etc. A vista of unlimited possibilities has been opened.

In the meantime this discovery has added a factor that has enormously improved the general prognosis of syphilis. It may be stated that there is no factor in the prognosis of syphilis that is comparable in importance with early and energetic treatment. The syphilis that has been generalized in the system, that has infected every organ and tissue, that, in the course of years, has induced sclerotic changes in important structures, presents an entirely different prospect of cure from the disease in its incipience. The treatment of syphilis by the vigorous exhibition of arsphenamin in its primary stage, while the disease is still largely a local infection and before the organisms have acted long enough on the tissues even to provoke the development of a positive Wassermann reaction, results in the immediate cure of the disease in practically every case. It is in its primary stage that the prognosis of a properly treated case of syphilis is at its very best. On this point there is universal agreement among syphilographers.

Twenty years ago this golden opportunity for the cure of the disease, even if we had then possessed the potent remedies now at our command, would have been allowed to pass. Twenty years ago it was the accepted practice to await the development of secondary lesions before instituting treatment. This practice was entirely justified in the existing state of knowledge. It was, as it is today, an admitted fact that the diagnosis of syphilis based on the clinical aspects of the initial lesion cannot be made with absolute certainty. On the one hand, the supposed chancre might not be syphilitic

and the patient therefore was subjected unnecessarily to the anguish and the hardship of a prolonged course of treatment; or, on the other hand, the institution of treatment in the primary stage, by suppressing the secondary manifestations, would in the majority of cases result in a doubt of the diagnosis on the part of the patient with consequent neglect to pursue the treatment to its end.

It is today a common experience for syphilologists to hear from a tabetic or an old cardiac syphilitic the story of a slight sore, its cauterization by the physician, the taking of some pills for a few weeks, and then nothing more in the way of treatment or of symptoms till the grave and possibly hopeless lesions of the late syphilitic made themselves manifest. It was, therefore, correct practice twenty years ago to await the development of secondary lesions, not only for the purpose of establishing the diagnosis on a firm basis, but also to convince the patient of the correctness of the diagnosis and thereby insure a greater fidelity to treatment. Waiting until the appearance of secondary lesions, however, meant waiting until there was a wide invasion of the system, waiting until a profound spirochetal septicemia was established. In the case of any other local infection, no one would think of postponing for a single moment the steps necessary to prevent systemic infection. Today, through our knowledge of the spirochete, with the aid of the dark-field microscope, we are able in a few minutes to make a positive diagnosis of syphilis in every case of untreated chancre and to take the necessary measures to cut short the further systemic infection.

The prognosis of syphilis has been immeasurably improved, in this respect alone, by the discovery of the spirochete.

At the other end of the scale of syphilitic lesions, Noguchi's discovery of the spirochete in the tissues of the central nervous system has definitely placed tabes and paresis—the affections formerly spoken of as parasymphilitic—in the group of syphilitic affections, bringing to an end the fifty years' controversy as to their nature. The new studies of the spinal fluid have brought out the fact that the foundation for these late lesions of the central nervous system is laid in the early stage of the disease, probably at the time of the first great generalization of the spirochetes; more than half the cases of syphilis show evidence of disturbance in the spinal fluid at this early period. On the other hand, it is a common observation that cases of tabes and paresis give a history of little or no treatment in the early days of their disease, and though there are exceptional cases that seem to have been well treated by the former methods, early neglect is the rule. The time to cure paresis and tabes is the time at which the

central nervous system is first invaded and before the anatomic lesions that follow many years later have developed. I venture to predict that with the diffusion of the knowledge of the supreme importance of early energetic treatment by the new remedies, the incidence of these terrible and generally hopeless effects of syphilis will greatly diminish, and the general prognosis of syphilis be proportionately improved.

THE WASSERMANN TEST

The second great achievement of recent years is the application of the Bordet-Gengou method of complement fixation to syphilis—the Wassermann test.

In all the fluctuations of opinion as to the significance and value of this test one fact has remained clear, namely, that a strongly positive Wassermann reaction is found practically only in syphilis, and that a strongly positive Wassermann reaction means syphilis.¹ This test has aided in the proof of the syphilitic nature of the late lesions of the central nervous system, of the sclerotic changes of the cardiac valves and of aortic aneurysm; it has abolished Colles' and Profeta's laws by showing that in these cases both mother and child are protected against infection because they are already syphilitic. It has awakened the profession and the public to the unsuspected extent of the prevalence of syphilis in every community in which a systematic investigation has been made, and by increasing our knowledge of the extent and gravity of the disease has served as the great stimulus to the administration of proper treatment and to this extent has benefited the prognosis of the disease in the individual. Never in the history of syphilis has there been so extensive a knowledge of its nature and so general an effort to curb its spread by education and other prophylactic measures along the lines of "social hygiene."

Furthermore, the Wassermann reaction is used as an index of the efficacy of treatment and thus as a prognostic sign. On the theory that the Wassermann reaction is due to the presence of certain bodies in the blood that are produced as the effect of an interaction of the spirochetes and the tissues, it is an obvious deduction that the disappearance of the Wassermann bodies from the blood indicates the disappearance of the spirochetes. Unfortunately, this deduction goes too far; the disappearance of the Wassermann bodies from the blood of the syphilitic, the occurrence of a negative Wassermann reaction, indicates only the cessation of the interaction of tissues and spirochetes and not necessarily the eradication of the spirochetes. It seems that a negative Wassermann reaction in a syphilitic means only that there are no foci of spirochetes in the patient sufficiently active to bring about the formation of an appreciable quantity of Wassermann bodies in the blood; but it affords no proof of the eradication of the spirochetes. We know that the late syphilitic with a gumma in the skin, or with obvious symptoms of syphilis of the central nervous system, frequently presents a negative Wassermann reaction. We know, furthermore, that vigorous treatment in the secondary or the later stages commonly results in a negative Wassermann reaction which subsequently may become positive. As an index of the complete spirochetal disinfection of the patient, a negative Wassermann test at a given moment is relatively useless. On the contrary, however, as an index of failure to eradicate the

spirochetes, a positive Wassermann reaction in the syphilitic under treatment has the greatest value and demands the continuance of treatment.

This brings us to the question of the significance of a positive Wassermann reaction in the old asymptomatic syphilitic. I have in mind two classes of cases:

First, the syphilitic who has been well treated for several years, whose spinal fluid is negative, who presents no physical evidence of his disease, but whose blood serum persistently shows a strongly positive Wassermann reaction, which energetic courses of treatment have been able at most to render temporarily a little less strongly positive. I have seen so many of these resistant Wassermann-positives become Wassermann-negative as the result of further treatment, that in my opinion systematic treatment should be continued for at least three years before we can think of relegating the patient to the class of the permanently Wassermann-positive. It is possible that such a patient harbors spirochetes in his viscera and that occasional short courses of treatment maintained for a number of years will serve to prevent the manifestation of any syphilitic lesions; but further energetic treatment of the kind that is demanded in the first years of his infection seems to me no longer required.

Second, a class of elderly patients in whom, as the result of a thorough clinical examination, a strongly positive Wassermann reaction is discovered, as it were, by accident. These patients present no clinical evidence of syphilis whatever; they give no history of infection, or they may perhaps recall a genital sore of thirty years before, and perhaps present a genital scar, for which they never received treatment and from which they never observed any effects. What is the proper line of conduct to pursue with these old untreated asymptomatic Wassermann-positives? The question, in my opinion, resolves itself into a judicious weighing of possibilities and balancing of evils. The man who has carried his spirochetes for thirty or forty years without even being aware of his condition may well be allowed to carry them undisturbed for the rest of his days. When we consider the prognosis of his case, we must admit the possibility that he will die of cerebral hemorrhage as the effect of syphilitic changes in his arteries at the age of 60 or 65 instead of going on to the full span of life. But we cannot be sure even of that; and against this simple possibility we must weigh the great distress which a prolonged course of antisiphilic treatment necessarily involves and, in the end, the grave doubt as to the ability of such treatment to eradicate the spirochetes. The asymptomatic Wassermann-positive who is well past his fiftieth year, as a rule, should be let alone.

With regard to this class of case as well as with the somewhat younger syphilitic who remains Wassermann-positive in spite of the most energetic treatment, yet presenting no evidence of visceral syphilis, the question arises whether we may not be dealing with a condition analogous to that of the healthy carriers of meningitis, diphtheria or typhoid bacilli; whether there is not a class of spirochete carriers who, while harboring the germs, are themselves immune to their effects. There is a growing conviction among syphilologists that there is indeed a class of harmless spirochete carriers, harmless to themselves, because the spirochetes are merely saprophytes in their host and harmless to others, because, unlike the carriers of meningitis, diphtheria and typhoid, their germs have no way of leaving their host to infect others. However, we must not too lightly

1. In yaws the Wassermann reaction is always positive, in nodular leprosy generally; but with these diseases a question of differential diagnosis from syphilis is not likely to occur, at least in this country.

assume that a given case, asymptomatic and Wassermann-positive, belongs to this class till we have really subjected the patient to adequate treatment and by examination of the spinal fluid excluded the possibility of a still latent syphilis of the central nervous system.

As an aid in the diagnosis of syphilis and as a means of showing the necessity for further treatment in our cases, the Wassermann reaction has enormously enhanced the general prognosis of syphilis.

THE ORGANIC ARSENIC COMPOUNDS

We come now to the third achievement: the employment of the organic arsenic compounds to which the name of arsphenamin has been officially assigned. The extravagant hopes that were entertained ten years ago when this remedy was first announced have not been realized, and in the disappointment of our expectation that a single injection of arsphenamin would permanently sterilize the patient infected with spirochetes, the pendulum has swung too far and we have lost sight of the fact that a complete spirochetal sterilization is, indeed, a frequent achievement. While, in the great majority of cases, prolonged treatment is necessary, every syphilologist can point to some cases in which the disease, attacked in its initial stage, has been eradicated by a single injection or a single short course of injections. The proof of cure in these cases rests on the permanence of the negative Wassermann reaction, on the freedom from symptoms extending already up to nearly ten years, and finally on the frequent occurrence of reinfection with syphilis in these cases. When we consider the enormous chronicity of syphilis, the fact that lesions may occur after an interval of freedom from symptoms lasting for thirty or forty years, it is evident that freedom from symptoms alone cannot be considered a proof of cure. The provocative arsphenamin injection is a futile and often misleading procedure.² The only positive proof of cure is a fresh infection. As long as the patient is syphilitic he cannot acquire syphilis; he is immune to a fresh infection with spirochetes. Conversely, the occurrence of a fresh infection is a proof that he was free from syphilis. In the old days, reinfections of syphilis were such rare events that many syphilographers questioned the possibility of their occurrence, and sought to explain the symptoms as relapses in a syphilitic; but the best authorities, including Fournier, finally recognized reinfection as a possible, though rare, accident. Since the introduction of the new remedies, reinfections with syphilis have become a relatively frequent event. Such a case occurred in my own practice only a few days ago:

The patient had acquired a cephalic chancre in 1902. He was treated by pills, which he continued taking intermittently until I saw him in 1914. At that time he presented several patches of a scaling serpiginous syphilid on the neck and scalp, and a positive Wassermann reaction. A course of arsphenamin and mercury by injection rapidly removed his lesions and brought about a negative Wassermann reaction. During the year he received three more courses of treatment, the Wassermann reaction remaining negative. During the next two years he was under observation without treatment, and his blood, examined at intervals, was negative. He was discharged in April, 1917. I saw him again, January 17 of this year. He had been venereally exposed about December 12, and four weeks later noticed a sore on the prepuce. Five days later when I saw him he presented a lesion which no syphilologist would have hesi-

tated to pronounce a syphilitic chancre. Shape, border, floor and induration were characteristic, and on dark-field examination spirochetes were found abundantly present. The Wassermann reaction was negative.

Such occurrences must in the nature of the case be extremely rare. By the time a man has been cured of his syphilis, he has grown older and usually wiser. He is less likely to expose himself quite so carelessly as before; he has had a severe lesson which has sobered him; perhaps he has married. The cured syphilitic, in short, is not so good a target for infection as he was before. But where in the old days we had one case of reinfection we now have a hundred. Every one of these cases, of course properly authenticated, is an absolute proof of the efficacy of treatment, and their greatly increased number in recent times is a proof of the superiority of our present methods over the past. The prognosis of syphilis has been incalculably enhanced by the new remedies.

With this statement of a strong conviction we must be content. It is impossible to give figures of comparison. We know that the majority of syphilitics were symptomatically cured by the use of mercury alone. But we see our hospitals and asylums still filled with the victims of syphilis uncured by this treatment.

BENEFITS OF IMPROVED PROGNOSIS

The recent additions to our knowledge have made it possible to attack the disease by prophylaxis at the moment of infection; to make an infallible diagnosis before the system is swarming with spirochetes; to recognize the necessity for further treatment even in the absence of symptoms; to detect the disease in the central nervous system before clinical symptoms are manifest, and, finally, in arsphenamin, have given us a remedy incomparably superior to mercury in speed of action as well as in efficacy.

It is inconceivable that the next generation will not reap the benefit of the improved prognosis of syphilis.

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THE RÔLE OF CARBOHYDRATES IN THE TREATMENT OF TOXEMIAS OF EARLY PREGNANCY*

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Nausea with occasional vomiting early in pregnancy is undoubtedly a manifestation of mild toxemia, but the condition is so familiar to every one that it attracts little attention. Patients often demand medical care because they are seriously annoyed by their "morning sickness," without arousing much concern on the part of the physician. On the other hand, many patients, because they think that this condition is to be expected during pregnancy, fail to seek advice until vomiting has progressed to the point at which it may be classed as "pernicious" or "intractable."

Despite the fact that fairly severe toxemia is not at all uncommon, and that mild toxemia is met con-

2. Pollitzer, Sigmund, and Spiegel, L.: The "Provocative" Wassermann Test, *Am. J. Syph.* 3: 252 (April) 1919.

* Read before the New York Obstetrical Society, Jan. 13, 1920.

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stantly, there are many problems presented in this connection that are still without adequate explanation. There are, for instance, the questions of when to interfere and when not to interfere; which is to be a mild case of vomiting that may be expected to cease spontaneously, and which is to become a case of uncontrollable vomiting with inanition, acidosis, dehydration and death; and, in fact, why women should suffer at all during pregnancy from even mild nausea. Undoubtedly there is a relationship between the milder and the graver types of toxemia of early pregnancy, and there is a problematic relationship between these toxemias and those of later pregnancy which we know as acute yellow atrophy of the liver, preeclamptic toxemia, and eclampsia.

It seemed reasonable, on this account, to hope that a study of the milder types of toxemia might disclose important facts regarding the origin of the more serious toxemias. Despite the tremendous amount of work that has already been done along these lines, we felt impelled to begin this study in order to explain, if possible, the success of a purely empiric line of treatment which has given unusually good results in our clinic.

A series of seventy-six cases of toxemia of early pregnancy was treated along certain definite lines. That is to say, our method of approaching this condition underwent a gradual process of development during a period of about five years, one point suggesting another, until the time came when all our patients were subjected to a consistent, well-outlined course of treatment which varied only in being more or less rigid according to the severity of the woman's illness. Further attention to certain details made it possible to apply the same general principles that had been developed to more profoundly toxic conditions, not only during early pregnancy but also late in pregnancy, still obtaining beneficial results with progressively fewer failures.

THEORIES REGARDING ETIOLOGY OF TOXEMIA OF EARLY PREGNANCY

A review of the extensive literature on this subject, with the ingenious theories that have been advanced to explain all toxemia of pregnancy, is the best possible demonstration of the fact that no single idea is sufficiently comprehensive to cover this unquestionably complex matter.

Certain unknown toxic substances are supposed to be elaborated somewhere in the metabolism of a pregnant woman. The presence of these substances in the body is considered to be the cause of the vomiting and of the pathologic changes that result if the diseased condition is prolonged. There are four main theories as to the source of these toxic substances. The first is that they are of gastro-intestinal origin and akin to an ordinary autointoxication; the second, that they occur as the result of disturbances in the various glands of internal secretion; the third, that they are of fetal origin; and the fourth, that they result from disturbance in liver function. Dirmoser¹ was the first to assert that these toxins were the result of intestinal putrefaction, and it is still agreed that autointoxication may be an exciting cause of pernicious vomiting of pregnancy. The thyroid, the parathyroids, the suprarenal glands and the ovaries have all been credited with responsibility without actual confirmatory evidence, while the fetus itself, because of its demands on

the mother and because it casts off foreign protein into the maternal blood stream, has been plausibly blamed. So far as the fourth theory is concerned, it is manifest that liver function is disturbed, but the theory offers no explanation of the manner in which this occurs. Disturbance in liver function might as readily be an effect as a cause of toxemia.

Considerable work has been done by Williams,² Stone³ and Ewing⁴ on the pathologic changes in the liver and their significance, and the work of these authorities on maternal metabolism is familiar to every one. This is especially true of that done by Williams,⁵ who still classifies vomiting of pregnancy as reflex, neurotic and toxemic. Reflex and neurotic types fall into one of two main groups, while toxemic vomiting constitutes the other, and Williams distinguishes between the two by changes in the relation of the ammonia nitrogen to the total nitrogen of the urine, this being termed the ammonia coefficient. It is hardly necessary to consider in detail the questions which Williams' views have brought up, because their importance aroused marked interest, and at the same time no little controversy. No classification should be too sharply defined, and it is probable that all neurotic vomiting of pregnancy has an underlying element of toxemia. On the other hand, toxemic vomiting of pregnancy is usually accompanied, in its beginning at least, by a certain degree of neurosis. In many cases, particularly if seen in the early stages, it remains to be determined, therefore, whether it is the neurosis or the toxemia which predominates in the combination. Symptomatically the two groups are alike, because even a simple starvation is accompanied by acidosis, inanition, and another most important factor, dehydration.

While it is true that no one of these various theories is sufficient to account for the origin of the toxemia of pregnancy which is manifested by nausea and vomiting, nevertheless they offer many clues which must be of value at some time in solving this perplexing problem. We have merely endeavored to follow some of these clues.

DEVELOPMENT OF TREATMENT FROM A DIETETIC STANDPOINT

It has been recommended for some time, especially by Dr. Whitridge Williams, that women suffering from nausea, or the so-called "morning sickness," be directed to eat some simple thing, such as one or two soda crackers and a glass of water, before arising in the morning. Williams suggests that the mental effect of this simple course is important; but benefit follows so often and an elaboration of this procedure gives such significant results that it must be physical, rather than psychic in its action.

The first nausea of pregnancy usually affects the patient early each day, soon after she arises. This is after the longest period of fasting in the twenty-four hours. An over-night fast can produce only moderate hunger but any hunger may be considered mild starvation. If eating before making any exertion relieves this morning nausea, it is obvious that there is a relation between starvation and the occurrence of the nausea.

Having relieved some patients of "morning sickness" by directing them to eat either the crackers and

1. Dirmoser: *Wien. klin. Wchnschr.* **16**: 405, 1903.

2. Williams: *Bull. Johns Hopkins Hosp.* **17**: 71, 1906.

3. Stone: *Med. Rec.* **48**: 295, 1905.

4. Ewing: *Am. J. Obst.* **51**: 145, 1905.

5. Williams: *Obstetrics*, 1917, p. 551.

water or their regular breakfast in bed, it was a natural step to suggest to those patients who had nausea throughout the entire day, either with or without vomiting, that they eat regularly between meals as well as at the usual mealtimes. It is necessary to specify what and when the patient shall eat, because it is by the use of carbohydrates that the best results are obtained. Excessive amounts of proteins are not demanded or well tolerated, and, indeed, the higher the protein intake the more rapidly does the toxemia progress from bad to worse. This is probably due to the greater nitrogen elimination made necessary by protein metabolism and intestinal putrefaction, and also because of the proportionately lessened carbohydrate intake.

GENERAL OUTLINE FOR DIET HIGH IN CARBOHYDRATES

Article of Diet and Amount	Percentage of			Calories
	Protein	Fat	Carbo- hydrates	
7:30 a. m.				
2 soda crackers.....	1.4	1.2	10.2	55
Breakfast, 8 a. m.				
Stewed prunes (6 large).....	1.4	...	47.0	200
or 1 baked apple.....	0.4	0.5	14.0	64
3½ oz. oat-meal.....	3.8	1.4	17.8	101
or 3½ oz. cream of wheat.....	3.0	0.2	19.1	93
with ½ oz. sugar and 1 oz. cream...	0.8	5.7	16.4	122
Cup chocolate with sugar.....	4.1	7.5	22.0	325
2 slices toast.....	5.8	...	32.0	140
1 oz. honey.....	...	...	25.0	101
10:30 a. m.				
2 slices toast.....	5.8	...	32.0	140
or 2 crackers.....	1.4	1.2	10.2	55
1 glass milk.....	6.2	7.0	9.4	128
Lunch, 12:30 p. m.				
Cream of celery soup.....	1.8	2.5	4.5	50
or potato soup.....	8.7	7.1	30.7	225
4 crackers.....	5.6	4.8	40.8	144
2 slices bread and butter.....	5.8	...	32.0	140
Lettuce, ½ head.....	1.2	0.3	2.9	20
1 cup custard.....	5.1	7.7	32.0	100
or 1 cup cornstarch pudding or 1 cup apple tapioca.....	0.2	0.07	23.0	100
or 1 cup ice cream.....	4.9	6.4	23.4	172
or 3 oz. gelatin with cream and sugar	5.0	5.7	29.0	187
"Tea," 4 p. m.				
Tea with sugar.....	...	...	10.0	40
2 slices toast.....	5.8	...	32.0	140
1 slice sponge cake.....	6.3	10.7	66.0	384
Dinner, 6:30 p. m.				
1 cup cream of pea soup.....	3.6	0.7	7.6	50
or other soups as at lunch				
2 crackers.....	1.4	1.2	10.2	55
2 slices toast.....	5.8	...	32.0	140
Baked potato, sweet or white (large)...	1.7	...	16.0	100
or 3 oz. rice.....	1.7	0.1	20.5	92
3 oz. stewed carrots.....	0.9	0.3	7.5	50
or 3 oz. beets.....	1.9	0.1	6.1	33
Desserts as at lunch				
or 1 oz. dates.....	0.7	0.9	26.0	116
or 1 oz. raisins.....	0.8	1.0	24.0	100
Supper, 9:30 to 10 p. m.				
2 slices bread.....	5.8	...	32.0	142
or 2 soda crackers.....	1.4	1.2	10.2	57
1 glass milk.....	6.2	7.0	9.4	128

This point may be questioned by those who agree with Lynch.⁶ He emphasizes in a recent publication the importance of diet in toxemia, but urges absolute restriction of sweets and fruits, giving a diet of proteins and a limited amount of fats in what he calls the hyperacidity group of cases. Hyperacidity or sub-acidity will have little influence if gastric lavage is employed with any regularity, and the improvement in Lynch's cases was probably due more to the fact that he administered large amounts of glucose and soda by rectum, than to the dry solid diet which he considered essential. It is common knowledge that excessive meat eating is inadvisable during pregnancy, and absolutely to be interdicted in such a toxemia as a preeclamptic state.

The usual outline for the day was a soda cracker breakfast before rising, a light breakfast at the regular time, unsalted soda crackers and milk in the middle of the morning, and a light lunch without meat or pastry at lunch time, the dessert being cornstarch or rice pudding or custard. Afternoon tea with arrow-root biscuits or bread and butter sandwiches was followed at the usual time by a light dinner or supper similar to the luncheon, with some sweets and possibly raisins or dates for dessert. A bowl of bread and milk at bedtime, and some crackers and water on the bedstand for use during the night, complete the twenty-four hour schedule. This was usually sufficient to relieve an ordinarily mild case of nausea and vomiting, if due attention was also paid to elimination by the bowels. It will be noticed that this is not a strictly protein-free diet, but rather, a diet high in carbohydrates.

The accompanying table is presented for the purpose of demonstrating the preponderance of carbohydrates in the diet which has been suggested for these patients. It is scarcely necessary to point out that this is merely a general outline, and that considerable variety is possible if this outline is used as a working basis in the arrangement of menus. It is by no means essential that proteins and fats should be entirely eliminated. Glucose and soda solution supplements the carbohydrate intake to the extent of about 10 gm. of glucose if the patient is given, as is directed below, 1,000 c.c. of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution per day.

More aggravated cases of vomiting may result in spite of this dietetic treatment by direct progression from the one condition to the other, or because the patient fails to carry out these directions. Women whose vomiting is becoming progressively worse require more detailed care and observation. At first all food should be withdrawn for a period of from twenty-four to thirty-six hours in order to give the stomach a complete rest. Gastric lavage should be carried out two or three times daily to remove food residue, bile and mucus, because these patients all present a certain amount of reverse peristalsis. Furthermore, such cathartics as magnesium sulphate are necessary in order to reestablish peristaltic movements downward, and to open the bowels. This may be passed in through the tube, and is usually retained if the stomach has been washed out before its introduction. Enteroclysis of glucose and soda solution, as well as the usual rest in bed is required, and the employment of sedatives in the form of bromids and chloral is customary when indicated.

After the initial period of rest, during which the vomiting usually subsides, the stomach requires reeducation in precisely the same way that it does in any person who has been slowly starving for days or weeks. Either stomach is intolerant of food and would reject any great amount put into it. Consequently small amounts of nourishment are given at frequent intervals after the period of rest seems to have accomplished its purpose. An ounce to an ounce and a half of whey, peptonized milk, skimmed milk and vichy, or buttermilk are given alternately with two ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution every two hours. By mouth or by rectum an effort is made to give the patient at least one quart of the latter solution daily; but if her condition is at all urgent, plain glucose is

6. Lynch, F. W.: Treatment of the Severe Vomiting of Early Pregnancy, J. A. M. A. 73: 488 (Aug. 16) 1919.

given by intravenous injection, and repeated as often as indicated. Wilder and Sansum⁷ have demonstrated that as much as 0.8 gm. of glucose may be given intravenously per hour per kilogram of body weight without causing a glycosuria. They have given a large number of such injections, as have Erlanger and Woodyatt⁸ in their work on the intravenous injection of glucose in shock. Litchfield⁹ has used intravenous injections of glucose in pneumonia, and we have employed it extensively in our work on toxemia, including eclampsia, as well as in normal pregnant women in connection with some research work to which we shall refer presently. In none of the work of the authorities referred to nor in our clinic have there been serious reactions, and with proper technic no reaction should follow. One of the chief precautions necessary is to give the injection slowly. We usually allow one-half hour to inject from 15 to 20 gm. of glucose in 250 c.c. of water. It is also absolutely essential that glucose for intravenous injection should not be a commercial product, but chemically pure, and the solution should be sterilized in an autoclave.

If patients find glucose hard to tolerate, and glycosuria appears, we do not feel that this should influence the treatment more than to indicate a need for a reduction in the amount given, and the intravenous injections may be repeated as often as necessary, while the ingestion by mouth may be continued in lessened quantity. Litchfield has referred to the importance of dehydration in all toxic or starved persons, and this cannot be too strongly emphasized. Water is urgently demanded, and should be given frequently in small amounts during the initial period of rest referred to above. If it is rejected from the stomach, it must be given by enteroclysis or by intravenous injection. In the latter case it is usually given by being used as the solvent for the glucose which we consider necessary.

Ordinarily, by the third or fourth day these patients may have such soups as cream of celery or purée of potatoes added to their diet, with stewed fruits, cornstarch pudding, or ice cream, still continuing the glucose and soda by mouth and by bowel. Crackers, milktoast, cream of wheat and various other gruels, custards and sugar are added next, the important feature of the entire course of treatment being a strict adherence to the regimen laid down, and a careful observation of details. An early return to a substantial diet high in carbohydrates is soon accomplished in most cases.

This lengthy explanation of the dietary procedure that has given the best results in our work has been made solely to point out the reasons for believing that a deficiency in carbohydrate intake is an important factor in the etiology of toxemia of pregnancy. So many of the facts that we have outlined, and so many of the suggestions for treatment which we have made, are known in a general way that it might seem as though nothing new had been offered. This is largely true; but the fact remains that these points, many of them thoroughly familiar to the profession, have not been correlated and put into practice in anything more than a haphazard way, and then are used empirically.

Glucose and its usual concomitant soda are ordinarily employed on the ground that there is an acidosis present. It must be remembered, however, that acidosis is a symptom and not a distinct entity in itself, and that it is difficult to be contented with the mere treating of symptoms.

APPLICATION OF THE CARBOHYDRATE DEFICIENCY THEORY

Observing that the free use of carbohydrates in various forms was followed by a large measure of success in toxemia, it was only natural to seek an explanation of this. It was felt that any sound reason which might be offered for the results we were obtaining might give light on the origin and cause of toxemia of pregnancy.

Toxemia of pregnancy is a condition presenting vastly different degrees of severity in different persons, and also some variation depending on the manner in which such organs of the body as the liver, kidneys and gastro-intestinal tract behave under the strain of pregnancy. On these points quite definite statements may be made; but the influence of the various glands of internal secretion is still more or less problematic.

Pregnancy as a condition is a constant of a woman with a growing fetus within her uterus. There must be some variable which affects different women in this state in the different ways just outlined. This variable can hardly be individual or personal resistance to this strain, although that may play a part, for it is quite impossible to predict from a woman's general physical condition or appearance at the time her pregnancy begins whether or not toxemia is to be a serious menace to her. Furthermore, that toxemia which develops at this time is peculiar to pregnancy and not more than distantly related to those which accompany nephritis, diabetes, etc.

Toxemia of pregnancy is favorably affected by regulation of the diet, and there is no one thing in the daily life of various persons that is so variable as their diet. So-called "auto-intoxication" occurs in both men and women who habitually overeat, especially if they overindulge in proteins. Toxemia of pregnancy may be thought of as being markedly influenced by an improperly balanced diet, and at the same as being peculiar to pregnancy, because the establishment of a growing fetus within the uterus has made a new and profound demand on the metabolism of the mother.

For fear of being thought faddists in this matter of the influence of diet, we are anxious to reiterate that we believe all four of the main theories outlined earlier in this paper have a direct bearing on toxemia. It is a complex matter, and undoubtedly the organs of internal secretion, the demands of the growing fetus, the condition of the gastro-intestinal tract, and lastly the condition of the liver, all have more or less influence, either directly or indirectly. The balance between normal and abnormal pregnancy is so delicate, however, that it requires only some slight disturbance to upset this equilibrium. We believe that a deficiency in carbohydrates is usually the disturbing element, and that the mechanism by which carbohydrate starvation produces toxemia of pregnancy is quite definite.

Carbohydrates are not only well tolerated but actually demanded in the metabolism of a pregnant woman. This carbohydrate demand is apparently in excess of that of ordinary life, and may be explained

7. Wilder, R. M., and Sansum, W. D.: d-Glucose Tolerance in Health and Disease, *Arch. Int. Med.* **19**: 311 (Feb.) 1917.

8. Erlanger, Joseph, and Woodyatt, R. T.: Intravenous Glucose Injections in Shock, *J. A. M. A.* **69**: 1410 (Oct. 27) 1917.

9. Litchfield, Lawrence: Glucose Intravenously as a Therapeutic Measure, *J. A. M. A.* **71**: 503 (Aug. 17) 1918.

by the fact that the growing fetus urgently requires unusually large amounts of glycogen. This subject has been closely investigated by Slemons in his work on "The Nutrition of the Fetus."¹⁰ He finds that the fetal tissues synthesize their protein from material in the fetal blood which has been acquired by diffusion from the blood of the mother, and that fats and lipoids do not cross the placenta but are almost certainly manufactured in the body of the fetus. They are manufactured from carbohydrates which have passed through the placenta from the maternal blood stream, and the fact that Slemons found a slightly higher mean glucose value on the maternal side than on the fetal side indicates the mechanism by which a steady flow of glucose may be and is maintained toward the fetus. It not only uses it but stores it, the placenta being the glycogen storing organ until the fetal liver can function in this capacity, according to the investigations of Lockhead and Cramer.¹¹ Glinke¹² and others have shown that glycogen is especially abundant in fetal tissues, and McAllister¹³ has demonstrated by his analyses that glycogen, present in the uterus and tubes independent of pregnancy, is most abundant at the time of childbirth, also being especially marked in the placenta.

This demand is an abrupt and unaccustomed drain on the patient, who is called on at no time other than during pregnancy to supply glycogen at this rate to any tissue or organ of the body. The uterus is enlarging rapidly, and in its muscular hypertrophy is making an extra demand for glycogen, while the fetus is growing far more rapidly than the child ever does in its extra-uterine life, thus being another example of unusual hypertrophy.

That the placenta is responsible for this glycogen demand, its object being to obtain this for the benefit of the fetus, is shown by the fact that any condition, such as twin pregnancy, syphilis, or hydatidiform mole, in which there is placental overgrowth, is usually accompanied by undue toxemic manifestations. That is to say, many of these patients give a history of profound or prolonged nausea and vomiting, and some of them exhibit the more serious phases of intoxication. Women with hydatidiform mole, in which there is a proliferation of chorionic tissue, have given us the history of marked nausea and vomiting, beginning shortly after impregnation and continuing up to the time of operation. There are on record¹⁴ a number of cases of eclampsia occurring in the presence of a vesicular mole with no fetus present, and this phenomenon is quite readily understood if this theory of carbohydrate demand and supply be accepted.

If the extra glycogen demand of pregnancy is met by a diet containing a liberal carbohydrate supply, there should be little or no trouble from toxemia. If the demand is not met, the liver will be called on as the glycogen storing organ of the body to make up the deficit. Any glycogen storage in the muscles of the body is only temporary, and here again the liver is depended on for a reserve supply. Glycogen supply to the muscles must be maintained because it is consumed in the functioning of a muscle, so that rest in

bed should be valuable treatment from the standpoint of conservation.

As the liver gives up more and more of its glycogen without adequate replacement, whether this is due to fetal demand or to ordinary starvation, a certain amount of fatty replacement, and eventually degeneration, occurs in those cells which originally stored the glycogen. Pflueger¹⁵ has found that glycogen disappears almost entirely during experimental starvation, to be rapidly reformed after rich carbohydrate feeding. The experimental production of a fatty infiltration of the liver cells by means of phlorizin or by chloroform poisoning is familiar to all physiologists, and Rosenfeld,¹⁶ in 1902, stated that after producing this lesion by means of phlorizin he found it possible to clear up the fatty infiltration in one day by giving the animal a meal rich in carbohydrates. The recent publications of Davis, Hall and Whipple¹⁷ have been a most comprehensive contribution to this subject. These authors tested the effect on the liver of various poisons under varying circumstances, and found that they were far more toxic and produced yellow atrophy of the liver more readily if the dogs utilized in the work had been fed a diet high in proteins than if they had been living on a carbohydrate diet. Furthermore, the ingestion of carbohydrates in various forms caused the central necrosis of the liver lobules in poisoned dogs to disappear much more rapidly than in control animals. Roger¹⁸ has made the contention that the liver loses its detoxicating power if made glycogen-free by hunger or other experimental methods, and conversely that all substances introduced produce a less toxic action if the glycogen content of the liver is increased by the simultaneous administration of glucose.

In pregnancy there is at first a relative hunger, brought about by a sudden increase in demand rather than a decrease in supply of certain food elements. Hunger or starvation tends to make the stomach intolerant of food, and the lack of supply is thus promptly augmented. It is, however, a specific starvation or deficiency with which we are concerned, namely, that of carbohydrates. If an exhaustion of the stores of carbohydrates in the body is combined with dehydration of the tissues, acidosis is certain to result. Liver functions are seriously impaired under such circumstances, and the body is flooded with toxins. No food or water is being taken, the patient is feeding on her own body tissues, and thus presents the typical picture of so-called "pernicious" or "intractable" vomiting of pregnancy.

In an article appearing while this was in preparation, Duncan and Harding¹⁹ of Montreal have reported work done along practically identical lines as those of ours, with equally favorable results. They report a series of seventy cases, to which may be added seventy-six that we have to report. The fact that similar theories were formulated and common results obtained in a total of 146 cases, by two groups of investigators

15. Pflueger: Arch. f. d. ges. Physiol. (Pflueger's) **119**: 1, 1909.

16. Rosenfeld: Ergebn. d. Physiol., 1902-1903.

17. Davis, N. C., and Whipple, G. H.: The Influence of Fasting and Various Diets on the Liver Injury Effected by Chloroform Anesthesia, Paper I, Arch. Int. Med. **23**: 612 (May) 1919; The Influence of Drugs and Chemical Agents on the Liver Necrosis of Chloroform Anesthesia, Paper II, *ibid.*, p. 636. Davis, N. C.; Hall, C. C., and Whipple, G. H.: The Rapid Construction of Liver Cell Protein on a Strict Carbohydrate Diet Contrasted with Fasting: Mechanism of Protein Sparing Action of Carbohydrate, Paper III, *ibid.* **23**: 689 (June) 1919. Davis, N. C., and Whipple, G. H.: Liver Regeneration Following Chloroform Injury as Influenced by Various Diets: Mechanism of Protein Sparing Action of Fat, Paper IV, *ibid.*, p. 711.

18. Roger: Thèse de Paris, 1887.

19. Duncan and Harding: Canad. M. A. J. **7**: 1057, 1918.

10. Slemons, J. M.: The Nutrition of the Fetus, Am. J. Obst. **80**: 194 (Aug.) 1919.

11. Lockhead, J., and Cramer, W.: The Glycogenic Changes in the Placenta and the Fetus of the Pregnant Rabbit: A Contribution to the Chemistry of Growth, Proc. Roy. Soc. Series B, **80**: 263, 1908.

12. Glinke: Biol. Ztschr., Moscow **2**: 1, 1911.

13. McAllister: J. Obst. & Gynec. Brit. Emp. **34**, 1913.

14. Hitschmann: Zentralbl. f. Gynäk. **28**: 1089, 1904. Gross: Prag. med. Wchnschr. **34**: 365, 1909.

working independently, does much to strengthen the force of our argument.

They, too, suggest that a deficiency in carbohydrates is largely responsible for toxemia of pregnancy. We do not, however, agree with them in respect to the physiologic working of what is perhaps the most important point in the carbohydrate deficiency theory. The typical pathologic changes in toxemia of pregnancy are not due, apparently, to the fact that the fetus is greedy of unsaturated fat, for, if correct, this could have little or no bearing on a fatty degeneration of the liver. Nor is it merely because a moderate degree of fatty degeneration of the liver occurs as the result of a few hours' fasting.

We believe that this lack of glycogen in the liver is the result of a direct demand on the part of the fetus for glycogen. This call for glycogen is sent to the liver precisely as it would be from any organ requiring glycogen for consumption or combustion, and its place is taken in the liver by fat deposits. The mechanism by which a vicious circle may be established is quite evident.

REVIEW OF CASES

It has been found convenient for the purpose of study to separate these patients into groups according to the severity of the symptoms at the time each woman was first seen and treatment begun. For the sake of brevity, the record of the cases will be summarized, with a mere statement of the outcome. Women who suffered from nausea without vomiting are not included in this series. All were less than eighteen weeks pregnant.

GROUP 1.—This group is composed of patients complaining of irregularly occurring nausea and vomiting. This appeared most often in the morning, but might be troublesome to the patient at other times during the day. Dietetic treatment as outlined above was sufficient for most of these patients, although a few, especially latterly, were directed to take 1 or 2 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution at three hour intervals.

Thirty-two patients appear in this group. Twenty-nine of them showed immediate improvement, whereas three required from seven to fourteen days for relief. All obtained permanent relief. One patient required appendectomy.

GROUP 2.—Twenty-nine women comprise these cases. In them the vomiting was persistently growing worse, and nausea was constant. Considerable loss of weight occurred in two, while one woman was slightly jaundiced. It developed later that two of these patients had twin pregnancies. Both of them fell into labor prematurely, and one of them showed some symptoms of toxemia near the end of her pregnancy. Prompt relief from nausea and vomiting was obtained by our treatment in twenty-three cases, while five patients recovered more slowly, as in Group 1. One patient failed to show improvement, and suffered from constant nausea with considerable vomiting, occasionally relieved for only a short time. This woman had been a trained nurse and was the only one of this group who did not go to the hospital. She was nursed by a sympathetic friend who would carry out some of the disagreeable features of the treatment with great vigor, only to relax her efforts as soon as the patient showed temporary improvement. Nausea never completely abated, but pregnancy continued to term.

GROUP 3.—This is composed of fifteen cases of the most serious type. All of these patients exhibited acetonuria, the majority having albumin and casts in the urine. Many were jaundiced and all were emaciated, while food and water were being retained by none. All of the patients were seen in consultation, and immediate therapeutic abortion was expected by most of the attending physicians. Fourteen of these women recovered entirely within from seven to fourteen days.

A therapeutic abortion was performed on one patient. This woman had been under treatment for five weeks in a hospital where a religious objection to abortion existed, and when sent to my service she was deeply jaundiced and emaciated. She was then three months' pregnant and had developed a multiple neuritis with paresthesia of hands, arms, feet and legs. Knee-jerks were absent, and she complained of intense pain on attempts to move her legs. In view of her condition and on the advice of the obstetrician who had been caring for her, an abortion was performed. A transfusion of blood was deemed necessary a few days later on account of her general condition, and she was obliged to remain in the hospital for weeks. The neuritis has not entirely left her after a period of two years, but she has since gone through a pregnancy with success, being one of the patients listed in Group 1 as having been treated for mild toxemia of early pregnancy.

PRELIMINARY REPORT OF CHEMICAL AND EXPERIMENTAL INVESTIGATIONS

Being convinced from clinical experience of the potency of carbohydrates in the treatment of toxemia of pregnancy, and having theorized as to the physiologic mechanism of their action, we have endeavored to prove this by certain experimental and chemical investigations. We desire to make a brief preliminary report of this work at this time, and plan to follow this paper with one that shall deal with our investigations and their application to toxemia of both early and late pregnancy.

We are attempting to produce the pathologic lesions of toxemia in pregnant experimental animals, and have had moderate success. This work is being continued, and if successful will be extended.

The procedure of our chemical investigations has been based on two established facts, namely, (1) the liver is the carbohydrate storage organ of the body, and (2) according to necropsy findings in fatal toxemias, the liver undergoes fatty degeneration. It is evident that fat is first substituted for glycogen in the cells, and finally when liver function is seriously impaired by glycogen depletion, this pathologic change may well be classed as an actual degeneration.

On this basis we have endeavored to devise a test for liver efficiency and deficiency. We have established a normal time curve of the liver's ability to store a definite amount of glucose given intravenously to normal pregnant women. A study of similar curves in cases of toxemia points to the conclusion that the prognosis is good if the liver can store within thirty minutes as much as from 75 to 105 mg. of glucose per hundred cubic centimeters of blood, this ratio of storage being approximately equivalent to, or slightly more rapid than that of a normal pregnant woman. If only 30 to 40 mg. of glucose can be handled, a grave condition is faced, this being much less than normal. We have reasoned that a need for carbohydrates exists in both instances. In the first the liver has been taxed but is able to restore itself if carbohydrate is supplied, whereas in the second case the depletion of glycogen and the deposit of replacement fat has been so extensive that the cells have lost their function, and the damage may be termed necrosis or degeneration.

The cases we have studied include eclampsia, pernicious vomiting, nephritis complicating pregnancy, chorea, and one case of accidental separation of the placenta with kidney involvement. A control series of tests is being carried out on all patients after recovery, and these, without exception, have corresponded to the normal cases.

CONCLUSIONS

1. The problematic relationship between mild and profound toxemias of pregnancy warrants a study of the former in order to gain information regarding the latter.

2. The development of a course of treatment, the success of which seemed to depend on the use of carbohydrates in large amounts, led to the assumption that a deficiency in carbohydrates has an important bearing on the origin of toxemia of pregnancy.

3. Carbohydrate deficiency during pregnancy is of twofold origin; (1) a relative deficiency due to an unexpected demand for glycogen on the part of the fetus and the uterus, and (2) an actual deficiency, augmented in the presence of nausea and vomiting, from lessened carbohydrate intake.

4. Carbohydrate deficiency in the maternal organism causes a glycogen depletion of the liver, because this is the organ in which carbohydrates are stored for use as needed.

5. There is experimental evidence to show that liver function is impaired and the body flooded with toxins after carbohydrate starvation.

6. Pathologic changes in the liver lobules which are similar to those of fatal toxemias of pregnancy can be produced experimentally by the use of certain chemical poisons. These changes can be made to disappear rapidly by the ingestion of carbohydrates.

7. Mild cases of nausea and vomiting may be controlled by so regulating the diet that there is a preponderance of carbohydrates, and an avoidance of more than short intervals of fasting by the taking of food more frequently than under ordinary circumstances. This increased carbohydrate intake should be augmented by giving the patient from 8 to 16 ounces of 10 per cent. glucose and 2 per cent. sodium bicarbonate solution daily by mouth. This may be given in 1 or 2 ounce doses.

More severe cases require more rigid attention. After an initial period of rest, gastric lavage and the introduction of saline cathartics through the stomach tube, small amounts of liquid food are allowed alternately with from 1 to 2 ounces of the glucose and soda solution, described above, every two hours. By mouth or by bowel it should be possible to give the patient 1 quart of this solution daily.

In the seriously toxic patients the treatment is pushed even more vigorously with the addition of intravenous injection of from 15 to 25 gm. of glucose in from 250 to 300 c.c. of water. This is given from one to three or more times daily, according to the needs and response of the patient. The injections should be made in close accordance with the directions in the body of this paper. Other treatment is carried out along much the same lines as that for the second group.

8. Not only is intravenous injection of glucose solution a valuable therapeutic measure, but the rate of its absorption and storage by the liver is an index of liver efficiency which is of prognostic value. More rapid storage than normal is favorable because it indicates that the liver, depleted as it has been of glycogen, is nevertheless still able to restore itself. Storage which is slower than normal offers an unfavorable prognosis, since this is evidence that liver efficiency is impaired. Our clinical evidence regarding these views is still too limited to permit a definite conclusion, but our experience thus far has been entirely confirmatory.

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THE THERAPEUTIC USE OF CARBON DIOXID AFTER ANESTHESIA AND OPERATION *

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There is ample experimental evidence that inhalation of carbon dioxid, properly diluted with air or oxygen, should be a therapeutic agent of great potency. In fact, however, aside from the indirect use of this gas in the rebreathing methods of anesthesia, particularly with nitrous oxid, inhalation of carbon dioxid is not used in surgery. Likewise in internal medicine it is not employed, except perhaps in the Nauheim bath treatment of cardiac conditions; and here there is no agreement as to whether or not the inhalation is a factor.

This lack of use is the more striking when we note the present deficiency in therapeutic agents to stimulate breathing, and the great need for one; for carbon dioxid is Nature's own stimulant to the respiratory center.¹

On the circulation its influence is equally important—particularly on the venous return to the right heart. It is the insufficiency of this return which chiefly gives to postoperative depression its similarity to the effects of hemorrhage. Thus, recovery of the circulation and a rapid return of a normal arterial pressure are the results to be expected from the restoration to the blood and tissues of the carbon dioxid lost during anesthesia and operation.² At least, this is the result which we have obtained.

The reason for the neglect of carbon dioxid is not far to seek. It lies in the fact that without a reliable method and apparatus, or without the acquisition of great skill and tact in a practically unexplored field, the administration of carbon dioxid might be dangerous. Indeed, if insufficiently diluted with air or oxygen, it would be quickly fatal. Doubtless, in the not distant future it will seem almost incredible that progress should have been halted for a long period for want of an apparatus for controlled gas administration. In fact, however, only recently, after ten years of effort in the laboratory where two of us work, has an apparatus

* In the text of this paper we deal only with such degrees of functional depression as commonly occur after anesthesia and operation. Mention should, however, be made here of work done by us during the winter of 1917-1918 which, although itself negative in result, was nevertheless an essential preliminary to this. It was a study of accident cases brought in by the ambulance. It revealed not a single case of "shock," other than hemorrhage or concussion, during ten weeks at a very large and active hospital in a field where such cases would be expected. Apparently this ignis fatuus of physiology is the product—at least in discoverable amounts—only of the battle field and the operating room, arising doubtless on the one from unrelieved pain, hemorrhage or cold, and in the other largely from some element in anesthesia. Our work had the approval of the Surgeon-General of the Army and was carried out at Bellevue Hospital, New York. We take this occasion to express our thanks to the directors of that hospital, to Dr. Charles Norris and Dr. Adrian V. S. Lambert, and to Col. F. F. Russell of the Surgeon-General's Office.

1. Henderson, Yandell: *Bull. Johns Hopkins Hosp.* **21**: 235, 1910.

2. Henderson, Yandell: *Am. J. Physiol.* **27**: 152, 1910. Henderson, Yandell, and Harvey, S. C.: *Ibid.* **46**: 533 (Aug.) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: *Observations on Surgical Shock*, *J. A. M. A.* **69**: 965 (Sept. 22) 1917. Henderson, Yandell, and Haggard, H. W.: *J. Pharmacol. & Exper. Therap.* **11**: 189 (April) 1918. Henderson, Yandell; Prince, A. L., and Haggard, H. W.: *Ibid.* **11**: 203 (April) 1918. Haggard, H. W.: *Low Levels of Alkaline Reserve under Surgical Conditions*, *Tr. Sect. Surg., Gen. & Abd., A. M. A.*, 1918, p. 139.

at all suited to clinical use become available; and yet it is very simple. It needs only a single operator; but he must be an expert in the vital signs of anesthesia and of the powerful functional effects of carbon dioxid, and he must at all times be keenly observant of the patient under treatment.

The first apparatus which we employed was, on the contrary, quite complicated, requiring the constant attention of three or four operators. It involved an air blower, electric motor, tank of carbon dioxid, gas meters, and accessory devices,³ and was unsuited, therefore, to general clinical use. It had, however, the experimental advantage that with it any volume of air of any desired percentage of carbon dioxid could be delivered into the mask from which the patient inhaled.

With this apparatus we were enabled, through the courtesy of Drs. John F. Erdmann and Thomas H. Russell, to make, at the Post-Graduate Hospital, New York, what we believe are practically the pioneer observations (excepting those of Cotton⁴ and of Levy⁵) on the effects of administration of carbon dioxid after ether anesthesia and major surgical operations.

Obviously, in order to show the effects of inhalation of carbon dioxid it was essential that we should first establish, as a standard of comparison, how patients usually behave. In this there is considerable difficulty; for, as we found and as indeed every one knows, there are the widest variations according to the length of anesthesia, its depth, preliminary medication, the character of the patient, and the severity of the operation. Below is presented the abbreviated protocol of a case fairly typical of conditions which are, however, frequent:

PROTOCOL OF CONTROL CASE IN WHICH NO CARBON DIOXID WAS ADMINISTERED

W. M., man, aged 34; double hernia; ether administration, sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	132	Before operation
0	...	In bed, after operation
5	120	Gasps and apneas; cyanotic
25	...	Vomiting
30	108	Depressed respiration; cold, cyanotic, pallid skin
55	102	No improvement
65	...	Vomiting
80	110	Signs of returning consciousness

It is here to be seen that, after the patient was back in bed, arterial pressure continued to fall for an hour—to a level 30 mm. below normal. Respiration during this time was notably depressed. The elimination of ether was correspondingly slow.

EFFECTS PRODUCED BY THE INHALATION OF CARBON DIOXID

While other control cases, after operations for appendicitis, hernia, gallstones, etc., showed these features in more or less marked degree, this case, in our observations, is by no means an unusual or extreme illustration of postoperative depression. Using it as a rough standard of comparison, we give the protocols of four cases illustrative of the effects observed under inhalations of carbon dioxid.

3. Parts of a Connell nitrous oxid-oxygen apparatus were used, for the loan of which and for assistance in assembling the whole apparatus we are indebted to Mr. C. A. Mandolini of the Scientific Apparatus Company, New York City.

4. Cotton, F. J.: Acapnia: Its Surgical Importance, Boston M. & S. J. 167: 432, 1912.

5. Levy, Ettore: The Clinical Use of Carbon Dioxid with Oxygen, J. A. M. A. 58: 773 (March 16) 1912.

PROTOCOLS OF CASES IN WHICH CARBON DIOXID WAS GIVEN

As it seemed that the benefits hoped for from inhalation of carbon dioxid might possibly involve also grave danger during the inhalation—an anticipation which fortunately was not verified—every precaution was taken to minimize the risk. In all cases the mask was held by one of us (R. C. C.), who has had an extensive experience as an anesthetist, and particularly in the administration of nitrous oxid and rebreathing. At least one other of us kept an uninterrupted watch on the patient, while one kept his eyes on the gages and meters of the apparatus and his hands on its cocks and switches. In this work we are indebted to Dr. W. H. Taliaferro for assistance.

CASE 1.—S. S., man, aged 46; double hernia; ether administration, seventy minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	136	Before anesthesia
0	120	In bed, after operation
1	...	Inhalation of 10 per cent. CO ₂ begun
2	...	Marked respiratory augmentation
3	136	Breathing 35 liters of air per minute
4	160	Inhalation reduced to 6 per cent. CO ₂ Warm, pink skin; Sweating
31	...	CO ₂ stopped; patient fully conscious, but emotionally unbalanced; crying; wanted to get out of bed
33	132	
	136	Four days later

No nausea, vomiting or gas pains; an uneventful recovery.

CASE 2.—R., woman, aged 20; appendicitis and adhesions; prolonged illness; patient weak; ether administration, forty minutes; postoperative administration of carbon dioxid.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	100	Before anesthesia
0	96	In bed, after operation; 10 per cent. CO ₂ started
2	110	
4	130	Breathing 40 liters per minute; CO ₂ reduced to 8 per cent.
18	...	Struggling; breathing 40 liters per minute
19	122	Conscious; CO ₂ stopped
24	122	
	104	Three days later

No nausea, vomiting or gas pains; water given as asked for; an uneventful recovery.

CASE 3.—L. S., man, aged 26; appendicitis and adhesions; ether administration, sixty minutes.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	115	Before anesthesia
0	108	In bed after operation
5	102	Cyanotic
8	96	Inhalation of 8 per cent. CO ₂ begun
15	112	No respiratory augmentation
18	...	Respiration augmented
19	...	Fine pink skin color
21	118	Breathing 35 liters per minute; talks rationally
43	116	CO ₂ stopped
45	112	
	115	Three days later

No nausea, vomiting, or gas pains; allowed to drink water freely; an uneventful recovery.

CASE 4.—A. S., woman, aged 32; exploratory laparotomy and removal of appendix and gallstones; ether administration, fifty minutes; uneventful recovery.

Time Minutes	Arterial Pressure Mm. of Mercury	
..	118	Before anesthesia
0	116	In bed, after operation
1	...	Inhalation of 8 per cent. CO ₂ begun
2	...	Slight increase of respiration; color pale
6	...	Increased respiration
11	126	Breathing 30 liters per minute; pink skin
20	134	Struggling; responds to verbal suggestions
28	136	Answers questions rationally
31	134	CO ₂ stopped
32	...	Vomited a little yellow fluid
180	118	
	120	Four days later

No subsequent nausea, vomiting or gas pains; bowels easily stimulated to function; uneventful recovery.

In these four cases, typical of a total of seventeen so treated, certain points deserve notice:

Within a few minutes after the initiation of the inhalation of carbon dioxid, there was a great augmentation of respiration. Knowing the volume of air delivered to the mask by our apparatus, we could estimate quite accurately the volume of the patient's breathing. A normal well-developed adult at rest in bed breathes from 6 to 8 liters of air a minute. In our control cases, observed without treatment, the volume of breathing was estimated often at less than half as much: hence the common cyanosis. Under the inhalation of carbon dioxid, the volume of breathing was increased to amounts from 35 to 70 liters per minute, volumes corresponding to those which the subjects would have breathed under vigorous physical exertion.

The greater part of the ether was thus rapidly ventilated out of the blood. In from fifteen to twenty-five minutes the patient was conscious, although prone to emotional disturbances, sometimes of anger, but oftener of hilarity. Frequently the patient fell asleep fifteen or twenty minutes after the termination of the inhalation. Presumably there was a slight secondary rise of ether in the blood due to continued diffusion from the muscles, adipose tissue, etc.

Immediately after the operation, the arterial pressure was usually from 5 to 15 mm. below normal, with a tendency to fall further. Under inhalation of carbon dioxid it rose rapidly, sometimes 30 or 40 mm. within four or five minutes; and at the end of the first ten or fifteen minutes it was often 10 or even 20 mm. above normal. It then tended gradually downward again, although remaining above the normal level. After the termination of the inhalation it returned in a few minutes to a practically normal value. It never fell appreciably thereafter.

To the observer, the return of a normal pink skin color⁶ was one of the most striking effects of the inhalation of carbon dioxid, indicating a return of the normal capillary circulation, a feature of fundamental importance in the recovery from postoperative circulatory depression.

As the patients came off the operating table, they showed invariably the inadequately filled veins which indicate a reduced venous return to the right heart. To combat this condition effectively is, in our opinion, to solve practically the whole problem of the treatment of postoperative circulatory depression. Under inhalation of carbon dioxid, the veins became filled to an extent even exceeding that seen after vigorous physical exertion. We limited the strength of the carbon dioxid administered by this sign, in order not to overload the right heart with blood.

Although vomiting was not entirely absent, it was much less than in untreated patients. The patients were allowed to drink water freely. The inhalations seemed to diminish greatly the usual postanesthetic thirst.

We anticipated from previous experimental observations on animals that one of the benefits to be derived from inhalations of carbon dioxid would be found in the restoration of normal tonus in the stomach and intestine, and thus in the prevention of gas pains and constipation.⁷ While no patient developed gas pains, and all recovered normal bowel movements easily, our total of only seventeen cases treated is not sufficient to warrant a definite conclusion on this point.

BLOOD ALKALI

We turn now to a matter of profound theoretical significance. It is well established that under anesthesia and operation there is frequently a considerable reduction in the alkali of the blood as measured by its carbon dioxid combining power.⁸ But the cause, the nature and the significance of this reduction are not established.

Recent work by Henderson and Haggard⁹ has demonstrated experimentally that a reduction of blood alkali may be induced by two distinct processes: (a) The entrance of acids into the blood may partially neutralize the alkali. This is the acidotic process. Or (b) excessive breathing with blowing off of the carbon dioxid of the blood, reinforced perhaps by diminished carbon dioxid formation in the tissues under anesthesia, leaves the blood abnormally alkaline. In compensation, alkali passes out of the blood, partly perhaps into the urine, but chiefly presumably into the tissues. This is the acapnial process.

To distinguish between these two—superficially similar but fundamentally unlike—conditions of low blood alkali or, as we term it, hypocapnia, experiments on animals have afforded a simple and conclusive test. It consists in the inhalation of 6 or 8 per cent. carbon dioxid. If the condition is of acidotic origin the extreme acidosis, due to the summation of carbonic acid and fixed acids, aggravates the symptoms, and, if pushed, may kill the subjects in half an hour. On the other hand, if the low blood alkali is of acapnial causation, the increase of carbonic acid in the blood induces a compensatory process by which alkali is recalled, presumably from the tissues, into the blood in normal, or even supernormal, amounts. During the period of inhalation of carbon dioxid and high hydrogen ion concentration, recovery of the circulation, respiration and intestinal motility occurs.

With this distinction in mind it was only after very cautious preliminary tests on patients (of which we have omitted an account) that we ventured to push the inhalations with the intensity indicated in the cases reported. As none suffered any ill effect, but all the patients were rapidly restored to a condition of approximate functional normality, their low blood alkali, so far as it occurred, was clearly not of acidotic, but rather of acapnial origin.

To clinch this point we report observations which we were enabled to make at the New Jersey State Hospital for the Insane, Trenton, through the courtesy of Dr. Henry A. Cotton, medical director, and Dr. John W. Draper, of New York, attending surgeon:

CASE 5.—M. F., female, underwent operation for developmental reconstruction, involving the removal of 150 cm. of terminal ileum, about one third of the colon, and a number of mesenteric glands. Ether was administered for 120 minutes. Immediately after the patient was returned to bed, carbon dioxid inhalation was begun and continued for half an hour with the simplified apparatus. Samples of blood were drawn from an arm vein (a) before anesthesia, (b) at the end of operation, and (c) after termination of the carbon dioxid inhalation. They were equilibrated with air containing 5.6 per cent. of carbon dioxid at room temperature, and were analyzed for their carbon dioxid content, that is, the alkali in use.

Analytic results: $a = 53$; $b = 48$; $c = 58$ per cent. carbon dioxid by volume.

6. Bryant, John, and Henderson, Yandell: Closed Ether and a Color Sign, *J. A. M. A.* **65**: 1 (July 3) 1915.

7. Henderson, Yandell: *Am. J. Physiol.* **24**: 66, 1909. Cotton (Footnote 4).

8. Morriss, W. H.: The Prophylaxis of Anesthesia Acidosis, *J. A. M. A.* **68**: 1391 (May 12) 1917. Reimann, S. R., and Bloom, G. H.: *J. Biol. Chem.* **36**: 211 (Oct.) 1918.

9. Henderson, Yandell and Haggard H. W.: *J. Biol. Chem.* **33**: 333, 345, 355, 365 (Feb.) 1918; **39**: 163 (Aug.) 1919.

CASE 6.—M. A., female, was operated on as in the previous case. Ether was administered for 120 minutes.

Blood samples: $a=56$; $b=42$; $c=57$ per cent. carbon dioxid by volume.

CASE 7.—S. McK., female, had a 5.6 kg. abdominal fibroid tumor and 12 liters of ascitic fluid removed. Ether was administered for fifty-five minutes. The arterial pressure before operation was 154 mm.; after removal of the tumor, 100; after carbon dioxid inhalation, 160.

Blood samples: $a=56$; $b=48$; $c=64$ per cent. carbon dioxid by volume.

CASE 8.—M. M., female, was operated on for appendicitis. Ether was administered for fifty-five minutes.

Blood samples: $a=59$; $b=52$; $c=61$ per cent. carbon dioxid by volume.

THE APPARATUS

The simplified apparatus used in the last series of observations is shown in the accompanying illustration. It involves a tank of carbon dioxid of the best beverage quality, and a reducing valve. From the valve the gas passes to a T-tube, one limb of which leads to a capillary tube 1.8 mm. in diameter and 10 mm. long, and the other limb to a glass tube projecting down into a vessel of water. The latter serves both as a gage and as an escape valve, preventing any excessive pressure on the capillary. Under the maximum pressure possible, not more than 8 liters of gas pass through the capillary, which in turn is connected to the mask by a 5 or 6 mm. rubber tube.

The construction of the mask is simple, but involves the idea of preventing any possibility of accumulation of gas in the mask, with consequent excess administration. It depends on the subject's own breathing to draw the gas in and to mix it with air. These purposes are achieved by delivering the gas through a number of small openings just outside the open end of a short, large tube (from 2 to 3 cm. in diameter) connected with the mask. During expiration, or apnea, the gas merely wastes into the outside air; during inspiration it mixes with the inspired air. The operator controls the administration according to the reactions of the patient. With this apparatus the patient receives approximately one half of the gas which the apparatus measures off per minute. The percentage of carbon dioxid in the inspired air depends on the volume of breathing, and the administration must be controlled accordingly.

These investigations are being actively continued at St. Bartholomew's Hospital for Diseases of the Alimentary Canal, New York, where every facility has been provided for the further development of the carbon dioxid therapy.

CONCLUSIONS

The observations here reported indicate that the inhalation of carbon dioxid, properly diluted with air, is a highly beneficial and, with care, a safe treatment after anesthesia and operation.

The beneficial effects observed are: (a) an augmentation of breathing which rapidly ventilates the anes-

thetic out of the blood; (b) a powerful stimulant effect on the circulation, particularly on the venous return, and a rapid restoration of arterial pressure, without subsequent relapse or unfavorable consequences; (c) marked decrease of postoperative nausea, vomiting and thirst, and (d) a possible restoration of intestinal tonus.

TETANY IN A CASE OF SPRUE*

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AND

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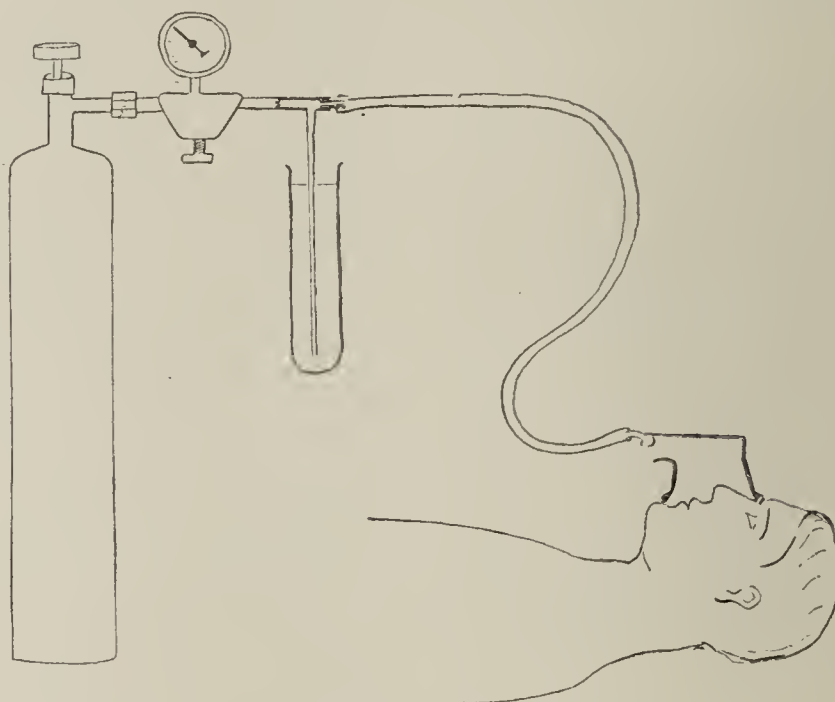
Early in 1919, Bassett-Smith¹ reported a case of sprue in which tetany developed shortly before the death of the patient. The author stated that his was the first published account of this complication of the disease. As no similar reports have been found in the literature since that time, it was considered that this case might be of interest both on account of its rarity and because of certain significant features bearing on the question of the etiology of tetany.

REPORT OF CASE

History.—R. W. C., an American medical missionary, aged 41, entered the private ward of the Presbyterian Hospital, Sept. 20, 1919, complaining of abdominal pain and diarrhea. As in all previous visits, he was cared for by Dr. David Bovaird. The patient had had measles and scarlet fever as a child; dengue in 1909, and bacillary dysentery in 1912. Since 1907, when the patient arrived in the Philippine Islands, small ulcers had been continuously present in his mouth, and he had been

bothered by diarrhea of a greater or less degree. In 1914, his condition became very much aggravated. The tongue became red, swollen and tender, and the small white ulcers along its margin merged. Moderate abdominal tenderness with slight distention accompanied a troublesome diarrhea. The stools were large, white, semifluid and frothy, with an offensive odor. He suffered from hemorrhoids, and fissures appeared in the margin of the anus. In the six months preceding his first entrance to the Presbyterian Hospital, the patient lost 40 pounds.

First Admission.—The patient was admitted, July 24, 1914, and discharged, Aug. 17, 1914. The lips were cyanotic; there were white spots on the tongue; on the buccal mucous membrane were two shallow ulcerations with a narrow zone of inflammation around them. There was a systolic murmur at the apex and the base; the abdomen was tender and tympanitic. The systolic blood pressure was 114; the diastolic, 70. Blood examination revealed: hemoglobin, 88 per cent.; red blood cells, 4,800,000; white blood cells, 9,200; polymorphonuclears, 56 per cent.; lymphocytes, 39 per cent.; eosinophils, 5 per cent. The stool contained no ova or parasites; the Cammidge test was positive; amylase was diminished. The diagnosis was "sprue." Under a regulated dietary regimen of fruit and proteins, the patient



Simplified apparatus.

* From the Presbyterian Hospital and the Laboratories of Surgical Research, Columbia University College of Physicians and Surgeons.
1. Bassett-Smith, P. W.: *Lancet* 1: 178 (Feb. 1) 1919.

improved considerably, and on leaving the hospital went to live in New Jersey, where he seemed to be on the road to recovery. Exercise, however, brought on renewed attacks, and the patient was forced to reenter the hospital in 1916.

Second Admission.—The patient was admitted, March 31, 1916, and discharged, Aug. 5, 1916. He presented about the same symptoms as on his previous admission, with the addition of anemia. Blood examination revealed: hemoglobin, 68 per cent.; red blood cells, 3,600,000; white blood cells, 9,200; polymorphonuclears, 71 per cent.; lymphocytes, 28 per cent.; eosinophils, 1 per cent.; blood Widal test, negative; blood culture, negative. Throat culture revealed no Klebs-Loeffler bacilli. The Wassermann test was negative. The stool was light and frothy; it contained no ova, parasites, blood or pus; trypsin and amylase were markedly diminished; starch granules, striated muscle fibers and fatty acid crystals were seen. Total fat was 39.0; neutral fat, 14.09; fatty acids, 24.91; 60 per cent. or more of the organisms noted were gram positive. A serial test meal was given. The gastric contents after one-half hour showed: free hydrochloric acid, 38; total acid, 62; after one hour: free hydrochloric acid, 41; total acid, 58. A roentgenogram of the stomach revealed a small amount of residue five hours after eating. The diagnosis was "sprue." The patient had occasional attacks of nausea and vomiting. Improvement began with a low fat diet, composed mostly of fruits and lime-water, and continued up to the time he left the hospital.

Third Admission.—The patient returned to the Philippines in October, 1917, where he seemed to do well until January, 1919; at this time his trouble returned with renewed force. He had from two to four light, frothy stools a day, and for the first time was troubled with pain in the upper part of the esophagus. In the late summer, he returned to the United States and reentered the Presbyterian Hospital. He was weak, emaciated and anemic, and his speech was feeble. The tongue was red and raw, with numerous ulcerations, and the buccal mucous membrane was marked by erosions. A faint blow was audible over the mitral ring. Liver dullness was diminished. The abdomen was distended and tender, but there was no mass or rigidity. The spleen was not palpable. The testes were tender.

September 21, blood examination revealed: hemoglobin, 65 per cent.; red blood cells, 3,700,000; white blood cells, 10,100; polymorphonuclears, 69 per cent. There were from one to three foul smelling, light brown and frothy stools a day; they contained no blood or parasites. The Wassermann test was negative. The blood was of Group II. Proctoscopic examination revealed a uniform, curdy, milklike film covering the mucosa, which was dry and shiny; there were no ulcerations; there were internal hemorrhoids.

October 1, 800 c.c. of blood were transfused without reaction.

October 6, the hemoglobin was 70 per cent.; red blood cells, 3,500,000. The patient had occasional attacks of nausea and vomiting.

October 30, he vomited. Examination of the vomitus revealed: free hydrochloric acid, 0; total acid, 24; guaiac test, negative. The sores of the mouth became worse.

October 31, hemoglobin was 63 per cent.; red blood cells, 2,600,000; no abnormalities of the red blood cells were noted.

November 17, in the evening, the patient vomited and complained of generalized abdominal pain. The abdomen was retracted and tense; deep pressure in every part gave pain, which was somewhat relieved later by a poultice.

November 18, 4:30 a. m., a stool of the usual appearance was passed; at 6 a. m., the patient vomited fluid with dark brown particles; at 6:30 a. m. he was in great distress. He said he had been in pain all night both from his abdomen and on account of contractures which had appeared in his extremities. On examination the patient presented the picture of tetany. The upper extremities were extremely spastic, drawn up and flexed at the elbows, flexed and rotated outward at the wrists. The fingers were flexed at the metacarpophalangeal joints, and the interphalangeal joints were extended. The lower extremities were also spastic, with flexion at the knees and extension at the ankles. The retraction and general tenderness of the abdomen, because there

was no fever or localization of the pain, was looked on as an expression of a generalized state of muscular hypertonicity. The patient vomited again. Examination of the vomitus revealed free hydrochloric acid, 0; total acid, 0. Spasms of the extremities disappeared in the late morning. The temperature was between 98 and 99 F.; the pulse, from 70 to 90. The serum calcium was 8 mg. per hundred c.c. (normal, from 9 to 11 mg. per hundred c.c.). An infusion of 400 c.c. of a 0.2 per cent. calcium lactate solution was performed. Thirty minutes later the serum calcium was 8.3 mg. per hundred c.c.

November 19, hemoglobin was 70 per cent.; red blood cells, 3,000,000; polymorphonuclears, 68 per cent. The patient still had abdominal pain, but on account of the normal temperature and low pulse rate, no new abdominal complication was suspected. The serum calcium was 6.5 mg. per hundred c.c. An infusion of 400 c.c. of a 0.2 per cent. solution of calcium lactate was performed. Thirty minutes later the serum calcium was 6.5 mg. per hundred c.c. The patient had frequent involuntary stools during the day. The plasma carbon dioxide capacity was 57.6 per cent. by volume.

November 20, the temperature for the first time rose above normal (102 F.). The pulse was 130. Tetanic contractions reappeared. A transfusion of 400 c.c. of blood was performed. Thirty minutes later the serum calcium was 7.5 mg. per hundred c.c. An infusion of 350 c.c. of a 0.2 per cent. solution of calcium lactate was performed.

November 21, the temperature was 103.4 F.; pulse, 124. There was twitching of the extremities. An infusion of 800 c.c. of a 0.1 per cent. solution of calcium lactate in 0.4 per cent. saline was performed. The patient died.

During the last forty-eight hours, the patient vomited almost constantly except after lavage. The vomitus was first dark green, and later, dark brown. The fever which developed during the last twenty-four hours, by which time the abdomen had relaxed, was considered secondary to the constant vomiting.

The final diagnosis was: tetany; acute dilatation of the stomach, and sprue.

Summary of Postmortem Findings.—There were sprue (clinical); atrophic enteritis; atrophy of the papillae of the tongue, and general purulent peritonitis. The abdomen contained about 300 c.c. of dirty, yellow, purulent fluid. The intestines were matted together with yellowish fibrin and covered with a purulent exudate. The appendix was gangrenous, with rupture; it was hanging over the pelvic brim; in its middle it was necrotic and perforated. There was acute dilatation of the stomach and intestines; the stomach, the duodenum and 2 feet of the jejunum were hugely dilated with fluid and a little gas. The gastric musculature was not thickened; there were cardiac hypertrophy; chronic cardiac valvular disease (aortic valve), and generalized arteriosclerosis. The bone marrow was hypertrophic. The parathyroids were normal.

COMMENT

A diminished concentration of calcium in the blood has been shown to produce tetany, and in the case under discussion, the lack of this element was demonstrated by analysis of the blood. As bearing on the question of the cause of the disturbance of calcium metabolism in this particular individual, the following points are emphasized:

1. According to von Noorden, calcium is absorbed in the upper part of the small intestine, combined with phosphoric and carbonic acids, but more especially with fatty acids in the form of soaps. Sprue patients, however, and many stool examinations proved it in this case, cannot readily digest fats. Is it not conceivable, then, that calcium was carried on with the fats, and that its absorption through the diseased intestinal mucosa was insufficient to maintain the proper balance? This is mentioned as a possible predisposing factor.

Calcium is mostly excreted into the large bowel; and in the present instance, owing to the prolonged intes-

tinal irritation lasting over six or more years, the excretory rate of the substance by this outlet may have been abnormally increased. Such abnormal elimination would have tended to disturb still further the calcium equilibrium.

2. Clinically, tetany is occasionally associated with gastric dilatation, usually following pyloric obstruction and accompanied by considerable vomiting. We have produced pedal spasms in dogs by simply closing the pylorus with a ligature, and have found, as did McCann,² that an increased concentration of carbon dioxid bound as bicarbonate in the plasma, and a gradual diminution and final loss of free or combined hydrochloric acid in the gastric contents, resulted from this procedure. Gastric tetany is not known to be associated with a diminished calcium concentration in the blood, although calcium therapy relieves it.³ Comparison with this case reveals certain similarities and decided differences as well. There was some vomiting, and at necropsy the stomach as well as the duodenum was found hugely dilated, but with no pyloric obstruction. A specimen of vomitus examined shortly after the onset of tetany showed that there was no acid present; however, in the presence of a patent pylorus this may well have been due to duodenal regurgitation. A Van Slyke carbon dioxid determination revealed no alkalosis (57.6 c.c.). Furthermore, there was an actual decrease in the calcium concentration of the serum unrelieved by calcium lactate infusions. These findings are opposed to the classification of this case as one of simple so-called "gastric tetany," even though the factors involved may have had some causal influences.

3. Tetany occurs as a rare complication of acute infectious diseases, but in this instance it seems far fetched to attribute any direct etiologic significance to the appendicitis and general peritonitis found at necropsy.

4. Calcium infusions can usually be counted on to abolish the seizures of tetany, but in this case there was no abatement, and the failure was mirrored in the blood analyses. It was a great surprise to find that injections of as much as 400 c.c. of a 0.2 per cent solution of calcium lactate, which theoretically should increase calcium to the extent of about 5 mg. per hundred c.c., had no such effect. Within thirty minutes after both infusions, the quantity of the calcium introduced had left the blood flowing through the peripheral circulation. Was the calcium excreted in that short period into the intestine, was the condition of the blood colloids such that the calcium present existed in saturated solution and any additional calcium was immediately precipitated, or was calcium immediately claimed by lime-starved tissue cells? That this is not the case in parathyroid tetany is shown by the following analyses, made at the same time as the foregoing determinations:

In a dog in acute tetany, the serum calcium was 5.1 mg. per hundred. Infusion of 40 c.c. of 1 per cent. calcium chlorid solution was followed by complete cessation of symptoms. The serum calcium, thirty minutes later, was 9 mg. per hundred.

That the condition of the blood was an important factor is suggested by the rise in calcium following the transfusion of normal blood. We consider some of these points suggestive, but not conclusive enough to form any hypothesis for explaining the course of events which led up to the state of tetany.

AGREEMENT IN RESULTS OF THE WASSERMANN REACTION

A STUDY OF TESTS PERFORMED BY TWO LABORATORIES IN THREE THOUSAND SUCCESSIVE HOSPITAL ADMISSIONS *

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It has been the custom at the Psychopathic Department of the Boston State Hospital, for the past few years, to have the blood of each patient examined by two independent laboratories. This was done primarily for the safeguarding of the patient against erroneous conclusions based on one test; and, secondarily, in order to obtain information which would be valuable to ourselves in estimating the results of the laboratories; that is, to put us in a position in which we would be able to interpret the findings more correctly. The two laboratories selected for this purpose were the laboratory of the Massachusetts Department of Health and the laboratory of the Boston City Department of Health. Dr. Hinton and Dr. Castleman, of the respective laboratories, were most cooperative and desirous of having this work carried out, both for our own information and for what service it would be to them in estimating their own work. The spirit of these men cannot be too highly commended, and the results that are presented herewith are indicative that not only in this respect, but in all others, they have attempted to bring a high standard into their laboratories.

A Wassermann test made on each patient admitted to the hospital is, and has been, a routine since the opening of the hospital. During the time that the tests were made in the two laboratories, it was customary to bleed the patient into two test-tubes, one tube being sent to the city laboratory, the other to the state laboratory, conditions thus being as nearly similar as possible. To date, 3,000 patients have had their blood tested in this way. In some cases the test was repeated several times, especially in those cases in which there was a difference in the report.

Without going into any details of the technic used by these two laboratories,¹ it may briefly be stated that Laboratory A uses three cholesterinized antigens of different sensitivities to check each positive reaction; Laboratory B, in addition to the cholesterinized antigen, employs an acetone insoluble antigen.

Whenever possible, those cases in which the reports were not the same from the two laboratories were retested, in an endeavor to get a report free from technical error. Unfortunately, the patients, as a rule, stayed only a few days at the hospital, and it was not possible to carry this out as far as was desired in many instances. However, in a number we were able to get a uniformity of results after the first test, rather indicating that the result of the first test might have been due to some technical error; and this, as a possible explanation, is further borne out by the fact that some cases were tested many times by one laboratory, with the result that occasionally a case giving consistently positive results for ten, fifteen or more tests, would suddenly give a negative reaction, to be followed again

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1. The designations Laboratory A and Laboratory B are used throughout as this is not intended as an attempt to show relative merits of the two laboratories, but rather to indicate the value of the Wassermann test.

2. McCann, W. S.: *J. Biol. Chem.* **35**: 553 (Sept. 18) 1918.

3. Kinnicutt, F. P.: *Am. J. M. Sc.* **138**: 1, 1909.

by a series of positive tests. It is possible, of course, that this may have been due at times to some change in the patient's serum, a condition which is not so very likely, and which, at any rate, is not explicable. Of especial interest in this work is a group of tests which we have made on children suspected of congenital syphilis, and who all fall into a class of poorly nourished and mentally retarded children. In this group, we found a series of reactions differing from one another somewhat as follows: doubtful, negative, positive, negative. We have never noticed this result in adults or in apparently healthy children. In these cases we have felt that the Wassermann reaction has not been of especial value in determining our diagnosis of congenital syphilis.

The tests are reported a little differently in the two laboratories. Laboratory A reports "positive, doubtful and negative," the positive test representing what is sometimes spoken of as a ++++ reaction, which is a strongly positive test in the three antigens used.

VARIATIONS IN THREE THOUSAND CASES

	No.	Per Cent.
Total number of variations, including those reported positive, moderately positive, or doubtful by one laboratory and negative by the other	197	6.56
Cases reported positive or doubtful by Laboratory A and negative by Laboratory B.....	70	2.33
Cases reported positive, moderately positive, or doubtful by Laboratory B and negative by Laboratory A.....	127	4.23
Cases reported moderately positive or doubtful by either laboratory and negative by the other laboratory.....	77	
Cases reported straight positive by either laboratory and negative by the other laboratory.....	120	4.0
Cases reported straight positive by Laboratory A and negative by Laboratory B.....	42	1.4
Cases reported straight positive by Laboratory B and negative by Laboratory A.....	78	2.6
Cases in variation group known to be syphilitic	35	
Cases in variation group known to be syphilitic reported positive by Laboratory A and negative by Laboratory B	20	
Cases in variation group known to be syphilitic reported positive by Laboratory B and negative by Laboratory A	15	
Possible false positives (including positive and doubtful) from Laboratory A (70—20)	50	1.66
Possible false positives (including positive, moderately positive, and doubtful) from Laboratory B (127—15).....	112	3.4
Considering only the 42 straight positives from Laboratory A and subtracting the 20 known to be syphilitic (these happened to give straight positive reactions) the possible false positives are	22	0.73
Considering only the 78 straight positives from Laboratory B and subtracting the number of these known to be syphilitic (5), the possible false positives are.....	73	2.43

The doubtful reaction is reported in those cases in which one or two of the antigens gave a strong inhibition of hemolysis, with complete or nearly complete hemolysis in the other one or two antigens. Laboratory B reports "positive" for the strongly positive reactions; "moderately positive" for the reactions not so markedly positive, and "doubtful" when there is not a complete uniformity in the reactions of the different antigens. In both laboratories, "negative" represents the condition interpreted as the absence of the test for syphilis.

The accompanying table summarizes the results obtained in these 3,000 cases. (Approximately 15 per cent. of the cases tested positive.)

It seems only fair to state that a moderately positive or doubtful Wassermann reaction is not sufficient evidence on which to base a diagnosis of syphilis, unless backed by other strong points. It is always advised that in such a case the test be repeated until either a strongly positive or a definitely negative reaction is established. Hence, in considering the possibilities of going wrong in accepting the reactions of one laboratory, one would consider only the cases that are reported as straight positives. As the table indi-

cates, the percentage variations between the two laboratories, considering the straight positives, is only 4, a percentage which we consider exceedingly low, and justifying the technic of these laboratories to a high degree.

If the possibility of making an erroneous diagnosis of syphilis, based on a positive reaction from but one laboratory, is considered, we see that this is reduced greatly, in that the percentage from the one laboratory is 1.4, and from the other, 2.6. This is stated on the assumption that when one laboratory gives a negative reaction and the other a positive, the positive does not represent syphilis. This is obviously not a correct hypothesis, as we have to deal with cases which are undoubtedly syphilis, but which give negative reactions in one laboratory, due either to the weakness of the antigen, or to a technical error. We therefore went over the cases in which this discrepancy occurred, from the clinical standpoint, and considered only those cases in which very definite evidences of syphilis were obtained. This included cases in which the history was absolute, such as patients that had been known to have syphilis and had given a positive Wassermann reaction in the past and had been under treatment, or cases of syphilis of the central nervous system, in which the spinal fluid findings were positive. Many cases highly suggestive of syphilis, from the fact either that the patients were prostitutes or that they had had symptoms on which one would practically be justified in making a diagnosis of syphilis, were considered as not syphilitic, in order not to prejudice the conclusions in favor of the laboratory. Deducting the cases, then, that were undoubtedly syphilitic, we find that of the 3,000 cases tested, Laboratory A returned twenty-two positive reactions which were reported negative in the same cases by Laboratory B, and which did not give definite evidence of syphilis. This would make a possible "false positive" report (i. e., a positive reaction, due to an error in the performance of the test, on a nonsyphilitic serum) in only 0.73 per cent. From Laboratory B this percentage² was 2.43. These low percentages are undoubtedly higher than the facts justify, as there can be no doubt that some of these cases were syphilitic. However, if we accept these figures as the worst possible, they are still such that we can place a great deal of confidence in the reports of the laboratories. This study shows that it is possible to obtain "false negative" or "false positive" reactions. It should be emphasized strongly that these figures as given represent a discrepancy between the two laboratories on the first test. In the majority of cases, a uniformity of report was obtained on repetition.

While these figures are exceedingly low, and therefore very satisfactory, it is true that no matter how small the percentage of error may be, if it affects any given individual it is a 100 per cent. error for that individual, and therefore it is the duty of the clinician to protect him as far as is possible. This can be accomplished in a number of ways. Several repetitions of the test giving uniform results is very good evidence that the result as reported is correct. Secondly, having the blood tested by two laboratories simultaneously affords a good check. If there is a discrepancy, that is evidence that one or the other test may be an error, and a repetition of the test is indi-

2. The blood frequently did not reach Laboratory B for three or four days after being taken. There is evidence that blood which has stood for some time may give positive results in nonsyphilitic cases because of contamination.

cated. It should be emphasized that a knowledge of the laboratory and its standards, technic and method of reporting is more important in obtaining the information desired than the reports from a number of laboratories which may not be careful or accurate. In other words, it is the clinician's duty to know the possibility of error in the laboratory that he is using. It is much better to have a test repeated several times in a laboratory to whose technic one is accustomed than to have a single test made in several laboratories, which will only lead to confusion, especially when one remembers that the sensitivity of the antigens plays a considerable rôle.

It is true that occasionally on certain days things do not go entirely well in a laboratory, and it is found that one particular day may give a high percentage of positives. This affords a means of checking up the results, and is commonly used by the laboratory chiefs. Thus, it is usual to run known positive and known negative serums for this purpose. It is possible for the clinician to use a similar check on the laboratory. In hospital practice, in which a great number of tests are made each day, it is possible to draw a conclusion as to whether too high or too low a percentage of positives is received. For example, on a certain day, if we find that a number of cases in which there is no reason to suspect syphilis are reported as giving positive Wassermann reactions, we may be suspicious that something may have gone wrong in the laboratory. On the other hand, if our known syphilitics give negative reactions, this is also highly suggestive. Thus, the patient may be amply protected against incorrect reports, and the value of the Wassermann test greatly enhanced by the clinician himself.

A comparison of the results as shown in this study with results expected from other laboratory tests seems to us to be extremely satisfactory. The results would seem to be as good as one would expect from a Widal reaction, a Schick test, a diphtheria smear, or a single examination of the urine in a case in which nephritis is suspected. It is only fair to admit that we were somewhat surprised to find how well the tests of these two laboratories checked. Until we really added up the figures, our impression was that there were very many more variations. This was undoubtedly the result of the individual equation. Each instance in which there was a discrepancy stood out strongly and clearly, whereas those that agreed were passed over without any consideration whatsoever.

SUMMARY

The blood serums of 3,000 patients were subjected to the Wassermann tests by two independent laboratories. An analysis of the results showed that there was a complete uniformity in the findings of the two laboratories in 93.44 per cent. The 6.56 per cent. variation included cases reported as doubtful. Considering only the variation of cases reported positive by one laboratory and negative by the other, the percentage variation was 4. This was 1.4 per cent. positive in one laboratory and 2.6 per cent. positive by the other laboratory. Some of the cases reported positive by one laboratory and negative by the other were known to be syphilitic, so that the negative reaction was the incorrect one. Considering, then, the cases that either laboratory may have reported as positive in nonsyphilitic cases, the percentage was 3.16. This is probably a higher percentage for false posi-

tives than actually occurred, as some of these cases were presumably syphilitic. This percentage variation is based on only one test. Repetitions resulted in a uniformity of findings in the majority of cases. This is considered a good testimonial for the accuracy of the tests as performed in these two laboratories.

DUODENAL PERFORATION (FISTULA) TREATED BY DUODENAL (JEJUNAL) ALIMENTATION

ANOTHER CASE

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About a year ago I reported a case of duodenal perforation successfully treated by jejunal alimentation.¹ As these cases are rare and of difficult management I take the liberty of reporting another case with duodenal fistula which I recently had under observation in conjunction with Dr. Willy Meyer.

REPORT OF CASE

History.—A. P. P., man, aged 50, born in the United States, seen, May 10, 1919, was first seized twenty years before with an attack of pain and gas in the epigastrium, which lasted several hours. Eight years later, he had three attacks in a period of three months. Five years later, the attacks came on more frequently and then disappeared until the past six or seven years, when they came on two or three times a year. The attacks were sudden, lasted at the utmost twenty-four hours, disappeared, and would not recur for a long period. During the attacks there was severe pain in the epigastrium, radiating across both sides of the abdomen. There had been no vomiting, but continuous belching of gas. The patient said that when he walked 2 or 3 miles the attack would disappear more readily than otherwise. The pain had no relation to food. The bowels were usually constipated. There was never any jaundice. During the attack the patient would lose 6 or 7 pounds, which, however, he would quickly regain. The chief complaints at the time of the examination were distress in the epigastrium, and constipation.

Physical Examination.—The only positive relevant finding was epigastric pain on deep pressure. The gastric contents were positive for hydrochloric acid; hydrochloric acid, 24; acidity, 54; blood, negative; there were numerous starch granules, a few leukocytes, bile, mucus and epithelial cells. The duodenal contents were greenish yellow and very turbid; alkalinity, 30; amylase, 5; steapsin, 2; trypsin, 4; there were cholesterol crystals, calcium bilirubin crystals and bacteria. Bacteriologic examination yielded colon bacillus and staphylococcus. The duodenal bucket revealed bile stain, 53-63; no blood stain. Contents from duodenal bucket: amylase, 0; steapsin, 0; trypsin, 0; hydrochloric acid \pm . The white blood count was 9,800; polymorphonuclears, 61 per cent.; lymphocytes, 39 per cent.; hemoglobin, 80 per cent. Roentgen examination was negative with regard to the gastro-intestinal tract and the gallbladder. The Wassermann test was negative. In the urine, albumin varied from negative to a trace; there were a few red blood cells and a few white blood cells; sugar was negative. The systolic blood pressure was 115; diastolic, 74. The feces was negative for blood; mucus was present; there were no ova.

Based on the findings of the duodenal contents, very turbid bile in the fasting condition, and the history, a diagnosis of cholecystitis with probable gallstones was made, and an operation advised.

1. Einhorn, Max: A Case of Duodenal Perforation Successfully Treated by Duodenal (Jejunal) Alimentation, *Med. Rec.* 94: 927 (Nov. 30) 1918.

Operation and Result.—Dr. Willy Meyer, May 26, performed a cholecystectomy. The gallbladder was found filled with stones. The pathologic diagnosis was chronic catarrhal cholecystitis. The patient was discharged from the hospital, July 12. Three weeks after the operation, the last tampon was removed. After that, bubbles of air came from the upper angle of the wound. Then a persistent discharge developed from this part of the wound. Frequently a great many bubbles of gas would come up from the same source and annoy the patient greatly. He was first seen by me with this discharge, October 11. The discharge was examined and found to contain food, was alkaline, and looked rather grayish.

EXAMINATIONS OF DUODENAL CONTENTS AS OBTAINED FROM THE FISTULA AND THROUGH THE DUODENAL TUBE

Discharge from the Fistula					
Date	Reaction	Amylopsin	Steapsin	Trypsin	Comment
10/11/19	Alkaline	2	0	0	Food present; many pus corpuscles; few red blood cells
10/15/19	Alkaline	—	—	—	Direct smear; white blood cells; milk; red blood cells; mucus
10/26/19	Alkaline	—	—	—	No food; pus corpuscles; few red blood cells
Duodenal Contents Obtained Through the Tube					
Date	Reaction	Amylopsin	Steapsin	Trypsin	Comment
10/21/19	Alkaline	5	2	1	Yellow; slightly turbid; mucus; pus corpuscles
10/24/19	25	9	1	3	Golden-yellow; mucus
10/25/19	20	9	1	3	Yellow, bile-stained cells; white blood cells; goblet cells
10/25/19	25	6	1	2	Here the duodenal contents were yellow, brown and turbid

The accompanying table shows the result of examination of the fistula discharge as contrasted with the duodenal contents proper obtained through the tube.

The discharge being slightly alkaline, containing food, and hardly any traces of bile, the diagnosis of a duodenal fistula in the ascending portion of the duodenum, probably not very far from the pylorus, was made. The patient was then given duodenal (jejunal) feeding. A duodenal tube (44 inches long) was inserted, October 15. Duodenal feeding was started, October 17.

October 22, a roentgen examination was made by William H. Stewart. The tube, inserted through the fistula, entered the duodenum and ran parallel with the duodenal tube.

October 27, the tube, being clogged, was removed, cleaned and reinserted. It was left in place until November 19; another tube was introduced, November 23.

December 4, the wound closed by itself; the tube was removed.

December 12, the patient was discharged from the hospital.

December 22, I saw the patient. The wound had healed perfectly, and the patient had gained in weight and strength.

COMMENT

The diagnosis of a duodenal fistula situated between the pylorus and the papilla of Vater was established by the character of material oozing from the fistula. It was of alkaline reaction and contained food particles and usually no bile. As the patient had enough acid in his stomach the fistula must have come from the duodenum. The frequent absence of bile in it demonstrated that the opening must be situated above the papilla of Vater. This conclusion appears to find corroboration in the roentgen-ray examination and also in the clinical syndrome of the case.

The roentgen ray shows the catheter inserted into the fistula, meeting the duodenal tube a short distance from the pylorus.

Among the symptoms the patient presented from the fistula, the intense inflammation of the skin around the

duodenal fistula usually encountered was missing here, the skin preserving its natural color. This must be explained by the fact that the secretion did not contain pancreatic juice, as is in fact seen from the examinations of the fistulous material given in the table. The lack of pancreatic juice likewise speaks for the location of the fistula above the papilla of Vater.

The treatment consisted of atropin in conjunction with the jejunal alimentation. The patient first lost considerable weight (20 pounds). After three weeks of jejunal alimentation, the tube was pulled up to some extent so that the capsule end was now situated in the duodenum proper. We now had real duodenal alimentation, which agreed with the patient much better, as he did not lose any more in weight.

A short while after the jejunal alimentation had been begun there was no food found in the secretion from the fistula, although some pus corpuscles and a few red blood corpuscles were always encountered. A little while later, December 4, the opening closed up by itself and has remained closed ever since. The patient is now enjoying perfect health. He eats and drinks anything he chooses, without any discomfort. He has regained his lost weight, and there is no trace of the fistula left, excepting the visible scar on the abdomen.

The healing of the fistula by duodenal alimentation, in the case described and in the one reported a year ago, shows that we have in the duodenal tube, and the method of feeding through it, an important aid to overcome this very tedious and what was formerly thought to be an almost intractable condition.

20 East Sixty-Third Street.

GUMMA OF THE BREAST

REPORT OF A PROBABLE CASE

LOYD THOMPSON, M.D.

HOT SPRINGS, ARK.

The paucity of references, particularly by American writers, to the subject of syphilis of the breast makes this report and a review of the subject at this time desirable.

REPORT OF CASE

History.—Mrs. W. E. S., aged 33, housewife, came to me, Oct. 27, 1919, complaining of "nervousness" at times, pains in the arms and neck, frequent headache and a lump in the breast. An older sister was operated on for cancer at 36. The mother was living and well at 65. The father died following an injury. Five brothers and sisters were living and well. The patient had had appendicitis nine or ten years before, followed by several attacks. After the lapse of eighteen months, the appendix was removed. She had had measles as a child. She had been married twelve years and had had a miscarriage at seven months during the first year, and a second miscarriage at two months during the second year. I treated the husband for syphilis during the early spring of 1917. He had suffered from this disease for three years before marriage, but was assured by his family physician that he was cured. The patient never showed any outward manifestations of the disease, had enjoyed quite good health all her married life, and at the time I treated her husband, her blood Wassermann reaction was negative. About January, 1918, she began to notice pains and nervous twitchings in the neck, arms and legs. These were never severe. The lump in the breast was noticed in November, 1918, at which time it was about the size of a walnut. It gradually became larger, and during the summer of 1919 she was examined by a surgeon and had a Wassermann test made. This was reported as weakly positive. A short time

before coming to me she was examined by another physician, at which time her blood Wassermann reaction was strongly positive, and in spite of this he advised her to have an operation at once. This she refused, and came to me for treatment.

Examination.—The external genitals were negative. The superficial lymphatic glands were not palpable. The skin and mucous membranes were negative. An examination of the bones revealed a slightly tender spot on the sternum. The heart, lungs and abdomen were negative. The systolic blood pressure was 110; diastolic, 80. The eyegrounds were negative. The pupils reacted to light and accommodation. The left knee jerk was quite sluggish; otherwise the neurologic examination was negative. An examination of the left breast revealed a tumor of horseshoe shape, about 4 inches long and from 1 to 1½ inches in diameter, in the lower left quadrant of the breast. This was not tender, and the axillary glands on the left side were not enlarged. The blood Wassermann test by the classical method, with cholesterinized antigen, was +++; in the ice-box and by the Thompson modification, ++++. A diagnosis of gumma of the breast was made and the patient placed on treatment.

Treatment and Course.—Mercuric benzoate was administered intramuscularly in doses of 0.02 gm. daily. Potassium iodid was given by mouth, 10 drops three times a day, increasing 5 drops daily until 100 drops three times a day were reached. Neo-arsphenamin in 0.6 gm. doses was administered at weekly intervals for six weeks. At the end of this time, Dec. 8, 1919, the tumor had decreased in size until it was about one fourth of its original dimensions, when the patient was forced to leave for her home, but promised to return for further treatment if the tumor began to increase in size. About six weeks after leaving Hot Springs the patient began taking "mixed treatment," which was continued more or less regularly till Feb. 26, 1920, when I again saw her during a visit to her home city. At this time the tumor had become considerably smaller and had divided into two parts, one being about the size of a walnut and the other one about half that size.

In view of the history of syphilis in the husband, the two miscarriages, the positive Wassermann test and the result of the therapy, there seems to be no doubt that this case was one of gumma of the breast.

HISTORICAL

Most writers on the subject of breast syphilis state that Sauvages,¹ in 1768, was the first to recognize this condition. However, Astruc,² as early as 1736, speaks of cancer of the breast as one of the symptoms of syphilis peculiar to women, but does not mention any specific instances. Sauvages' case undoubtedly was one of gumma of the breast. An unmarried woman of 30, who had contracted syphilis ten years before, presented a hard and knobby tumor in each breast, the size of a hen's egg, both of which were painful. There were also present small ulcerations in the mouth and the vagina. All symptoms of lesions cleared up in six weeks under mercury, and never recurred.

The leading syphilographers who followed Astruc in the latter part of the eighteenth and the early part of the nineteenth centuries, notably Hunter,³ Bell,⁴ and Swediaur,⁵ do not mention syphilis of the breast; but about the middle of the nineteenth century gummas of the mammae began to be recognized, and cases were reported by Yvaren,⁶ Verneuil,⁷ Richet,⁸ Velpeau,⁹

Lancereaux¹⁰ and others. The latter author, in his *Traité de la syphilis*, published in 1867, gives a very good description of the condition and mentions five or six cases which had been reported. Since that time, reports of less than forty cases have appeared, and these mainly in the French and German literature.

PATHOLOGY

The only description of the pathology of syphilis of the breast which I have been able to find is that of Reinecke,¹¹ who described a case of syphilitic mastitis. The patient was a woman of 37, who died from uremic coma. The kidneys and spleen were extensively amyloid, and the liver the site of gummas and deep scars. The upper half of the breast was very hard, the tissue on the cut surface dry, while numerous red or yellowish-red, circumscribed foci, the size of a pinhead or larger, projected above the cut surface. These red, firm nodules were found to be due to proliferation of the interlobular and intralobular connective tissue, with degeneration and destruction of the glandular cells whose place was being taken up by connective tissue. The vessels, especially the arteries, were markedly thickened. While this description is not that of gumma, in the strictest sense, the nodules may be considered as small gummas, and there is no reason to believe that larger gummas of the breast would show any essentially different histopathology than similar lesions of other regions.

CLINICAL HISTORY

While gummas of the breast are more common in women (about three fourths of the reported cases occurring in that sex), they are sometimes seen in men. One or both breasts may be affected, and the tumors may be single or multiple, varying in size from a pea to an orange, or larger. They may be subcutaneous or intraparenchymatous. They may occur in any portion of the breast, and usually appear as hard, well circumscribed, movable tumors, which slowly increase in size. As a rule there is no pain, but in a few cases this has been a rather marked symptom. This was true in one of Bissell's¹² cases, in which the pain was sharp and always occurred at night. Sometimes, while there is no pain, the tumor is exceedingly tender on pressure. Usually there is no involvement of the lymphatic glands of the axilla, but this has been reported in some cases.

If untreated, these tumors go on to softening ulceration and sloughing. The ulcerations present the typical punched-out appearance of ulcerating gummas of other regions, with more or less infiltration of the borders. When sloughing occurs the lesion is most foul smelling and filled with a grumous, brownish fluid. A most remarkable case of this kind was reported by Bryant,¹³ in which the entire breast sloughed out and left a clear, granulating surface. Actual gangrene also has been noted, as in Robinson's¹⁴ case.

Usually the tumors are not adherent to the overlying skin, and they are freely movable. As a rule, also, the nipples are not retracted, but this does sometimes occur, as in the case of Gay.¹⁵

1. Sauvages: *Nosologia Methodica*, Amsterdam 1:149, 1768.
2. Astruc: *De morbis venereis*, Libri sex, Paris, 1736, p. 296.
3. Hunter: *A Treatise on the Venereal Diseases*, Philadelphia, 1791.
4. Bell: *Treatise on Gonorrhea Virulenta and Lues Venerea*, London, 1796.
5. Swediaur: *Traité des maladies syphilitiques*, Paris, 1801.
6. Yvaren: *Des métamorphoses de la syphilis*, Paris, 1854, p. 435.
7. Verneuil: *Bull. Soc. anat. de Par.* 30:96, 1856.
8. Richet: *Traité d'anatomie chirurgicale*, Paris, 1857, p. 513.
9. Velpeau: *Traité des maladies du sein*, Paris, 1860, p. 534.

10. Lancereaux: *Traité de la syphilis*, Paris, 1867, p. 180.
11. Reinecke: *Centralbl. f. allg. Path. u. path. Anat.* 10:316, 1899.
12. Bissell: *Syphilitic Tumors of the Breast*, Med. Rec. 72:14, 1907.
13. Bryant: *Diseases of the Breast*, London, 1887, p. 72.
14. Robinson: *Case of Syphilitic Gangrene of the Breasts*, Med. Times & Gaz., London 2:261, 1864.
15. Gay: *Syphilitic Mammary Disease, Report of a Case of Inherited Syphilis, Removal of Mammary Tumors by Thomas Method, After Treatment by the Iodides*, Med. Rec. 24:91, 1883.

Gummas of the breast may also affect congenital syphilitics, and cases have been reported by Gay,¹⁵ Gromo,¹⁶ Neumann¹⁷ and others.

The breast may also be the seat of gummas which have extended from gummatous lesions of the skin over the breast, or from gummatous lesions of the underlying ribs.

DIAGNOSIS

Any tumor of the breast should be looked on with suspicion, and careful anamnesis and examination for other evidences of syphilis, including the Wassermann reaction, should be made.

In women, the history is not of so much importance, as quite frequently women are not aware of a syphilitic infection, although a history of miscarriage would be at least suggestive. Too much reliance also is not to be placed on a negative history in men, as for various reasons the history may be given incorrectly.

Of course, the differential diagnosis of any breast tumor can be made by microscopic examination of a section; but it is unwise to perform a biopsy for such an examination unless preparation is made to perform at the same time a radical operation for carcinoma if the tumor is found to be such.

Gumma of the breast is to be differentiated from chancre, abscess, benign tumor, carcinoma, sarcoma, tuberculosis, actinomycosis and sporotrichosis.

Gumma of the breast sometimes markedly resembles chancre and has been mistaken for this condition. However, as a rule, spirochetes can be demonstrated in chancre, while they are very hard to find in gumma, and the axillary lymph glands are more frequently enlarged. If the chancre is seen early, the Wassermann reaction will be negative, but later will become positive, while with gumma it may or may not be positive.

Abscess of the breast will present more pain than gumma, will fluctuate, and on aspiration, pus will be found.

Benign tumors may be most difficult of differentiation, as they never cause enlargement of the axillary lymph glands. The Wassermann reaction, however, is negative.

Carcinoma of the breast, as a rule, occurs later in life than does gumma. The process of ulceration is slower, the involvement of axillary glands more frequent and occurs earlier, while carcinoma is usually more painful than gumma.

Sarcoma of the breast is very rare; but the differentiation from gumma may be most difficult, and recourse to laboratory aid may be necessary.

In tuberculosis of the breast, the axillary glands are virtually always enlarged. Sinuses and fistulas are usually formed by the gradual extension of the process to the surface, while an examination of the discharge, as a rule, will show tubercle bacilli.

Actinomycosis of the breast is rare, and is to be differentiated from gumma by the finding of ray-fungus in the pus of the discharge.

Sporotrichosis of the breast is more rare, and its differentiation can be accomplished by the finding of the causative organisms.

Finally, in the diagnosis of gumma of the breast, it may be necessary to apply the therapeutic test. This is particularly true in the presence of a positive history or other clinical evidence of syphilis, or a positive Wassermann test.

PROGNOSIS

The prognosis of gumma of the breast in the main may be said to be good, though the prognosis for complete disappearance of the lesions depends on the recognition of the condition before ulceration has taken place. If the latter has occurred, while the lesions may, and usually do, heal under medication for syphilis there may be more or less scarring and, if the destruction of tissue has been great, considerable deformity.

TREATMENT

The treatment of gumma of the breast is the treatment of syphilis. It includes arsphenamin, mercury and iodids in some form or other. Sodium iodid intravenously in doses from 1 to 2 gm. and larger is to be highly recommended when large doses of potassium iodid by mouth are not well borne. In ulcerating lesions, local application of some powder, such as calomel and bismuth, equal parts, boric acid, acetanilid and calomel, equal parts, or aristol (thymol iodid) is highly beneficial.

It goes without saying that general hygienic measures should be instituted in gumma of the breast as in other types of syphilis.

Thompson Building.

LARYNGEAL CRISIS WITH AN UNUSUAL COMPLICATION

REPORT OF CASE

LEWIS T. GREGORY, M.D.
EVANSTON, ILL.

History.—Mrs. G. (27804), American, white, aged 39, widow, laundress, admitted as a suspicious case of tuberculous laryngitis to the Isolation Department of the Evanston Hospital, on the service of Dr. S. V. Balderston, complained of sudden attacks of difficulty in breathing; "tightness" in chest; hacking cough and hoarseness. She had not been well since an attack of influenza in the preceding fall. The present trouble dated back only about one month, when the patient developed a "cold" in the head, but paid little attention to it, as she was bothered with chronic catarrh. Four days before admission, the patient had a sudden attack of difficulty in breathing, which passed off in a few minutes. These paroxysms became more frequent and of greater severity. She had eight attacks during the first forty-eight hours after admission to the hospital, and about an equal number at home before coming to the hospital. She was unable to describe the "tightness" in her chest, but stated that the sensation was noticed only during the paroxysm. The cough was a more or less continuous hacking cough, and the hoarseness had become progressively worse until the patient was scarcely able to speak above a whisper. The patient had had the illnesses of childhood; "chronic rheumatism," chiefly in the legs, and worse at night; an abdominal disturbance leading to the removal of an ovarian cyst and the appendix four years before; sore throat several years before, which resisted treatment for a long time, and influenza last fall. The family and menstrual histories were negative. The patient had never been pregnant, and denied venereal infection. Her appetite was good, she slept fairly well, and there was no gastro-intestinal, pulmonary, cardiovascular or genito-urinary trouble not already mentioned.

Physical Examination.—The patient was well developed; she was somewhat hoarse, and occasionally gave a dry hacking cough. The temperature was 98 F., the pulse rate 88, and respiration 24. There was a large perforation of the nasal septum. The patient stated that she had had several operations on the nose for catarrh. Very slight symmetrical

16. Gromo: Contribution à l'étude des gommies du sein, Paris, 1878.

17. Neumann: Ueber die syphilitische Erkrankung der Brustdrüse, Allg. Wien. med. Ztg. 34: 593, 1889.

edema of the vocal cords was found. There were many small atrophic scars all over the chest and back. The patient said that these came from "pimples" that she had had several years previously. There were marked tenderness and slight roughening over the tibia of both legs. Examination of the throat, mouth, neck, lungs, heart and abdomen, and of the urine and blood yielded negative results. The neurologic examination was negative except for a slightly sluggish reaction of the pupil to light.

Treatment and Course.—Syphilis was suspected, and a Wassermann test was ordered. Before the report from the laboratory was received from this, a report of the nose and throat cultures (taken as a routine on admission) was positive for diphtheria. Ten thousand units of antitoxin were given.

As mentioned in the foregoing, during the first forty-eight hours after admission she had eight paroxysms of difficult breathing. I saw her in three of these. She would suddenly become very hoarse, and within a few seconds would have air hunger, which became progressively severe, until respiration was almost impossible, and the lips and face became markedly cyanosed. Before a hypodermic injection of atropin could be administered, the paroxysm was over. The average duration of these paroxysms was about three minutes. Between attacks she felt perfectly comfortable except for the slight cough and hoarseness.

On the third day, the Wassermann report came back ++++ with fresh and inactivated serum and with two antigens. A diagnosis of syphilitic laryngeal crisis (laryngeal stroke of Charcot) was made, and antisyphilitic treatment was instituted. Neo-arsphenamin, 0.45 gm., was given intravenously, and daily mercury rubs were started. After the first injection, the hoarseness started to clear up, and she had no further paroxysms.

It was necessary to keep her in quarantine for twenty-seven days before diphtheria bacilli had disappeared from the throat and nose.

To date she has kept up the weekly intravenous injection and daily rub, and so far has had no return of any of the symptoms, and the tenderness over the tibia and the nightly pains in the legs have entirely disappeared.

SYPHILITIC LARYNGEAL LESIONS

Conner,¹ in 1903, reviewed the literature of syphilis of the larynx, and found that 128 cases had been reported. None of these, however, appear to be of a tabetic type, but were syphilitic lesions localized in the larynx proper.

Weinstein,² in 1916, reported a case more like the one reported above. The patient lost his voice, and a week passed before a diagnosis was made. Neo-arsphenamin was administered intravenously, and within five hours his power of speech had returned.

Kyle,³ in 1918, gave a summary of the various syphilitic laryngeal lesions. He distinguished: (1) mucous patch; (2) thickening of the vocal cords; (3) paresis, variable from week to week; (4) gumma; (5) ulceration; (6) cicatricial changes, and (7) invasion of contiguous parts. He also stated that a primary syphilitic laryngeal lesion has not been reported, and that gumma is the most frequent type.

COMMENT

The case reported was apparently a syphilitic laryngeal paresis, corresponding to a gastric crisis, so frequently seen. It might have been an unusual type of diphtheritic paresis, but this is not likely, as there was no history of any diphtheritic process and no local evidence of diphtheria in an active form. Furthermore,

it was a paresis, transient in type, and not a paralysis, as usually seen following diphtheria. Finally, the Wassermann reaction was strongly positive with other evidence of syphilis as seen in the sluggish pupil, perforated septum, scars on the back and chest, and painful and roughened tibia, with a history of chronic sore throat and nocturnal pains in the lower extremities. The immediate response to antisyphilitic treatment confirms the diagnosis. As the left recurrent laryngeal nerve hooks around the arch of the aorta, one interesting possible explanation of the paroxysm is that a beginning syphilitic aortitis at this point caused an irritation to that nerve.

Evanston Hospital.

A METHOD OF TREATMENT FOR NEUROSYPHILIS*

JOHN A. KOLMER, M.D.

PHILADELPHIA

A criticism of the Swift-Ellis system of intraspinal therapy of neurosyphilis may be made because of the minute amounts of arsphenamin detectable as arsenic, carried over in serum secured by drawing blood one hour after the intravenous injection of arsphenamin. This objection is removed by the technic of Ogilvie, who adds arsphenamin, and by that of Marinesco, who adds neo-arsphenamin, to serum in vitro prior to intraspinal injection; but in both methods the patient may be deprived of the beneficial effects of the intravenous administration of these drugs, which probably constitutes a valuable part of the Swift-Ellis treatment. For more than a year, I have used a plan of combined treatment with mercurials and arsphenamin by which I believe that these objections are corrected. In addition, advantage is taken of the very probable value of spinal drainage treatment advocated by Dercum and Gilpin, which is based on the assumption that the rapid withdrawal of cerebrospinal fluid is followed by an increase in the vascularity of the cord, resulting in improved nutrition and facilitating the possible passage of arsphenamin or mercury in the blood to the tissues of the cord and brain and cerebrospinal fluid. Dercum and Gilpin thoroughly drain the subarachnoid space by spinal puncture immediately after the intravenous injection of arsphenamin or during mercurial treatment, but do not inject anything intraspinally; spinal drainage alone has been reported by them as yielding beneficial results.

PLAN OF TREATMENT

Due care is taken to exclude all cases of probable brain tumor:

1. A "course" of treatment covers four weeks; during this period, twenty-four inunctions of mercury, 360 grains of potassium iodid and four combined intravenous and subdural injections of arsphenamin are given, followed by an intermission. Treatment begins with daily inunctions of mercury for one week and the oral administration of 5 grains of potassium iodid three times a day. At the end of this week the first intravenous and subdural injections of arsphenamin are given, and they are repeated at intervals of a week until four have been administered. Mercurial inunctions and potassium iodid are given throughout, excepting on the days when arsphenamin is administered.

* From the Dermatological Research Laboratories.

1. Conner, L. A.: Syphilis of the Trachea and Bronchi, *Am. J. M. Sc.* **125**: 57 (July) 1903.

2. Weinstein, Joseph: Syphilis of the Larynx, *New York M. J.* **104**: 165 (July 22) 1916.

3. Kyle, J. J.: Syphilis of the Larynx, *Am. J. Syphilis* **2**: 727 (Oct.) 1918.

The urine is examined at least once a week for evidences of renal irritation. If intolerance to mercury or iodid or both develops, the doses are reduced or the administrations are given every other day.

2. On the day when the intravenous and subdural injections of arsphenamin are given, the patient is put to bed at noon and lunch is omitted; light supper is generally permitted, and additional refreshment is given at 9 p. m. if food is desired. If the patient is constipated, a mild cathartic is given the day before to insure an evacuation of the bowels during the morning hours.

3. Six-tenths gm. of arsphenamin is dissolved in 150 c.c. of sterile physiologic sodium chlorid solution prepared of freshly distilled water¹ and a 15 per cent. solution of sodium hydroxid is added until the solution is just completely cleared, the amount of alkali being measured as drops or one-tenth cubic centimeters; after complete neutralization (clearing), three or four drops more of the alkali are added to the solution. *Sterile saline solution is now added to bring the total volume to exactly 200 c.c.;* each cubic centimeter of the solution contains, therefore, 0.003 gm. of arsphenamin, and 1 c.c. is removed to a sterile test tube to be used about one hour later in dose of 0.1 c.c. (0.0003 gm.) for arsphenamizing the serum in vitro.

4. The solution of arsphenamin is now administered by intravenous injection, the dose being approximately 0.6 gm., well diluted.

5. *Immediately after the intravenous injection, 25 c.c. of blood are removed* from a vein of the opposite arm with a sterile record or Luer syringe and expelled into a sterile 50 c.c. centrifuge tube fitting the international centrifuge. The tube has a narrow neck facilitating the use of a sterile rubber stopper, as shown in the illustration, and carries 4 c.c. of a sterile 10 per cent. solution of sodium citrate in physiologic sodium chlorid solution to prevent coagulation of the blood.

6. The blood is at once gently mixed with the citrate to prevent coagulation, and immediately centrifuged at high speed for at least twenty minutes, 10 or 12 c.c. of the clear plasma being pipetted aseptically to a sterile test tube. Sodium citrate may be omitted and the coagulum of blood gently broken up with a sterile glass rod before centrifuging, but from ten to fifteen minutes are required for coagulation before breaking up the clot, and the resulting serum is usually tinged with hemoglobin; the latter, however, is not harmful.

7. *One-tenth c.c. of the solution of arsphenamin held in readiness is now added to the plasma or serum and thoroughly mixed; the dose is 0.0003 gm. (1/3 mg.), which is safe for the first injection. Subsequently the dose may be increased to 0.2 c.c. (0.0006 gm.) and*

occasionally to 0.3 c.c. (0.0009 gm.); I have never given a larger amount.

8. The arsphenamized serum is placed in a water bath at 56 c. (132.8 F.) for thirty minutes.

9. Spinal puncture is now performed in an aseptic manner in the lateral posture with a gage No. 19 Babcock needle; the diameter of this needle is about 1 mm., which insures a slow rather than rapid flow of spinal fluid and consequently a gradual drop in cerebrospinal fluid pressure, and the needle fits the record syringe. Preliminary to puncture in the third or fourth lumbar interspace, the skin and subcutaneous tissues are infiltrated with about 1 c.c. of sterile 1 per cent. procain by means of a No. 26 needle, which renders spinal puncture almost painless. Spinal fluid is allowed to flow until about 30 c.c. are secured; at this time, the flow is usually quite slow, many seconds being required for the formation of a single drop. The warm arsphenamized serum (usually from 10 to 12 c.c.) is now slowly injected by gravity or with a record syringe. As a general rule the *slow* injection of 12 c.c. of serum under these conditions is almost painless. Each specimen of spinal fluid is submitted for total cell count (fresh fluid being used), protein determinations, and Wassermann and colloidal gold tests.

10. The foot of the bed is elevated and the patient requested to lie on his back for several hours and to stay in bed until the following day. In every instance but one the patient has been able to leave the hospital the following morning, feeling no ill effects, except the soreness resulting from the needle punctures.

The time required for the operative procedures is about two hours, thus distributed:

(a) About thirty minutes for the intravenous injection of arsphenamin and the withdrawal of blood.

(b) About one hour to secure and arsphenamize the serum.

(c) About one-half hour to conduct spinal puncture, drain the canal, and inject the arsphenamized serum.

The 1 c.c. of solution of arsphenamin carried over in a sterile test tube for arsphenamizing the serum may be used for this purpose with safety any time within three hours of its preparation.

ADVANTAGES

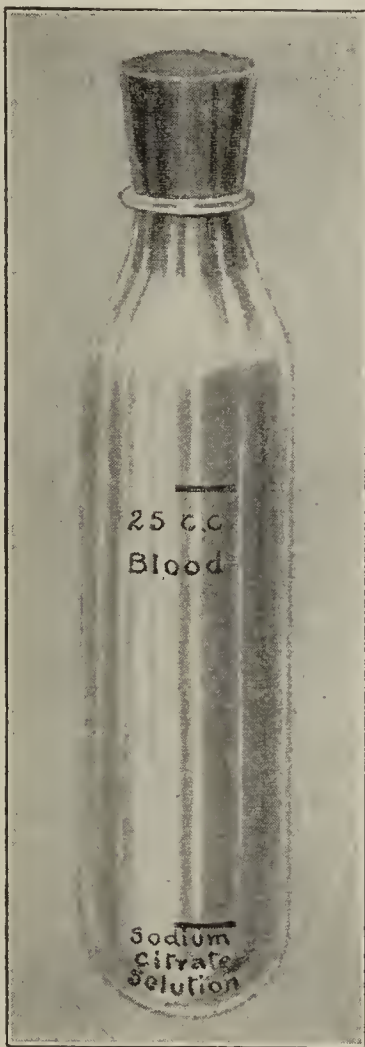
The advantages of this method may be thus summarized:

1. The patient receives arsphenamin both intravenously and intraspinally.

2. Blood is removed at once, insuring in the serum a larger amount of arsphenamin than is secured after an interval of an hour, as in the Swift-Ellis method.

3. Plasma or serum is secured at once, rendering the complete treatment possible within two or three hours instead of an interval of over night between the intravenous and intraspinal treatments.

4. The removal of from 20 to 30 c.c. of cerebrospinal fluid, followed by the injection of but 10 to 12 c.c. of arsphenamized serum, very probably leaves cerebro-



Centrifuge tube for the aseptic collection of plasma and serum.

1. Kolmer, J. A., and Yagle, E. M.: Hemolytic Activity of Solutions of Arsphenamin and Neo-Arsphenamin (J. A. M. A. 74: 643 [March 6] 1920). The use of sterile physiologic sodium chlorid solution instead of water, and the addition of only a slight excess of alkali over that required for complete clearing of the solution instead of one third excess, reduce the hemolytic activity of the solution, which is probably a factor of importance in the intravenous injection of 200 c.c.

spinal fluid pressure reduced for some time, producing increased vascularity of the cord and probably also of the brain, with the beneficial effects ascribed alone to spinal drainage. Indeed, injection of arsphenamized serum within an hour of the intravenous injection may increase extravasation from the meningeal vessels by reason of irritation produced by the serum and arsphenamin in the subarachnoid space, in addition to the increased vascularity and transudation ascribed to reduction alone of cerebrospinal fluid pressure.

5. The patient receives the benefit of treatment with mercury and iodids and of spinal drainage conducted while under the influence of these antisyphilitic medicinals.

CONTRAINDICATION TO THE METHOD

The disadvantage of the method (encountered once in my experience) is the inadvisability of giving the intraspinal treatment in the presence of a reaction following the intravenous injection of arsphenamin. The administration of arsphenamin as described has been only exceptionally followed by a reaction of flushing and chills, and with one exception the patients have expressed a desire for the intraspinal treatment and have enjoyed a good sleep and rest, toward which a psychic element due to the realization that the ordeals were over has contributed in no slight degree.

In the one case in which a reaction following the intravenous injection of arsphenamin prevented the intraspinal treatment, a second specimen of blood was drawn later in the afternoon after the subsidence of the reaction and placed in a refrigerator over night, followed by separation of the serum next day and arsphenamizing by the addition of 0.1 c.c. of a solution of arsphenamin prepared by dissolving 0.1 gm. in 30 c.c. of 0.8 per cent. salt solution, neutralizing with a normal solution of sodium hydroxid (about 4 per cent.)² adding two or three drops more of alkali, and then salt solution to bring the total volume to exactly 33 c.c.; 0.1 c.c. of this solution added to the serum represents 0.0003 gm. of arsphenamin ($\frac{1}{3}$ mg.). After heating the arsphenamized serum at 56 C. for thirty minutes, spinal puncture, drainage and intraspinal injection were conducted as described above, and the patient was kept in bed for another twenty-four hours, which I regard as a wise precaution after intraspinal treatment or even simple spinal puncture and the removal alone of 5 c.c. or more of spinal fluid for laboratory examinations.

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2. A normal solution of sodium hydroxid, or one of approximately 4 per cent. strength, is better than a 15 per cent. solution for the purpose of preparing solutions of small amounts of arsphenamin, as 0.1 gm.

Influenza in Alaska.—The annual report of the governor of Alaska shows that thousands died in an influenza epidemic through want of care. Influenza broke out early in October in practically all the coastal towns following the lines of steamer travel. Travel to the interior was stopped and so it escaped the outbreak. It is estimated that there have been 1,500 deaths, chiefly among the natives, on the Seward Peninsula and vicinity. There were over thirty deaths among the passengers on the last trip of the steamer *Victoria*. At Kodiak and on Cook Inlet the mortality was extremely high. Whole villages of Eskimos lost their entire adult population. Many infants were frozen in their dead mothers' arms. Medical relief was given where possible; destitution was relieved, and the orphan children gathered up and placed in institutions until appropriations should become available for their permanent care. The burial of dead natives alone cost approximately \$20,000.—*U. S. Bull.*, Dec. 15, 1919.

AN ANALYSIS OF FIFTY-SIX CASES OF BREECH PRESENTATION

DESCRIPTION OF A METHOD OF DELIVERY IN WHICH
MANUAL EXTRACTION OF EXTENDED ARMS
IS RARELY NECESSARY

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These cases of breech delivery occurred at the Manhattan Maternity and Dispensary on the services of Drs. J. Clifton Edgar, Austin Flint and R. E. Brown, during my time as resident surgeon (June 3, 1915, to July 1, 1916).¹ In cases of fetal death, the necropsies were performed by Dr. L'Esperance of Cornell University.

A large number of the deliveries of the Manhattan Maternity and Dispensary are performed on the outdoor service, by interns whose service is only three months. Therefore an effort was made to find or devise a standard method of breech delivery that was as near "fool proof" as possible.

As a large part of the delay in breech delivery is due to the more or less common practice of manually going up past the head through the pelvic inlet to deliver extended arms, an attempt was made to find a method whereby this was seldom, if ever, called for. The use of the delivery described herewith has practically eliminated this necessity, except when there is a nuchal hitch.

METHOD OF DELIVERY

Until the breech delivers from the vulva, the procedure is the same as with any other breech delivery. As soon as the breech delivers, the child is covered with a warm, wet towel, and gentle traction is made downward and backward, assisted by pressure from above, until the umbilicus is delivered; then a loop of the cord is pulled down, the child is grasped about the pelvic girdle, and strong traction is made downward and backward. The bisacromial diameter of the body is kept in the anteroposterior diameter of the maternal pelvis until the anterior scapula is seen to slip under the symphysis; at this point it is very easy to deliver the anterior arm from the vagina. Now the child's body is lifted over the mother's abdomen, whereupon the posterior arm will slip out. The occiput is allowed to rotate under the symphysis, and the body to go with it. The child is placed along the right forearm, the index finger is put in the child's mouth, with the fingers of the left hand over the child's shoulders, care being taken not to fracture the clavicles, and moderate traction is made downward and backward until the mouth can be delivered by flexion upward. After the mouth is delivered, one should go slow unless there is some indication for speed.

Before the delivery is begun, the position of the child should be accurately made out so that there will be no danger of allowing the occiput to rotate posteriorly. This can be prevented by always delivering the anterior hip first and assisting the rotation of the occiput forward by rotating the body in the proper direction. In left sacral positions, the child's body should be rotated to the right and anteriorly. In right sacral positions, to the left and anteriorly.

Before any traction is made from below, an assistant makes firm pressure on the child from above; this pressure is continued until the child's mouth is delivered. It is made in such a manner that the head will remain flexed on the chest and the arms will not extend. This pressure is a very important part of the delivery.

The main points to remember are:

1. As soon as any traction is made, it should be made downward and as far backward as possible. To do this it is

1. The reason I did not complete this paper earlier is that I have been on active duty in the United States Naval Reserve Forces for two years.

always necessary to have the woman's hips on or just over the edge of the operating table, or, if done in a home, over the edge of a kitchen table. The delivery will be facilitated, especially the traction backward, if the legs of the woman are held by two assistants so that the thighs are slightly flexed on the abdomen and the legs on the thighs with the feet on a level with the buttocks, and not in the ordinary lithotomy position with the legs in stirrups. A breech delivery should never be performed in bed.

2. One should not go up after the extended arms, unless certain that there is a nuchal hitch, that is, an arm caught back of the occiput; for in all other positions the arms will squeeze through the pelvic inlet with sufficient traction from below.

3. Firm pressure should be maintained from above, applied in such a way as to keep the head flexed.

No originality is claimed for this method, but if it is used conscientiously, breech delivery will lose a great many of its terrors, and the fetal mortality will be decreased.

The method was used in nearly all of the cases here reported. Versions and multiple births are not included in this series.

The position was left sacro-anterior in thirty cases; left sacroposterior in one; right sacro-anterior in twenty-one, and right sacroposterior in four. As the majority of these patients lived in tenements, and so were not often seen early in labor, the number of sacroposterior positions reported is probably much too small.

REPORT OF STILLBIRTHS

In this series there were nine stillbirths.

CASE 1 (Breech L. S. A. 198). The fetus, born at the seventh month, was macerated and weighed 3 pounds.

Necropsy: The fetus was too decomposed for microscopic section.

CASE 2 (Breech L. S. A. 204). The mother, a quintipara, lived in a tenement house. When the intern arrived at the bedside, all the baby had been born but the head, and although this was very easily delivered it was too late, and the baby was dead.

Necropsy: The child was a large, normally developed boy. There were punctate hemorrhages in the thymus, lungs, liver and suprarenals, and fluid blood. The thymus was very large, almost double normal size. This may have been a predisposing factor in the cause of death.

Anatomic Diagnosis: Asphyxia in new-born; fluidity of blood; enlarged thymus.

CASE 3 (Breech R. S. A. 115). The fetus was a marked specimen of an encephalic monster that never breathed. The labor was very easy, lasting only one hour and fifty-five minutes.

CASE 4 (Breech L. S. A. 206). The mother was a primigravida. The membranes ruptured during the first stage. Labor lasted thirteen hours and forty minutes. The head stuck at the pelvic inlet for a full ten minutes. The heart was beating at birth, but the baby could not be resuscitated. The arms were flexed on the chest.

CASE 5 (Breech L. S. A. 209). The mother, aged 19, was a secundigravida. The membranes ruptured at the second stage of labor. The delivery was spontaneous after a labor lasting eight hours and forty-five minutes. The cord was around the baby's neck. The baby weighed 7 pounds and 8 ounces.

CASE 6 (Breech L. S. A. 211). The mother was a tertigravida. The two previous deliveries were instrumental. The baby weighed 11 pounds and 11 ounces. The patient was ten days overdue. The membranes ruptured two days before the onset of labor. Labor lasted seventeen hours and eighteen minutes. Delivery was very difficult. The arms were extended, gone up after, and manually extracted. The head was extracted with difficulty. This stillbirth was due to the excessive size of the child.

Necropsy: The baby was a very large boy with excessive development of fat and purplish discoloration of the entire skin. The liver was large and showed multiple hemorrhages. The spleen was large and congested. The suprarenals were entirely destroyed by hemorrhage, forming almost a hemorrhagic sac. The kidneys were deeply congested. The bases of both lungs showed hemorrhages. The remaining portions of the lungs showed some areas of emphysema, as if a pulmotor had been used. The thymus was large. The brain showed diffuse hemorrhage over its entire surface.

Anatomic Diagnosis: Asphyxia; overdevelopment.

CASE 7 (Breech L. S. A. 212). The mother was a quadrigavida with a generally contracted pelvis. The baby weighed 9 pounds and 11 ounces. The membranes ruptured early in the first stage. The arms were extended, gone up after, and manually extracted with great difficulty. Then the head stuck at the pelvic inlet for some time. In this case we had a large child and a small pelvis.

Necropsy: The body was that of a full term, well developed girl. The organs, especially the kidneys and the suprarenals, showed congestion. There were punctate hemorrhages in the lungs and the thymus. The heart was normal. The brain showed diffuse meningeal hemorrhages.

Anatomic Diagnosis: Cerebral hemorrhage; asphyxia.

CASE 8 (Breech L. S. A. 222). The mother had had ten previous labors. The delivery seemed very easy, but the baby could not be resuscitated. The membranes ruptured in the first stage. The labor lasted nine hours and forty minutes. The arms were extended, but caused no delay.

Necropsy: The child was a well developed girl. There were no skin lesions. The area of aeration in the lungs was small; the remaining portion was atelectatic. The bronchi were filled with thick, greenish, tenacious mucus. There were small punctate hemorrhages in the thymus. The other organs were apparently normal.

Anatomic Diagnosis: Asphyxia; mucous plugs in the bronchi.

CASE 9 (Breech L. S. A. 227). The labor occurred four weeks prematurely in a quintipara. The labor lasted four hours and fifteen minutes, and terminated spontaneously. The baby was born dead. It weighed 6 pounds and 12 ounces.

OTHER DATA

No babies that were born alive died while still under our care. There were fourteen primiparas and forty-two multiparas, the latter being thus divided: secundiparas, 9; tertiparas, 9; quadriparas, 6; quintiparas, 9; sextiparas, 2; septiparas, 2; octiparas, 2, and 1 nonipara, 1 decipara and 1 undecipara.

The ages of the mothers ranged from 18 to 44 years. The age did not seem to have any influence either on the frequency or on the ease of delivery.

The fetal heart sounds were mentioned as being heard fourteen times above the level of the umbilicus; at the level of the umbilicus, six times, and below the level of the umbilicus, twenty times. It was not heard seven times, and not mentioned nine times.

The living babies varied from 3 pounds and 8 ounces to 10 pounds. The stillborn babies' weights ranged from 3 pounds (a macerated premature baby) to 11 pounds and 11 ounces. The average weight for all cases was 7 pounds and 2 ounces; for the stillborn babies, 7 pounds and 12 ounces, and for babies born alive, 7 pounds.

No note was made of whether or not the arms were extended unless they gave trouble. They were manually extracted in two cases. (These were both described under stillbirths, Cases 6 and 7.) There is one case described in which there seems to have been a nuchal hitch:

The breech was born as usual up to the shoulders, the scapula appearing from under the symphysis before reaching for the anterior arm. This, the anterior (left), was extended

and lay behind the occiput. The posterior arm was delivered first in the usual manner, then the anterior flexed and pulled down.

The term "usual manner" means the delivery described above.

The after-coming head was mentioned as being delivered by the Smellie-Veit method in twenty-four cases. The delivery was recorded as spontaneous in twelve cases. No mention was made of the delivery of the head in twenty cases. No craniotomy was done on an after-coming head.

The forceps were never applied to either the head or the breech, although they were frequently held in readiness when we expected trouble. The only three cases in which the head stuck and forceps might have been of help occurred in tenements when forceps were not at hand. It might be a good rule always to have forceps ready before starting a breech delivery.

Chloroform was used in twenty-six cases, ether in one case. There was no anesthesia in nineteen cases. No mention was made as to any anesthesia being used in the remaining eleven cases. I myself prefer the patient well anesthetized for the actual delivery.

The longest labor in the series lasted thirty-three hours and fifteen minutes. This was in the case of a primipara, aged 23. The membranes ruptured one day before she went into labor. Finally, a breech extraction was done and she was torn through the sphincter ani. The shortest labor was two hours and fifteen minutes. This occurred in a tertipara. The baby weighed 5 pounds and 9 ounces. The average length of labor in the primigravidae was seventeen hours and four minutes. The average length of labor in the multigravidae was nine hours and eight minutes. From these figures it would seem that the length of labor was not much influenced by the presentation.

The time of rupture of membranes was: in the second stage of labor, seventeen cases; in the late first, ten cases; during the first stage, ten cases; at the onset of labor, one case, and before labor began, three cases, in one of these two days and in another one day, before labor began. The time of rupture was not mentioned in fifteen cases.

There were only two cases of definite prematurity. In both, the baby was born dead; one was macerated. One case was ten days past term. This baby was also born dead after a difficult labor.

Of lacerations of the perineum, in the primigravidae there were six first degree; two second degree, and one third degree; in the multigravidae, four first degree and one second degree. It seems to me that there were as few lacerations in this series as there would have been in a similar number of vertex deliveries, with the exception of the third degree laceration.

In these cases, deformity of the pelvis seemed to play little part, as only one woman is recorded as having any deformity, and she only a moderately generally contracted pelvis.

One baby was a monster; two had club feet; and one of these also had spina bifida. Aside from these, there were no marked abnormalities.

CONCLUSIONS

1. The most dangerous condition in breech delivery seems to be disproportion between the size of the child and the pelvis.

2. Deformities of the pelvis and child did not seem to play much part in determining the breech presentation.

3. Early rupture of the membranes is a serious happening.

4. Manual extraction of extended arms is seldom indicated. Manual extraction of the arms was used twice in this series, and in both cases the child was stillborn.

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DIGESTIBILITY OF STEAM-COOKED SOY BEANS AND PEANUTS *

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The unusual demand for foods, coupled with the high price of labor and fertilizer, makes it necessary that each acre of land devoted to food crops produce the maximum amount. From an agricultural standpoint the legumes are considered a profitable crop, since they enrich the soil with nitrogen while producing valuable food for man and beast. The legumes in general have long been important sources of food, and on account of their high protein content are sometimes referred to as the "poor man's beefsteak"; but two valuable kinds, soy beans and peanuts, have been relatively little used in this country in the human dietary.

Studies of the food value of soy beans and peanuts have supplied considerable data relative to their dietary importance. A comparison¹ of the composition of legumes in general with the composition of soy beans and peanuts shows that the latter are much richer in protein and fat, the expensive constituents of the diet, and accordingly from this standpoint are very valuable. For dietary purposes, however, the nature as well as the quantity of protein is of importance, since incomplete proteins cannot serve over long periods of time as the sole source of tissue-forming material.

Studies of the amino-acids from legume proteins made by Osborne and co-workers² and by Johns and Jones³ have shown that those from the proteins of soy beans and peanuts are in kind and proportion such as are believed to be essential to normal development. Such was not the case with the other legume proteins studied.

This belief is confirmed by biologic studies. McCollum, Simmonds, and Pitz,⁴ in discussing the effects of feeding laboratory animals on a diet rich in navy beans, say: "We feel safe in saying that this legume should under no circumstances form a principal part of any relatively monotonous diet." McCollum and Simmonds⁵ conclude that "the protein mixture from maize 80 and navy beans 20 per cent. has just about one-half the biological value for growth that the total protein mixture in milk possesses." Daniels and Nichols⁶

* Prepared under the direction of C. F. Langworthy, Chief, Office of Home Economics, Department of Agriculture, Washington D. C.

1. Bull. 28, U. S. Dept. Agr., Office Exper. Sta., 1899, pp. 65-75. Farmers' Bull. 121, U. S. Dept. Agr., 1916, p. 17. Bull. 717, U. S. Dept. Agr., 1918, p. 5.

2. Osborne, T. B., and Co-Workers: Am. J. Physiol. **18**: 307, 1907; *ibid.* **19**: 468-474, 1907; *ibid.* **22**: 368, 1908; *ibid.* **22**: 424, 1908; J. Biol. Chem. **5**: 198, 1908.

3. Johns, C. O., and Jones, D. B.: J. Biol. Chem. **28**: 77, 1916; *ibid.* **30**: 33, 1917.

4. McCollum, E. V.; Simmonds, N., and Pitz, W.: J. Biol. Chem. **29**: 521-536 (April) 1917.

5. McCollum, E. V., and Simmonds, N.: J. Biol. Chem. **32**: 33 (Oct.) 1917.

6. Daniels, A. L., and Nichols, N. B.: J. Biol. Chem. **32**: 95 (Oct) 1917.

find that "the protein of the soy bean appears to be quite as valuable as the casein of milk." Osborne and Mendel,⁷ in discussing the use of soy beans as food, state that "the proteins of the soy bean, unlike those of the other leguminous seeds thus far investigated, are adequate for promoting normal growth." Referring to reproduction of laboratory animals restricted to soy beans as a source of protein, these investigators⁸ say: "On diets containing either the soy-bean meal or the commercial soy-bean meal, together with fats and 'protein-free milk' or our 'artificial' salt mixture, several broods of vigorous young have been produced, and these young have grown normally on diets the same as those on which their parents were raised. This is a further demonstration of the nutritive efficiency of this legume, in striking contrast with the adverse results obtained with kidney beans and garden peas." Daniels and Loughlin,⁹ in discussing feeding experiments with peanuts, report: "Good growth was secured also with a ration supplying 15 per cent. protein from the peanut meal. The proteins of peanuts are comparable to those of the soy bean, since it has been shown that both legumes supply the essential amino-acids in sufficient amounts for normal growth and reproduction."

Owing to the convincing results of a large number of carefully controlled metabolism studies with laboratory animals, students of nutrition are agreed that in order to maintain the well-being of the body through the processes of growth, maintenance and reproduction it is necessary that the diet supply in addition to an adequate amount of protein, fat, carbohydrate, and mineral matter, three as yet unidentified food accessories, which have been designated fat-soluble A, water-soluble B, and water-soluble C. In a number of the studies referred to already and in reports of others,¹⁰ the value of legumes as sources of these accessories or vitamins is reported. Fat-soluble A is nearly, if not entirely, lacking in all legumes thus far reported on with the single exception of the soy bean. Water-soluble B is found in satisfactory amounts in all thus far investigated. Water-soluble C appears to be lacking in the dried seeds of all the legumes studied, but to be abundant during the sprouting state. Whenever present, it appears to lose its dietary efficiency when cooked at a temperature and under pressures such as were used in the experiments described in the present paper.

Studies of the digestibility of legume proteins have been made by Rubner,¹¹ Malfatti,¹² Prausnitz,¹³ Snyder,¹⁴ Richter,¹⁵ Woods and Mansfield,¹⁶ and Wait,¹⁷ and the general conclusion to be drawn from the experimental data obtained by these investigators is that while the legume proteins are fairly well utilized

by the human body, comparing favorably in this respect with the cereal proteins, they are not so completely utilized as the animal proteins supplied by meats, eggs and milk. Few studies have been made of the digestibility of proteins present in soy beans and peanuts. Oshima¹⁸ reports three experiments in which the average digestibility of the total protein of a diet of tofu (soy-bean curd) and rice, of which 83 per cent. was soy-bean protein, was 95 per cent. Mendel and Fine¹⁹ found the digestibility of soy-bean protein to be 85.3 per cent., as compared with 77.9 per cent. for that of the navy bean. Lyman and Bowers²⁰ have also studied the digestibility of soy-bean meal and report two digestion experiments with bread made with soy-bean meal in which the digestibility of the protein averaged 91.1 per cent. No data were found in the literature consulted regarding the digestibility of peanut protein.

During the period of unprecedented demand for foods occasioned by the recent war, it appeared to me that soy-bean and peanut press cakes could well be utilized for food purposes, especially the cakes that resulted from "cold pressing" sound soy beans and peanuts. Accordingly, experiments were conducted in the Office of Home Economics Laboratory of the Department of Agriculture to determine the digestibility of the proteins supplied by these legumes when the press-cake flours were blended with wheat flours and served in the form of an unleavened bread. Seven experiments with soy-bean flour and eleven with peanut flour showed the proteins to be 85.3 per cent. and 85.8 per cent. digested, respectively.²¹ In view of the high digestibility of soy beans and peanuts and the possibility of using these legumes as vegetables served in the same manner as navy beans and garden peas, additional tests seemed desirable, and the experiments here discussed were conducted to determine the digestibility of soy beans and peanuts when cooked under conditions approximating those employed in the preparation of commercial canned beans.

GENERAL PROCEDURE

For these experiments whole mammoth yellow soy beans grown at the government field station at Arlington, Va., were obtained from the Bureau of Plant Industry, and raw shelled peanuts were bought from a local dealer. The soy-bean and peanut experiments were carried on separately, but the general procedure was the same. The peanuts were skinned and divided into half kernels, and both beans and peanuts were thoroughly washed and placed with sufficient salt and water in a pressure cooker under 15 pounds pressure for two hours, at which time they were thoroughly cooked.

The diet, so chosen that the accessory foods should supply a limited amount of protein and at the same time be typical of a simple mixed diet, consisted of soy beans or peanuts, bread, butter, sugar, oranges, and tea or coffee. Tea and coffee were taken hot; the rest of the diet was eaten cold. The experimental periods were of three days' duration. The six subjects were men from 19 to 41 years old who had acquired considerable experience in this type of work. They were informed that a large consumption of soy beans or

7. Osborne, T. B., and Mendel, L. B.: *J. Biol. Chem.* **32**: 373 (Dec.) 1917.

8. Footnote 7, p. 375.

9. Daniels, A. L., and Loughlin, Rosemary: *J. Biol. Chem.* **33**: 296 (Feb.) 1918.

10. Memorandum on Food and Scurvy by the Food (War) Committee of the Royal Society, *Lancet* **2**: 756 (Nov. 30) 1919. Chick, H.; Hume, E. M.; Skelton, R. E., and Smith, A.: The Relative Content of Antiscorbutic Principle in Limes and Lemons, *Lancet* **2**: 735 (Nov. 30) 1918. Chick, H., and Delf, E. M.: The Antiscorbutic Value of Dry and Germinated Seeds, *Biochem. J.* **13**: 199 (July) 1919. These and other articles on vitamins are summarized by Blunt and Wang: *J. Home Econom.* **12**: 1-14 (Jan.) 1920.

11. Rubner: *Ztschr. f. Biol.* **16**: 119-128, 1880.

12. Malfatti: *Jahresb. f. Tier-Chem.* **15**: 412, 1885.

13. Prausnitz: *Ztschr. f. Biol.* **26**: 227-232, 1890.

14. Snyder: *Bull.* 74, Minnesota Sta., 1902, p. 122; *Bull.* 92, 1905, pp. 267-270.

15. Richter: *Arch. f. Hyg.* **46**: 264-273, 1890.

16. Woods and Mansfield: *Bull.* 149, U. S. Dept. Agr., Office Expt. Sta., 1904, p. 60.

17. Wait: *Bull.* 137, U. S. Dept. Agr., Office Expt. Sta., 1907, p. 55.

18. Oshima: *Bull.* 159, U. S. Dept. Agr., Office Expt. Sta., 1905, p. 224.

19. Mendel, L. B., and Fine, M. S.: *J. Biol. Chem.* **10**: 438, 447, 1912.

20. Lyman and Bowers: *Ohio J. Sc.* **18**: 279, 1918.

21. *Bull.* 717, U. S. Dept. Agr., 1918, pp. 18, 24.

peanuts was desired and that they could follow individual inclination in regard to the remainder of the diet.

A record of the weight of food consumed and the weight and chemical analysis of feces resulting from the experimental diet supplied data for calculating the coefficients of digestibility of the ration as a whole. The digestibility of the protein supplied by the soy beans or the peanuts was estimated by making correction for the undigested protein remaining from the accessory foods according to a method fully outlined in previous papers.²² It was assumed that the proteins of bread,²³ butter,²⁴ and oranges²⁵ were 88, 97 and 85 per cent., digested, respectively.

STEAM-COOKED SOY BEANS

The six digestion experiments that were conducted with soy beans were divided into two series of three tests each. The first series commenced on January 29 and the second on April 9. Uniform experimental conditions were maintained in both series, the soy beans were all from the same lot, and none of the subjects assisted in more than one experiment. The cooked beans were soft and tender, but in many the thin skin remained unbroken.

The results of these experiments are summarized in Table 1.

TABLE 1.—DIGESTION EXPERIMENTS WITH SOY BEANS
(STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration				Estimated Digestibility of Soy-Bean Protein Alone, per Cent.
		Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	
769	P. K.	78.8	88.0	97.0	62.3	74.8
772	J. C. M.	79.5	90.3	95.9	49.7	76.0
773	W. O'C.	84.5	88.8	97.9	57.5	82.7
835	J. F. C.	85.2	88.6	98.3	81.3	82.9
837	T. G. H.	80.1	84.5	96.5	74.0	80.0
838	P. A. K.	85.7	90.0	98.1	81.4	83.4
Average.....		82.3	88.4	97.3	67.7	79.9

The ration as a whole supplied 103 gm. of protein, 114 gm. of fat, 415 gm. of carbohydrate, and 3,100 calories of energy for each man daily. Its digestibility was found to be 82.3 per cent. for protein, 88.4 per cent. for fat, 97.3 per cent. for carbohydrate, and 79.9 per cent. for soy-bean protein, a value somewhat lower than the 85.3 per cent. previously reported²⁶ for protein of soy-bean flour. One subject ate an average of 478 gm. of soy beans daily for three successive days and experienced no physiologic disturbance.

STEAM-COOKED PEANUTS

Six digestion experiments were conducted with peanuts cooked as already described. The peanuts prepared in this manner were rather mealy, very palatable, and apparently thoroughly cooked; but while they still retained their original form (half kernels), the interior cellular structure was obviously somewhat altered, for the peanut kernels could be reduced to a pasty mass by very slight pressure. A summary of the results of the experiments with peanuts is given in Table 2.

Considering the diet as a whole, the subjects ingested 92 gm. of protein, 162 gm. of fat, 354 gm. of carbohydrate and 3,240 calories of energy daily; the digesti-

bility was found to be: protein, 90.7 per cent.; fat, 83 per cent.; carbohydrate, 99.0 per cent. One subject consumed an average of 457 gm. of peanuts on each of three successive days without noting any physiologic disturbance. Contrary to expectations, the digestibility of the protein of steam-cooked peanuts, 92.8 per cent., was much higher than 85.8 per cent., that previously reported²⁷ for the digestibility of the protein of peanut

TABLE 2.—DIGESTION EXPERIMENTS WITH PEANUTS
(STEAMED) IN A SIMPLE MIXED DIET

Experiment Number	Subject	Digestibility of Entire Ration				Estimated Digestibility of Peanut Protein Alone, per Cent.
		Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.	Ash, per Cent.	
854	J. F. C.	90.8	80.2	99.2	88.2	92.7
856	J. J. D.	90.0	81.1	99.2	86.9	94.0
857	T. B. H.	89.2	79.1	98.9	84.4	89.7
858	F. A. K.	93.0	90.7	98.5	90.4	95.9
859	P. K.	89.3	84.0	98.5	86.5	90.0
863	W. O'C.	92.0	83.0	99.5	83.9	94.4
Average.....		90.7	83.0	99.0	86.7	92.8

flour. No data are available for ascertaining whether the peanut flour if steam-cooked would have been equally well assimilated. These results show that steam-cooked peanuts, which furnish relatively large amounts of essential amino-acids, are of unusual value for human food.

COMPARISON OF THE DIGESTIBILITY OF SOY BEANS AND PEANUTS WHEN STEAM-COOKED AND WHEN GROUND INTO FLOUR

The results of the study of the digestibility of steam-cooked soy beans and peanuts and flours prepared from soy-bean and peanut press cakes are summarized in Table 3.

The digestibility of the protein supplied by steam-cooked soy beans is apparently less than that of the protein of soy-bean flour, owing, perhaps, to the fact that the thin unbroken skin that surrounds the cooked soy bean is impervious to the action of the digestive juices. It also may be due to difference in cooking.

The digestibility of the protein supplied by steam-cooked peanuts was found to be higher than that of

TABLE 3.—DIGESTION EXPERIMENTS WITH STEAM-COOKED SOY BEANS AND PEANUTS

Legumes	No. of Experiments	Digestibility of Entire Diet			Aver. Daily Consumption of Legume Protein, Gm.	Estimated Digestibility of Legume Protein, per Cent.
		Protein, per Cent.	Fat, per Cent.	Carbohydrate, per Cent.		
Steam-cooked soy beans.....	6	82.3	88.4	97.3	67	79.9
Steam-cooked peanuts.....	6	90.7	83.0	99.0	59	92.8
Soy-bean flour*.....	7	86.6	94.2	96.3	70	85.3
Peanut flour†.....	11	90.1	95.9	97.9	65	85.8

* Bull. 717, U. S. Dept. Agr., 1918, pp. 18 and 19.

† Bull. 717, U. S. Dept. Agr., 1918, pp. 24 and 26.

the protein of peanut flour; but since no data are available regarding steam-cooked peanut flour, it is impossible to judge whether the particular cooking process is responsible for the higher digestibility of the steam-cooked peanuts.

CONCLUSIONS

While the carbohydrate content of the diet was well utilized in each series of experiments, it was found

22. Bull. 470, U. S. Dept. Agr., 1916, p. 7. Bull. 525, 1917, p. 4. Bull. 717, 1918, p. 15.

23. An average of forty-five unreported experiments with white flour.

24. Bull. 310, U. S. Dept. Agr., 1915, p. 21.

25. Connecticut Storrs Sta. Report, 1899, p. 104.

26. Bull. 717, U. S. Dept. Agr., 1918, p. 18.

27. Bull. 717, U. S. Dept. Agr., 1918, p. 24.

that the carbohydrate of the entire diet of which steam-cooked peanuts formed a part was especially well utilized, 99 per cent. being digested.

The fact that large quantities of soy beans and peanuts were consumed daily for three successive days, without causing any physiologic disturbances, indicates that these foods cooked for two hours by steam at 15 pounds pressure are well tolerated by the human body.

The results of this investigation, considered in connection with the previously reported data regarding the nutritive and biologic values of these two legumes, gives evidence to justify the belief that soy beans and peanuts are especially valuable for human food, as compared with other legumes that have been studied with the same thoroughness.

Clinical Notes, Suggestions, and New Instruments

COMPLETE CLOSURE OF THE URINARY BLADDER AFTER COAGULATION OF TUMORS

GUSTAV KOLISCHER, M.D., AND J. S. EISENSTAEDT, M.D., CHICAGO
Attending Urologist and Associate Urologist, Respectively,
Michael Reese Hospital

It has always been a cause of regret to genito-urinary surgeons that in most operations on the bladder it is impossible to deliver a finished product on account of the necessary or supposedly necessary tubal drainage of this viscus. This was one of the more important reasons for their taking up so enthusiastically the cystoscopic endovesical methods in the treatment of bladder tumors. Endovesical treatment today includes fulguration, galvanocauterization and diathermy.

There are cases, however, in which fulguration is not advisable on account of the character of the growth, or in which even the repeated application of the galvanocautery or the diatherm through the operative cystoscope is not successful, or cases in which, on account of the location or the extent of the tumor, an endovesical intervention *a priori* could not be expected to be sufficient.

The superiority of destruction by heat of vesical tumors over the excision with the knife is becoming more and more appreciated by urologists. The problem forced itself on our surgical judgment as to how to combine the advantages of this procedure with the elimination of the disagreeable features of the postoperative vesical drainage. In this endeavor we were guided by experiences in developing a method of complete closure of the bladder which quite constantly ensures primary union, even in the presence of vesical infection.

The essential features of this method are mattress sutures of the bladder wall with inversion of the mucosa edges, which union is reenforced by whipping over a simple continuous suture, and thorough subfascial drainage accomplished by placing a narrow rubber tube under the fascia of the recti and parallel to the incision. The ends of this tube are brought out at each end of the skin wound. The bladder is opened by suprapubic cystotomy in the usual manner. The seat of the tumor is freely exposed by retractors made of fiber or hard rubber, and the coagulation is thoroughly accomplished by the galvanocautery or by diathermy. The bladder and abdominal wall are then closed completely, except for the subfascial drainage.

The patient, after operation, urinates spontaneously or is catheterized at regular intervals. A permanent catheter is not used because of the danger of urethritis, vesical irritation and ascending infection. If cystitis occasioning marked or moderate symptoms is present, 20 per cent. argyrol solution is instilled into the bladder twice a day. The subfascial drainage tube is removed after twenty-four hours. The bladder incision and abdominal wound are usually entirely healed in seven or eight days. The condition and appearance of the former site of the tumor depends on the type of the destruc-

tive agent used. An eschar produced by the galvanocautery is exfoliated in from five to eight days, while that produced by the diatherm sloughs in from ten to sixteen days.

If malignancy is suspected or proved, radium or mesothorium is inserted into the bladder cavity by means of a urethral carrier.

It seems that the advantages of this procedure over the routine method of vesical drainage are obvious. Whether this technic is applicable to extensive carcinomas involving the base of the bladder remains to be proved by further experience.

A SUBSTITUTE FOR OPEN OPERATION IN SOME IRREDUCIBLE FRACTURES

J. STANLEY WELCH, M.D., LINCOLN, NEB.

Pursuant to the surgical principle of accomplishing most in the least radical manner, we have resorted to a simple method of reduction in several cases of fracture in which open operation seemed obligatory.

The mechanism of the reduction is a lever in the form of a small, strong, steel probe acting between the displaced fragment ends and retained in situ by the plaster cast. It is resorted to under surgically aseptic conditions with anesthesia, while being observed under the fluoroscopic screen. The instrument is introduced through the iodized skin on the side of the extremity most remote from large vessels. Its end is guided by watching in both axes under the fluoroscopic screen. It is carefully placed between the fragments in such a manner as best to pry them back into apposition. Then when they are reduced, the instrument may be withdrawn; or, in the event of a recurrence of displacement, it is surrounded with a small sterile dressing and the plaster splint is immediately applied. When this is firmly set, the protruding part of the instrument is cut off with a hack saw. No infection should occur, and in from seven to ten days we remove the probe with a pair of pliers without a change of the cast unless otherwise desired. No death of bone should occur in this time with the degree of pressure here necessary.

It is an occasional experience to find, in a fracture of both bones of the forearm or leg, an irreducible condition of one or both bones. It is a frequent experience to find that, once reduced, they do not so remain. We believe this simple method will satisfactorily retain many such fractures and prevent a much more radical operation or a more cumbersome dressing in extension.

PATHOLOGIC LYING IN A CRIMINAL *

A PSYCHOPATHIC PERSONALITY

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The case here reported shows emphatically the character deviation of a pronounced and persistent fabrication, abnormal in type; this is a degenerate condition and almost invariably accompanies other forms of degeneracy, as shall be illustrated in our subject, who was likewise guilty of the most hideous crimes.

It was Delbrück¹ who definitely isolated this form of falsification, and for it he coined the term "pseudologia phantastica," a name that has since been adopted by many German writers; others have styled the disorder "mythomania."

Kraepelin² under the caption of "pathologic liars and swindlers" says: "Here we have in general to deal not only with a hyperexcitability of the imagination and defective faithfulness of the memory, but also with a certain unsteadiness in the sphere of the emotions and of the will."

Swindling has not entered into the activities of our criminal, but this may have been due to lack of opportunity—he has long been a convict.

* Read before the Philadelphia Neurological Society, Jan. 23, 1920.

1. Delbrück, A.: Die pathologische Lüge und die psychisch abnormen Schwindler, Stuttgart, 1891: p. 131.

2. Kraepelin, Emil: Psychiatrie, Leipzig, Johann Barth 2: 831, 1904.

There is a poverty in English literature on the subject, but in this country Healy³ has contributed a monograph; his studies have for the most part been juvenile cases, and he frequently found accusation accompanying this type of prevarication. In our individual, who is an adult, accusation is a rather pronounced feature.

Ely⁴ reports the case of a young woman referred by the juvenile court who it was said had always been feeble-minded. She ran away from home early in life and was grossly immoral. One of her stories was to the effect that when about 16 years old she became pregnant with an illegitimate child; her confinement was recounted most vividly, together with her subsequent love for the child. There was no physical evidence that she had ever been pregnant, and it was regarded as one of her many inventions.

The life history of our criminal reveals an astonishing amount of character deviation. In addition to the abnormal fabrication, there were two attempts at homicide, one successful; three attempts at suicide; probably rape, and possibly simulation of insanity. Since real names are inadvisable, those given are fictitious.

Francis, the prisoner, is 42 years of age and was born in Lithuania. He said his mother's husband was a builder of church organs whose work kept him much from home, and, during one of these absences, she became pregnant with this son; but this statement, which blackens his mother's character and stamps him with illegitimacy, is not above question.

After passing through the Russian gymnasium he began work as a telegraph operator, but his restless nature tired and he entered a military academy; on leaving there, he enlisted in the Russian guard, and it was during this service that he became infatuated with a Lithuanian girl called Marie, which was the determining cause of his blighted career, since it led to her death and his life imprisonment.

A difference in religion had led the father of this girl to forbid Francis' attention to her. However, absenting himself from the army without leave, he called at her home, but the father ordered him away. In a frenzied moment he pulled an ornamental hatchet from the wall and hit Marie in the head; she was not badly injured and recovered. He then cut his own throat, and after being taken to the hospital made a determined effort to tear open the wound. When sufficiently improved, he was tried for attempt to kill, attempt to commit suicide, and for desertion from the army. He was sentenced to imprisonment. With the birth of the czar's son and the granting of amnesty, Francis was placed on parole. In an effort to escape him, Marie came to America; but he violated his parole and followed. Arriving in Philadelphia in March, 1907, he located her. Marie, after considerable persuasion, was induced to come to his room, where, as she subsequently charged, he ravished her. He countered with the charge of theft—that she had stolen his pocketbook. This he told me was a lie and that he had invented the story for revenge. From his knowledge of sexual matters, Francis also challenged her virginity. He was arrested and placed in Moyamensing prison. Subsequently, the affair was quashed by his agreeing never again to attempt to see her. On release, he failed in his promise and endeavored to get her consent to matrimony; she positively refused whereupon, he became desperate and determined to kill her. The act was consummated in April, 1907. Marie was shot four times, and he then shot himself. Both were taken to the Pennsylvania Hospital. Marie died on the way. He lay unconscious for four days, and when sufficiently recovered, was again placed in Moyamensing.

The complicated mental picture then presented led to one of the most remarkable medicolegal cases of our courts. The prisoner has told me that he was not insane at the time but had been advised to "play crazy," and that he acted the part. The verdict was "guilty of murder in the first degree but now a lunatic." He was ordered to Norristown State Hospital and detained for one year, after which, he was returned to Moyamensing.

Technical difficulties then led to his appearance before different courts, until finally a jury rendered a verdict of first degree murder. The case was appealed, but the decision was sustained. Five different times the day for execution was set. Finally, on request, a member of the state committee of lunacy reviewed his mental history, examined him, and reported to the governor. After careful consideration, this able report recommended the extension of clemency, with the result that the death sentence was commuted to life imprisonment, and he was ordered to the Eastern State Penitentiary.

Now as to his fabrications: All who come in contact with Francis aver that he is a stupendous liar; but his most astonishing invention was while in Moyamensing. It related to another atrocious murder in which the prisoner said he was implicated, and which he attempted to tell a priest; the latter refused to confess him until the authorities had been apprised of his crime. This he acceded to by describing the murder of a man named Galwitz by another named Zellner. The prisoner stated he had witnessed this murder and stood by while a 5-foot grave was dug and the body placed therein. The cause of this crime was jealousy; both men had been intimate with the girl Marie, and this led one to kill the other. A detective was detailed to investigate the case, and the spot was located; but the presence of water rendered it a physical impossibility to dig a grave there. The whole matter proved to be a fabrication, and the case was dropped in the belief that the prisoner was simply "exercising his imagination." The man still recalls the circumstance and regards it a good joke.

Physical examination discloses no positive anatomic stigmas. In fact, judging from nature's evidence, the prisoner measures up well. In appearance he is tall, erect and finely proportioned; his head is well shaped and his countenance is rather inviting; he is polite, quick-witted, of the utmost assurance, an incessant talker, and with a great deal of general but superficial knowledge which he uses with considerable linguistic ability. In his personal habits he is clean, industrious and methodical, attributes which are noticeably rare with the criminal class.

The only neurologic finding is a slight motor paralysis caused by severance of the temporal branch of the temporo-facial division of the right facial nerve which resulted from his attempt at suicide in 1907. A roentgenogram reveals the presence of a foreign body in the left temporal region of the brain, probably inoffensive, despite the prisoner's statement that he cannot lie on his left side; cell-mates have told me that he lies equally well on either side; or, as an Irish prisoner expressed it, "the man lied on all sides."

Francis is suspicious, and is constantly making accusations against overseers and cell-mates; this has led to his being tried in many parts of the prison, but the trouble continues. Those in charge soon learn to give as little heed as possible to his many inventions. The notes of one overseer show his impression; he wrote: "This prisoner is an awful liar; . . . said he saw two convicts trying to cut through their door; . . . said another prisoner was going to stab him with a pair of shears; . . . he is a professional at lying and I have seen many bad prisoners but never one like this man." A frequent charge made by Francis had been that cell-mates have secreted in their cells substances that are contraband, such as coffee, cocoa, sugar and money.

Once, with grave concern, the convict reported that he saw another inmates hide tools in the sewer preparatory to an attempt at escape; on investigation, it was found that the cover of the sewer, which the prisoner said he had seen removed, was securely cemented and had been so for years; it was but another myth.

At a former examination he stated that he had knowledge of seven languages—Russian, Lithuanian, Polish, Finnish, German, French and English. When shown French he failed to recognize it, and when told to write that language he wrote what appeared to be some Slavish dialect, which he explained was called French where he had studied.

If questioned concerning his fabrications, he attempts to pass the subject off lightly; but when pressed for an explanation he has said: "I was bluffing"; that "others have lied to

3. Healy, William: *Pathological Lying, Accusation and Swindling*: Boston, Little, Brown & Co., 1915, p. 1.

4. Ely, Frank: *The Pathological Liar*, *Proceedings of Alienists and Neurologists of America*, Chicago, 1917, p. 128.

me first"; that "often I have lied to defend or to protect myself, which I considered a justifiable fraud"; and that "sometimes I have lied to develop a situation about which I was suspicious."

The prison classification of this man is a criminal of the homicidal type. The further mental classification is psychopathic personality. Outstanding features are: emotional instability; abnormal sexuality; pathologic lying; possibly, still suicidal. Neurologic findings are: paralysis of part of the right facial nerve; bullet in the left temporal lobe of the brain, probably nonsymptomatic.

2117 Chestnut Street.

A CASE OF INCARCERATED HERNIA INTO THE UMBILICAL CORD

WILLIAM J. STANTON, M.D., WASHINGTON, D. C.

M. T. H., a girl baby, born, Dec. 22, 1919, and weighing 8 pounds, presented a large tumor mass about the size of a fist, within the umbilical cord. Transillumination revealed coils of intestine. A diagnosis of hernia into the umbilical cord was made, and immediate operation was advised. This was at first refused, but next day the parents consented, and the baby was sent to Georgetown University Hospital, where I operated, just twenty-four hours after I had delivered her. Dr. Thomas F. Lowe administered the anesthetic.

The wall of the sac consisted of amnion and peritoneum. The sac contained about 2 feet of large and small intestine. The appendix, though present, was not removed. The intestine was adherent over about half the surface of the sac. The intestine was beginning to show a dark reddish discoloration.

An incision of the umbilical ring and abdominal wall above the cord was made. The intestine was replaced and the wound closed with three silkworm-gut inverted mattress sutures. The baby suffered little if any shock, and made an uneventful recovery. The after-treatment consisted in a regular four-hour nursing schedule. The baby was returned to her mother the same night.

3323 O Street N.W.

THE EFFECT OF WEAK ACETIC ACID ON SPIROCHAETA PALLIDA

PRELIMINARY COMMUNICATION

HERMAN GOODMAN, B.S., M.D., NEW YORK

I wish at this time to give the clinical and experimental evidence as to the effect of weak acetic acid on *Spirochaeta pallida*, in order that corroborative work may be carried on.

It is generally admitted that syphilitic chancres of the vagina are less frequent than chancres of the neighboring parts. Most textbooks make the statement, and the figures are easily available. It is also generally admitted that the secretion of the vagina of the adult woman is acid. The secretion of the adjacent parts is alkaline in reaction. Certainly the vagina is equally subject to trauma and to the deposition of *Spirochaeta pallida*, as the cervix uteri or the labia, the usual sites of chancre on the female genitals.

In the few reports of chancres of the vagina which give the exact location of the initial lesion, it is most often in the posterior culdesac. The alkaline cervix uteri secretion which may collect here is the factor in the neutralization of the protective acid vaginal secretion.

The immunity that the vagina apparently has for syphilitic manifestations has been commented on in the past, as has its comparative immunity to chancroids and to the gonococcus.

With the object of determining the action of weak acetic acid on *Spirochaeta pallida* prior to using this solution to hemolyze blood in attempting to recover *Spirochaeta pallida* in samples of circulating blood, I noted the following: As opportunities presented themselves, spirochetes were sought for under the dark field. When found, acetic

acid prepared from chemically pure glacial acetic acid diluted to 2, 1 and 0.5 per cent. with distilled water was run under the cover glass of different preparations of fresh spirochetes. Currents were of course set up, which caused a general movement of the material under observation. However, as soon as I could recognize objects again (within fifteen seconds), it appeared that the spirochetes were much changed. They had lost the regularity of coil, they were no longer straight, they were immotile, and they were carried passively on the currents. The effect was much like that described by Reasoner¹ for soap solution.

It may be noted that the mediums for the growth of spirochetes must be alkaline.

I was led to believe that *Spirochaeta pallida* is unable to live in an acid environment even as low as 0.5 per cent. acetic acid. It would appear, then, that an acid solution, such as weak acetic acid, may be of use in the prophylaxis of syphilis. The advantages of a nonpoisonous, liquid, easily procurable and adaptable local spirocheticide should warrant a serious study. It is proposed to carry on this investigation with animal inoculation, and also to determine whether acetic acid penetrates farther into tissues such as the skin or mucous membranes than solutions of other known local spirocheticides.²

Therapeutics

A DEPARTMENT DEVOTED TO THE IMPROVEMENT OF THERAPY.
A FORUM FOR THE DISCUSSION OF THE USE OF DRUGS
AND OTHER REMEDIES IN THE TREATMENT OF DISEASE.

LAXATIVE FRUIT CAKE

DR. EDWARD J. ROGERS, Pittsford, Vt., writes: "In your issue of Dec. 27, 1919, p. 1938, you speak of 'senna leaves, figs, dates, prunes, raisins—of each, equal parts.' Does this mean by weight or measure?"

COMMENT.—Since the dose of this "laxative fruit cake" is a slice, large or small, according to the requirements of the individual, exact proportioning of ingredients is not essential. Either weight or measure might be used; the former, being more accurate, would be preferred.

1. Reasoner, M. A.: The Effect of Soap on Treponema Pallidum, J. A. M. A. 68:973 (March 31) 1917.

2. In addition to the reference already given, the following references will be found of interest:

Barbani: L'immunità della vagina per la affezioni veneree e sifilitiche, Milan, 1900.

Belloir: Contribution a l'étude clinique de la syphilis vaginale, Paris, 1890.

Comandon: De l'usage de l'ultra microscope pour la recherche et l'étude des spirochetes, Paris, 1909.

Joseph: Lehrbuch der Haut und Geschlechtskrankheiten, Leipzig, 1905, p. 15.

Meningitic Form of Acute Poliomyelitis.—Every doctor realizes that the great fear at the back of his mind is tubercular meningitis. No disease is so deceptive, and the clinician has hardly a sure test by which he can guide his diagnosis, because the onset, though gradual, as a rule, may be as abrupt as in cerebrospinal meningitis, and any of the cardinal signs may be in abeyance. Examination of the cerebrospinal fluid may settle the diagnosis, but even this, in the absence of tubercle bacilli, may not be conclusive, because in this form of poliomyelitis the character of the fluid varies considerably. When taken early there is, as a rule, an increased cell count with a low globulin content, and the cell increase is in the lymphocytes and large mononuclear cells. In some cases, however, the polynuclear cells predominate. The absence of tubercle bacilli, of meningococci and other bacteria, will certainly suggest the possibility of poliomyelitis, and then the clinical signs will probably lead to the right conclusion.—*Clinical Journal*, December, 1919.

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SATURDAY, MARCH 20, 1920

NUTRITIVE REQUIREMENTS BASED ON ACCURATE STATISTICAL EVIDENCE

Few questions relating to nutrition and the bearing of the diet on human well-being have aroused more discussion in the last few years than has the subject of the protein requirement of man. Extremes of opinion have been advocated with much vigor. The assumed menace of a diet rich in protein has been pictured in the form of various nutritive dangers, such as the ills of the indefinable "autointoxication," the hypothetical "kidney overwork," arteriosclerosis and arterial hypertension developed by a surplus of nitrogenous waste products, and other equally indefinite factors. Instances of alleged benefit from reduction in the protein intake are often cited to substantiate the statements. Somewhat less aggressive, though by no means wanting in enthusiasm, are the counter claims of those who believe that the welfare of the race is bound up with liberality in the protein factor. Pointing to the parallel occurrence of low protein dietaries and undersized races, the advocates of abundant nitrogenous intake look on protein as a veritable stimulus to growth, vigor and even happiness. "Underfeeding produces gloom and moroseness unless other circumstances are more influential and oppose it." Such are some of the dicta of the opposing extremists.

The medical man is, or ought to be, sufficiently familiar with human psychology to appreciate the element of bias in many of the propagandas relating to health. At one time, not many months ago, the experience of the Germans with the enforced low-protein dietary of war time was proclaimed as clear cut evidence of the safety and, in cases, even the benefit of such a regimen. Later, when disease undoubtedly attributable to improper nutrition began to make its appearance in many places, the interpretations began to swing in a different direction with respect to the need of protein. The blame for many of the ills was now laid at the door of the inadequate supply of this foodstuff. As a matter of fact, so many variables are concerned in the malnutrition of central Europe—the inadequate calorific intake, the inappropriate and extremely limited variety of food, with a consequent

reduction of quantity and defect of quality, including perhaps vitamin and mineral nutrients as well as the energy-yielding foods—that a rational interpretation of the causes is by no means easy in all cases. Otherwise the diversity of phenomena represented by beriberi, rickets, scurvy, war edema and pellagra might readily be ascribed to a single cause, such as low protein or inadequate calories.

There is something singularly satisfying in evidence that is essentially objective in character and does not require the consideration of the psychologic or human factor of interpretation. For this reason, well controlled experimental data from intelligently conceived investigations are always welcomed in the study of nutrition. In connection with the protein requirement of man, Sherman¹ of Columbia University has completed the desirable task of compiling the dependable statistics of the observations in which the protein intake appears to have been barely sufficient or not quite sufficient to result in equilibrium of intake and output, provided the total diet was adequate. Such figures must approximate the minimum requirement. This will, of course, necessarily vary with the character of the diet and certain other factors; but, on the whole, variations due to these must be offset to a considerable degree when the number of observations is large. Sixty-seven experiments on men show an average "indicated protein requirement" of 0.633 gm. per kilogram, while the forty-two experiments with women average 0.637 gm. per kilogram of body weight. It seems unnecessary, therefore, to distinguish between the sexes in this discussion since we are dealing with data calculated to a uniform basis of body weight. The general average of the 109 experiments shows an indicated requirement of 0.635 gm. of protein per kilogram of body weight, or 44.4 gm. for the "average man" of 70 kg., daily.

Such conclusions drawn from an unusually large number of observations, in which the personal equation of interpretation has been minimized, must not be regarded as representing the index for optimal protein intake; on the contrary, they must be looked on as the rock bottom or irreducible minimum in all considerations of adequate rationing, particularly when large groups of persons are to be provided for.

A similar survey made by Sherman² with respect to the phosphorus requirement of man deserves notice in this connection. The data from ninety-five experiments range from a minimum of 0.52 to a maximum of 1.20 gm., with an average of 0.88 gm. of phosphorus per 70 kg. of body weight daily. The experiments on men average 0.87 gm., and those on women average 0.89 gm. per 70 kg. daily. Sherman believes that we are probably justified in concluding that we now know

1. Sherman, H. C.: Protein Requirement of Maintenance in Man and the Nutritive Efficiency of Bread Protein, *J. Biol. Chem.* **41**: 97 (Jan.) 1920.

2. Sherman, H. C.: Phosphorus Requirement of Maintenance in Man, *J. Biol. Chem.* **41**: 173 (Feb.) 1920.

the phosphorus requirement with about the same probable accuracy that the protein requirement is known, and that about one-fortieth to one-fiftieth as much phosphorus (reckoned as element) as of protein is required in the maintenance metabolism of man. Such investigations of the dietaries of typical American households indicate that with few exceptions they appear to provide a somewhat more liberal margin of protein than of phosphorus. Nevertheless, the minimum requirement of the latter is apparently rarely approached. At any rate, as the conventional diet supplies phosphorus in forms entirely suitable for utilization by man, there is no ground for any commercial exploitation of unique types of phosphorus compounds that exhibit little advantage other than that of a large monetary return to a persistent promoter.

THE PHYSIOLOGIC SIGNIFICANCE OF A RECORD AEROPLANE FLIGHT

A few days ago an aeroplane carrying Major R. W. Schroeder of the American army aviation service reached an altitude of 36,020 feet, about 5,000 feet higher than the previous world's record for such a mode of flight. Only a few years ago this marvelous performance would have been rated as virtually impossible because of the limitations of the human organism at great heights. In the oft quoted balloon ascension of the meteorologist Glaisher, in 1862, an altitude of about 30,000 feet was reached. When the balloonist attained a height of 26,000 feet, he first noticed that he could not read his instruments properly. Shortly after this his legs became paralyzed, and then his arms, though he could still move his head. Then his sight failed entirely, afterward his hearing, and he became unconscious. Glaisher's companion, Coxwell, likewise incapacitated in the upper air, managed to open a valve which permitted the balloon to descend, and thus saved the lives of the men. Another historic instance of a record balloon ascension concerns the experience of Tissandier, the sole survivor of a party of three in the fatal trip of 1875. The balloon ascended 28,820 feet, but all the occupants of the car began to suffer before an altitude of 23,000 feet was reached, and two of them died.

The baneful effects on life in the rarefied air of higher altitudes usually makes itself manifest at a barometric pressure considerably lower than that represented in the classic instances just cited. In a review of the medical aspects of aviation, the experts of the Medical Research Laboratory of the Division of Military Aeronautics¹ assert that mountain sickness befalls some persons at a lower, others at a higher altitude; but it is also certain that no one who proceeds beyond a certain elevation—the critical line for him—escapes the malady. An elevation of 10,000 feet or even less

might provoke it in some; others may escape the symptoms up to 14,000 feet, while only a very few, possessed of unusual resisting power, can without much distress venture upward to 19,000 feet. We are further reminded that the symptoms of mountain sickness depend not only on the nature of the individual and his physical condition, but also on various intricate contingencies, especially on the amount of physical exertion made in ascending; that is, on whether the ascent is performed by climbing or by passive carriage on horse, on railway train, or in an aeroplane.

What has made possible the penetration of the higher reaches of the atmosphere in these newer flights of man, including Rohlf's ascent to 31,000 feet and Casale's unofficial record of 33,000 feet last year, and culminating in the splendid achievement of Schroeder in rising nearly seven miles above the earth? It has been the scientific demonstration that the predominant physiologic upset at high altitudes, whether it be exhibited as mountain sickness (*mal des montagnes*) or aviator's disease (*mal des aviateurs*) is primarily due to the deprivation of oxygen in the rarefied air. As long ago as 1878 the eminent French physiologist Paul Bert furnished clear experimental proof that the abnormal symptoms and dangers experienced under conditions of lowered barometric pressure are those of want of oxygen. Despite the various attempts to invoke other factors, the accumulated scientific evidence today supports Bert's conclusion that the essential cause of altitude sickness is lack of oxygen. Consequently, he who would attempt the conquest of the air several miles above the earth must be supplied with oxygen in sufficient abundance.

The adaptation of man to life at altitudes has occasionally been discussed in *THE JOURNAL*.² Important as they undoubtedly are for the mountaineer and, latterly, for the aviator under ordinary circumstances of flying, these adaptive responses cannot satisfy the needs of the organism in those record flights represented by Schroeder's attainment. Accordingly, it is significant that his failure to ascend even higher in the world's record flight was due, according to the press dispatches, to the exhaustion of the aviator's oxygen tanks which supplied the needed respiratory gas. It is this failure, we may assume, in the absence of official information, which robbed him of consciousness and thus was responsible for the spectacular fall of several thousand feet which almost cost Schroeder his life.

The glowing accounts of the new conquest of the upper air have been replete with praises of the superior motors, the dependable air compressors, the unique recording instruments, the heating devices that made it possible for man to endure a polar climate of 67 degrees below zero, and other mechanical features. It is more than likely that the record will again be broken;

1. Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, 1918, p. 3.

2. A New Record for Altitude, editorial, J. A. M. A. 72: 496 (Feb. 15) 1919; The Medical Manual of the Air Service, *ibid.* 72: 1363 (May 10) 1919; Deaths Incident to Aviation, *ibid.* 73: 1444 (Nov. 8) 1919.

not, however, merely because these devices have been made more perfect and efficient, but also because science will have taught the aviator how to secure an unfailing supply of the indispensable oxygen. After the enforced consideration during the last few years of the abomination of noxious gases, it is a relief to return to the consideration of one that is truly beneficent.

APPLICATIONS OF CLINICAL CALORIMETRY

Several years ago (May, 1915), the *Archives of Internal Medicine* devoted a supplementary number solely to the presentation of pioneer results obtained by the method of clinical calorimetry. To some the subject seemed at that time to be far removed from any immediate application to the problems of medical practice. The technic of the investigations involved highly specialized training; the language in which some of the results were expressed had a novel and unfamiliar ring; and "basal metabolism" seemed at most a topic for the consideration of the trained physiologist and the pathologist.

In the few intervening years, the technic and the necessary apparatus for estimating the energy exchange in human subjects have been simplified so that they are no longer beyond the capacities of intelligent clinicians. To the uninitiated the methods sound more complex than they really are. They are not among the easiest of routine diagnostic procedures; neither is good surgery the work of a tyro; yet we do not relegate it to some superhuman person.

Recently the clinical importance of an estimation of basal metabolism in thyroid disease as an index of the toxicity factor has repeatedly been emphasized.¹ As McCaskey has pointed out, the differential diagnosis of many mild, atypical or very early cases of thyrotoxicosis by means of the ordinary clinical signs and symptoms can be made with only a varying degree of probability. The estimation of the basal metabolism furnishes the requisite objective data which verify a diagnosis and enable one to gage the value of therapeutic efforts. An excellent illustration is afforded by the studies of the basal metabolism in exophthalmic goiter which were started by Means and Aub² at the Massachusetts General Hospital nearly five years ago. It has been possible to contrast the more permanent effects of a variety of modes of treatment in a disease characterized by a high metabolism rate. Judging by this index of toxicity, it now appears that in the majority of cases the results after two or three years are equally as good with roentgen-ray treatment as

with surgery. In securing the same end-results with surgery or with the roentgen ray, a lesser rest factor is necessary with the roentgen ray. With the roentgen ray there is practically no mortality. With surgery there is a definite one. Patients treated surgically do better, and the risk of operation is less, if they have previously had their thyroid and thymus glands irradiated. The risk of operation is greater and the need for preoperative roentgen-ray treatment is greater in cases with a very high metabolism and moderate tachycardia and moderate metabolism elevation.

From their studies with the aid of the respiration calorimeter, Means and Aub believe that the safest program for the treatment of exophthalmic goiter, as a whole, is the routine irradiation of thyroid and thymus glands, in all cases, with surgery held in reserve for patients who do not then do well. The Boston diagnosticians conclude that surgery is contraindicated with patients whose metabolism is rising in spite of complete rest in bed, and also patients of the type with moderate tachycardia and great metabolism increase, except when they have previously had the thyroid and thymus glands treated with the roentgen ray. If one is justified in asserting today that "in the management of exophthalmic goiter, periodic determination of the basal metabolism should be quite as much a routine as is the examination of the urine for sugar in diabetes mellitus," it must be admitted that clinical calorimetry has won a place for itself within an unexpectedly short period.

THE PATHS BY WHICH TETANUS TOXIN AND ANTITOXIN ARE SPREAD IN THE BODY

It has long been recognized that tetanus poison has a special affinity for the nervous system. More than twenty-five years ago, Bruschettini¹ demonstrated that the toxin might be found in the nerves but not in the adjacent muscles and other tissues surrounding the point of subcutaneous injection. It is to Meyer and Ransome,² however, that medical science owes the complete proof that the tetanus poison is absorbed from the blood and tissues by the peripheral nerves and transported centrad along their paths. For example, when tetanus toxin is injected into the thigh muscles of an experimental animal, the poison is found at first only in the sciatic nerve of the same side and in the blood.

The process by which this transport of the tetanus toxins occurs has been widely discussed. For some time it was believed that the lipoids, which are conspicuously abundant in nervous tissues, are responsible for the selective transfer of the toxin. These com-

1. Means, J. H.: Studies of the Basal Metabolism in Disease, Boston M. & S. J. **174**: 864 (June 15) 1916. Means, J. H., and Aub, J. C.: A Study of Exophthalmic Goiter from the Point of View of the Basal Metabolism, J. A. M. A. **69**: 33 (July 7) 1917. Boothby, W. M.: Clinical Value of Metabolic Studies in Thyroid Cases, Boston M. & S. J. **175**: 564 (Oct. 19) 1916. McCaskey, G. W.: The Basal Metabolism and Hyperglycemic Tests of Hyperthyroidism, with Special Reference to Mild and Latent Cases, J. A. M. A. **73**: 243 (July 26) 1919.

2. Means, J. H., and Aub, J. C.: The Basal Metabolism in Exophthalmic Goiter, Arch. Int. Med. **24**: 645 (Dec.) 1919

1. Bruschettini: Riforma med., 1892, referred to by Zinsser, Hans: Infection and Resistance, New York, the Macmillan Company, 1914, p. 41.

2. Meyer and Ransome: Arch. f. exper. Path. u. Pharmacol. **49**: 367, 1903.

pounds, like the fats, are known to have a specially marked solubility for certain types of compounds, notably some of the narcotic drugs. It was not unnatural, therefore, to assume some sort of chemical or physical affinity between the toxin and the lipoids of the nervous structures. The problems here at issue have more than merely academic interest, for the possibility of successful therapy largely depends on the solubility and mode of distribution of toxin and antitoxin in the tissues and fluids of the body. No amount of antitoxic substance, however large, and however potent it may be in vitro, will be effective if it cannot reach the *materies morbi* in the body itself. Obviously, if the nerves themselves offer a better point of therapeutic attack, antiserum might be injected more directly in the vicinity of the poison to be neutralized.

In the classic investigations on the action of tetanus toxin, it was found that when a nerve is cut, poison absorption ceases as soon as axis cylinder degeneration has set in. Meyer and Ransome concluded that tetanus toxin reaches the central nervous system solely by way of the axis cylinder of the motor nerves. Marie and Morax³ had come to a similar conclusion. A reinvestigation of the problem at University College Hospital Medical School in London by Teale and Embleton⁴ has emphasized the possible cooperation of other factors in the distribution of tetanus toxin. Their experiments show that although the poison ascends to the central nervous system by way of the axis cylinders of the nerves, it also to a great extent passes up the nerves to the cord by way of the perineural lymphatics. Blocking the latter paths greatly delays, and in some cases completely prevents, the occurrence of tetanus in the part corresponding to the nerve for which the lymph path has been blocked. Although tetanus toxin passes rapidly from the blood vessels into the connective tissue spaces and thence to the thoracic duct, the toxin does not pass from the capillaries of the central nervous system to its tissues.

The British investigators feel justified, further, in concluding that tetanus antitoxin is not carried in any degree to the cord either by the axis cylinders or by the neural lymphatics when inoculated directly into the nerve, but that its sole action when thus introduced appears to be the local neutralization of the toxin coming up the neural lymphatic sheaths. According to Teale and Embleton, this appears to be further evidence that tetanus toxin travels in the neural lymphatic sheaths; hence they conclude that antitoxin acts on the toxin in the circulation and tissues, and prevents its spread from there into the nerves and central nervous system, and that it has no effect on the toxin already traveling along the nerve or present in the central nervous system.

3. Marie and Morax: Ann. de l'Inst. Pasteur **16**: 818, 1902.

4. Teale, F. H., and Embleton, D.: Studies in Infection, II, The Paths of Spread of Bacterial Exotoxins with Special Reference to Tetanus Toxin, J. Path. & Bacteriol. **23**: 50 (Oct.) 1919.

Current Comment

THE NEW ORLEANS SESSION

The American Medical Association will hold its seventy-first annual session in New Orleans, April 26 to 30. A description of the features of the session and the preliminary programs appear in this issue. This is the fourth time the Association has convened in New Orleans. The twentieth annual session under the presidency of Dr. William Owen Baldwin in 1869 aided much in bringing the members of the medical profession in the South into cordial relationship with the national association following the Civil War. Then, in 1885, under the presidency of Dr. Henry F. Campbell, the thirty-sixth annual session was held in the Crescent City. In 1903, for the third time the Association met in New Orleans in its fifty-fourth annual session under the presidency of Dr. Frank Billings. Now we are to enjoy New Orleans hospitality for the fourth time; on this occasion the session will be opened under the presidency of Dr. Alexander Lambert of New York, and Dr. William C. Braisted, Surgeon-General of the U. S. Navy, will be inducted into the office of President. The physicians of New Orleans propose to maintain the reputation of their city for hospitality. They are resolved that the Fellows of the Association who attend the coming annual session will not only enjoy the program of the Scientific Assembly, but will also find every moment intervening between the scientific meetings fully occupied with social features which shall mark this annual session as providing an all-around good time socially. While the hotels of themselves may not be able to accommodate all those who will be in New Orleans, the Local Committee on Arrangements has undertaken and is accomplishing the Herculean task of assuring every visitor comfortable lodgings during the time of the meeting. Not only has there been provided a list of approved boarding houses, but the physicians themselves as well as other citizens of New Orleans, are opening their homes for the accommodation of the visiting profession. New Orleans is proud of the hospitality it extends to visitors who attend the Mardi Gras, and a like welcome awaits every one at the coming session of the Association.

THE SANITARY CONSCIENCE

In that superb series of essays which was to honor Osler in the life, but which his eyes never beheld and which is now lamentably enough a memorial to the great physician, Sir Auckland Geddes, the new ambassador of Great Britain to the United States, deploras that physicians in general lack the spirit of citizenship: They are unwilling, he says, to share governmental burdens; they feel but little of that mass emotion which is concerned for physical and mental development, for closer human relationship, and which is finding expression "in centers for child welfare, in schemes for housing the working classes, in the establishment of ministries of health, in reconstruction and research work, in the growth of the labor party, in the spread of socialism and, incongruous though it may seem, in

bolshevism and in the great ideal struggle to express itself through the League of Nations." With "brilliant exceptions," the medical profession, Geddes considers, is made up of men whose citizenship, such as it is, "is as divorced from their technical knowledge as is that of the speculator when he jerry-builds new slums."¹ Surely there is here no stricture as to the medical profession in the United States, which, in the last decade at least, has shown itself so zealous in the communal interest. Consider a few data in point: The medical profession several years ago sought most earnestly and with no selfish motive for the establishment of a national department of public health, with representation in the President's cabinet. This movement, promising so much nationwide beneficence, was frustrated through the efforts of agencies which can hardly be said to have been saturated with zeal for the welfare of our people. Also, there is even the insistence, by the informed physician, on the fact that tuberculosis is far from being only a doctor's affair, but that it is probably the most degenerating social and economic factor in civilization. Many, no doubt most medical societies, have their public health sections or committees in which the application of twentieth century preventive measures to the correction of untoward communal conditions has been thoroughly promulgated, in which factory insanitation, woman and child labor, impure air and water, and a thousand and one other aspects of general unhealthfulness are exhaustively considered. There does, indeed, appear to be in our body politic some indication of an upsurging "mass emotion" making for human physical and mental betterment. Rosenau of Harvard has better characterized this salutary and promising emotion as an awakening sanitary conscience among our people. "The modern science of preventive medicine," he has said, "teaches the lesson of the unselfishness of community interest and has been a potent biological factor underlying the present trend toward socialism." Such teaching, by physicians interested in the larger aspects of medical science, is now in the way of bearing fruit.

1. Geddes, Sir Auckland: Social Reconstruction and the Medical Profession, Contributions to Medical and Biological Research, Dedicated to Sir William Osler, in Honor of His Seventieth Birthday, by His Pupils and Co-Workers, July 12, 1919, p. 70.

Child Labor and the War.—The seventh annual report of the chief of the Children's Bureau of the U. S. Department of Labor points out that the federal child labor law which had gone into effect, Sept. 1, 1917, prohibited the employment of children under 16 years of age in mines and quarries and of children under 14 years of age in factories; limited the working day to eight hours for children under 16 years of age employed in factories, and prohibited work for them between 6 p. m. and 7 a. m. But this law was declared unconstitutional by the supreme court, June 3, 1918. The immediate effect of the supreme court decision in states where the state child labor standards were lower than those imposed by the federal law was the prompt restoration of the longer working day for children under 16 and an increase in the number of working children. In a number of states there was an appreciable increase in the violation of state laws. It was in recognition of the seriousness of this increasing employment of young children that the war labor policies board voted that compliance with the standards of the former federal child labor law should be required of establishments engaged on government war contracts made after the date of the decision.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

DISTRICT OF COLUMBIA

Personal.—Dr. Marcus W. Lyon, Jr., has taken charge of the pathologic work at South Bend, Ind.

Bill on Chiropractic.—There has been introduced by Congressman Esch a bill regulating the practice of chiropractic in the District of Columbia. This measure is similar to the one recently introduced relative to the practice of osteopathy in the district. It provides for the organization of a chiropractic examination and registration board; that applicants for chiropractic licenses shall be graduates of reputable schools of chiropractic, that the applicants will be required to give a demonstration of vertebral palpation, nerve tracing and adjusting, and such other subjects as the board may prescribe. A fee of \$25 is required of all applicants seeking licenses. A renewal fee of \$5 each year is required.

FLORIDA

Kansas City Physician in Florida.—Dr. Richard L. Sutton, Kansas City, Mo., was the guest of Dade County Medical Society at Miami, February 25, and delivered an address on "Cancer of the Skin," illustrated by lantern slides.

Personal.—Dr. John Keeley, health officer of the East Coast Congressional District, has resigned.—Dr. Daniel C. Campbell, Jacksonville, has been appointed head of the bureau of venereal diseases, succeeding Dr. Lorin A. Greene, Gainesville, resigned.

Public Health Service Takes Lake City Property.—The Columbia College property, Lake City, was taken over March 1, by Dr. Goff, U. S. P. H. S. The work of renovating and remodeling is to be pushed ahead as rapidly as possible. The hospital will be operated directly under the Bureau of War Risk Insurance.

GEORGIA

Ellis Law Adopted.—Decatur County has adopted the Ellis health law and will begin operating with a full-time commissioner of health very shortly. Decatur is the seventeenth county to adopt this law.

Judgment Against Physician.—The damage suit brought by Mrs. Marie W. Whitman against Dr. William B. Crawford, Savannah, in which \$20,000 damages were claimed, is said to have been decided in favor of the plaintiff, January 28, a jury awarding her damages of \$2,000.

Free Clinic.—The Chamber of Commerce of the city of Fitzgerald held a special meeting, at which the members of the Ben Hill County Medical Society were guests, in an endeavor to organize against vice and venereal diseases. The meeting was addressed by Dr. Josephus P. J. Bowdoin, Adairsville, director of the venereal disease control department of the state board of health. As a result of the meeting a free clinic will be organized in Fitzgerald.

ILLINOIS

Physician Arrested for Sedition.—Dr. Oscar J. Brown, DeKalb, leader of radicalism in his section of the state, is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician's License Revoked.—Monday, March 1, 1920, the Department of Registration and Education revoked the license of Dr. Warren D. Scott, Decatur, on the ground that he had been conducting offices in different parts of the country under the name "United Doctors."

Personal.—Dr. Frederick H. Lamb, Davenport, Iowa, has been appointed pathologist to St. Anthony's Hospital, Rock Island.—Dr. Edmund Summers, Mattoon, while driving his automobile across the tracks of the Illinois Central Railroad near Mattoon, February 27, was struck by a train and seriously injured. He is under treatment in the Mattoon Hospital.

Public Nurses Provided.—As a result of a recent conference between Dr. C. St. Clair Drake, Springfield, state director

of public health, and Miss Helen Fox, Washington, superintendent of the public health nursing service of the American Red Cross, every community in Illinois of more than 5,000 population will be provided with a community nurse. Miss Etta Lee Gowdy was chosen supervising nurse for the state, and Miss Minnie Ahrens for the Chicago district.

Chicago

Honor Dr. Gilmer.—The Chicago Dental Society will give a dinner in honor of Dr. Thomas Lewis Gilmer, March 23, in the gold room of the Congress Hotel.

Physician Arrested for Sedition.—Dr. Karl F. M. Sandberg is said to have been indicted by a special grand jury, March 9, charged with violation of the Illinois sedition act.

Physician Fined.—Dr. Alois C. Rasmussen is said to have been fined \$100 and costs by a police magistrate in Oak Park for failure to report a case of scarlet fever to the health commissioner of that village.

Personal.—Dr. Hugh N. MacKechie has resigned from the medical department of Loyola University.—Dr. Effie L. Lobdell has been appointed professor of obstetrics in the Illinois Post-Graduate Medical School.

Dr. Wile in Chicago.—An informal dinner in honor of Dr. Udo J. Wile, Ann Arbor, was given at the University Club, March 17. After the dinner Dr. Wile presented a paper before the Chicago Medical Society on "A Critical Study of Two Obscure Phases of Hepatic Syphilis."

Effect of Prohibition.—It is announced that the Washington Home closed its doors, March 15, and moved to much smaller quarters at the Martha Washington Home on Irving Park Boulevard. The home was founded in 1863, and since that time has cared for 50,000 liquor and drug addicts.

Research Club Meeting.—The Medical Research Club of the University of Illinois held its fifty-second meeting, March 12, at the City Club. Prof. Louis Kahlenberg of the University of Wisconsin detailed "The Result of Experiments in the Passage of Substance Through the Skin by Osmosis," and Dr. Edward H. Ochsner spoke on "Osmosis in Relation to Clinical Medicine."

Medical School Changes Name.—Aug. 1, 1919, legal authority was granted to the Chicago Hospital College of Medicine, an institution rated as Class "C" by the Council on Medical Education, to change its name to the Chicago Medical School. The certificate filed in the office of the Secretary of State of Illinois, Feb. 5, 1915, grants this college authority for

"Education and general contracting, including the operation of hospitals, sanitariums, laboratories, preparatory and professional schools and the conferring of the degrees of Bachelor, Master and Doctor of Sciences, Arts, Laws, Medicine, Surgery, Public Health, etc."

INDIANA

County Hospital Favored.—At the city session, March 9, the residents of Blackford County voted for the erection of a county hospital to cost \$80,000. The proposal won by a majority of 782, the total votes cast being 2,262.

Deaths in Indiana.—The registrar-statistician of the state board of health reports that there were 9,184 fewer deaths in the state in 1919 than in 1918, the respective figures being 37,077 and 46,261. There was also a decline of 5,623 in births in 1919, as compared with the previous year, the respective figures being 58,690 and 64,313.

Personal.—Dr. George S. Bliss, Fort Wayne, superintendent of the state school for the feeble-minded has resigned to accept the position of superintendent of the school for feeble-minded of Honolulu, Hawaii, and Dr. Melvin Druckmiller has been appointed acting superintendent.—Dr. Charles G. Beall has been appointed a member of the medical corps of the institution.—Dr. Osborne T. Brazelton, Princeton, while returning with his family in his car from Patoka, January 29, was shot at, the bullet crashed through the windshield of his car and he suffered a number of slight wounds of the face.—Dr. Alembert W. Brayton, Indianapolis, celebrated his seventieth birthday anniversary, March 3.—Dr. George W. Frederick, Kokomo, was operated on at the Good Samaritan Hospital, Kokomo, February 24, for the removal of gallstones.

MARYLAND

Personal.—Dr. Allen W. Freeman, Columbus, commissioner of health for Ohio, lectured on the public health administration of Ohio, March 8, at the School of Hygiene and

Public Health, Johns Hopkins University.—Dr. Edgar M. Parlett, Baltimore, formerly supervisor of sanitation in the relief department of the Baltimore and Ohio Railroad at Baltimore, has been appointed manager of the health and sanitation bureau of the Carnegie Steel Company, with headquarters at Pittsburgh.—Dr. William S. Halsted, Baltimore, has been elected to honorary foreign membership in the Royal Academy of Medicine, Belgium.

Colleagues Honor Professor Welch.—In April Dr. W. H. Welch reaches his seventieth birthday. As a recognition of this event, his friends have determined to preserve in suitable form the chief contributions of Dr. Welch to medical literature. They have been brought together for publication in three volumes. Friends and former pupils of Dr. Welch are invited to subscribe. The volumes will be issued by the Johns Hopkins press under the editorial supervision of a representative committee. The three volumes, bound in linen, are offered to subscribers at \$16.50. Copies, which will be numbered and assigned in order of subscription, may be secured by addressing the press.

MASSACHUSETTS

Personal.—Dr. Michael F. Burke, Natick, sustained serious injuries of the head and back when his sleigh was struck by a Boston and Worcester street railway car in Natick, February 9.—Dr. Frederick R. Barnes, Fall River, has been appointed associate medical examiner (coroner) for the Third Bristol District, succeeding Dr. John H. Gifford, deceased.

MICHIGAN

Medical Building for Flint.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Association with a capital stock of \$50,000, the purpose of which is to erect a six story building to be devoted exclusively to professional purposes.

Personal.—Members of the Pontiac Medical Club, February 25, gave a dinner in honor of Dr. Joseph G. Knapp, former secretary of the club who is moving to Cleveland, and presented him with a leather traveling case. Dr. Carlton D. Morris, Pontiac, was selected president; Dr. John W. Fox, Pontiac, vice president, and Dr. Harry B. Yoh, Pontiac, secretary.—Dr. Vilda S. Laurin has been appointed acting city physician of Muskegon, succeeding Reuben J. Harrington.

The Care of Children's Teeth.—The Genessee County Medical Society, at a recent meeting in Flint, adopted a resolution agreeing to take every opportunity to instruct those coming under the care of the members with reference to the need of beginning the care of the teeth of their children at 2½ or 3 years of age, or as soon as erupted; agreeing to give all children coming under their care competent and conscientious attention; endorsing the start made by the dental division of the health department of Flint, in the establishment of free dental clinics; recommending the extension of this work, and the need of competent care with more frequent examinations, and advice as to matters which cannot readily be made practical in the public dental clinic. The dental division of the department of health now has three full-time dentists and one dental hygienist. The aim of the department is to build it up, so that free dental care may be given to all children whose parents wish to take advantage of it.

MISSISSIPPI

Funds Provided for Malarial Survey.—The city council of Columbus, February 17, made an appropriation of \$3,000 for carrying out a malarial survey.

Colony for Epileptics.—The state senate, February 25, passed a bill for founding, equipping, and conducting a state institution or colony for the feeble-minded and epileptics.

State Board Meeting.—At the annual meeting for organization of the state board of health held in Jackson, February 27, Dr. J. Harvey McNeill, Olive Branch, was elected president of the board, and Dr. Waller S. Leathers, University, was reelected secretary and executive officer.

New Hospital Building for Soldier's Home.—The delegation from the state legislature which visited the Jefferson Davis Soldiers' Home, Beauvoir, February 28, expressed themselves as being in favor of providing the home with a new hospital, the present structure being regarded as inadequate and unsafe. It is proposed to erect a new brick hospital to cost \$125,000.

Personal.—Dr. John A. Mead, Logtown, has been appointed health officer of Hancock County, to succeed Dr. Joseph W. Moody, Kiln, resigned.—Dr. George Y. Hicks, Vicksburg, has been appointed superintendent of the State Charity Hospital, Vicksburg.—Dr. James O. Ringold has been elected health officer of Montgomery County.—Dr. James A. Toole, Marks, has been elected health officer of Quitman County.—Dr. William I. Marsalis, Centerville, has been elected health officer of Wilkinson County.

NEW MEXICO

Personal.—Walter M. Connell, chairman of the city commissioners of Albuquerque, has been appointed first vice president of the New Mexico Public Health Association to fill the vacancy caused by the death of Dr. Oliver T. Hyde.—Dr. Frank N. Carrier, Santa Rita, has been elected secretary, and David R. Boyd, treasurer, of the New Mexico Public Health Association.—Dr. Le Roy S. Peters, Albuquerque, has been appointed medical director of St. Joseph's Hospital, succeeding Dr. Oliver T. Hyde, deceased. Dr. Arno Klein, Albuquerque, has been appointed assistant medical director of the hospital.

New Health Law.—Senate bill No. 5, which passed the senate with a vote of seventeen to five and the house of representatives unanimously and was signed by the governor, March 1, provides that, whenever in the opinion of the commissioner of health, conditions require the employment of persons in addition to county and city health officers to carry out the health laws, rules and regulations, these may be employed by the governing boards of counties and incorporated municipalities. To provide for the current expenses of the health department, boards of county commissioners are authorized to levy a tax not to exceed one-half mill on each dollar of taxable property in the county, exclusive of that within incorporated municipalities. The governing bodies of such municipalities may levy a tax not exceeding one-half mill on each dollar of taxable property within their boundaries.

NEW YORK

Personal.—Dr. William L. Munson, Granville, sanitary supervisor who was taken ill with pneumonia while in Plattsburg in connection with the public health course for nurses at the Champlain Valley Hospital, is convalescent and has returned home.

Civil Service Examinations.—The state civil service commission announces that examinations will be held, April 10, for the positions of bacteriologist-pathologist, state department of health, with a salary of \$2,500 to \$3,000; laboratory assistant and bacteriologist, state department of health, with a salary of \$900 to \$1,320, and laboratory apprentice, state department of health, with a salary of \$840.

Beneficiaries of Dr. John Van Der Poel's Will.—The will of Dr. John Van der Poel, who died, February 23, disposes of an estate of more than \$200,000, and many family heirlooms, one of which is "an old English pepper grinder," which had been in the family many generations, and which is bequeathed to his attorney Edward R. Boise. A painting on wood by Egbert Van der Poel, dated 1640, and Rembrandt's "Lessons in Anatomy" go to the Albany Institute and Historical Society.

New York City

Appointed City Bacteriologist.—Miss Margaret F. Upton, formerly connected with the laboratory of the New York Post-Graduate Hospital, has been appointed city bacteriologist of Utica.

Encephalitis Lethargica.—According to the records of the New York City Health Department there have been reported from January 1 to March 9, 175 cases of encephalitis lethargica with forty deaths. It is said that there are more cases at present than at any previous time.

Drug Clinic Closed.—The drug clinic of the municipal health department which was opened last April after a series of federal raids which lessened the illicit traffic in narcotics and caused suffering among drug addicts, was closed, March 6, since the need for the clinic has apparently passed.

Personal.—Dr. Wilfred T. Grenfell of the Grenfell Annual Surgical and Health Mission to Labrador arrived in New York on the *Carmania* after a three months' lecture trip abroad.—Dr. John M. Wheeler has been elected ophthalmic surgeon to the New York Eye and Ear Infirmary, succeeding Dr. John E. Weeks, who has been appointed consulting surgeon to the institution.

New York University Medical Alumni to Organize.—A meeting has been called by the organization committee, of which Dr. Robert J. Carlisle is chairman, for March 24, at the Carnegie Laboratory for the purpose of organizing the medical alumni of New York University. There are more than 6,000 living alumni of the medical school and it is believed it will prove one of the strongest alumni organizations among medical schools in this country.

PENNSYLVANIA

Chemists Die.—Leonard Merritt Liddle, aged 26, research chemist of Mellon Institute, Pittsburgh, died, February 21.—Dr. Francis C. Phillips, aged 69, retired dean of the chemistry department of the University of Pittsburgh, and a member of the faculty for more than forty years, died, February 16.

Pennsylvania Bacteriologists Organize.—March 9, the bacteriologists of Eastern Pennsylvania met in the laboratory of hygiene of the University of Pennsylvania, Philadelphia, and organized a local branch of the Society of American Bacteriologists, electing Dr. David H. Bergey, Philadelphia, chairman; Dr. Courtland Y. White, Philadelphia, secretary-treasurer, and Dr. Claude P. Brown, Ambler, a member of the executive committee. The society will meet on the second Tuesday of each month, excepting June, July and August.

Philadelphia

Four Physicians Held.—Charged with violation of the state advertising act, four physicians were held under \$600 bail for court yesterday by Magistrate Macleary. They are: Drs. David Weissman, Lawrence Kauffman, Marshall A. Davis and Harry Y. Messec. The arrests followed written complaints to Mayor Moore.

Obstetric Societies Joint Meeting.—March 9, the Philadelphia Obstetrical Society was the guest of the New York Medical Society. Clinics were held throughout the day in New York. In the evening a dinner was held at the Hotel Pennsylvania. Dr. Edward P. Davis read a paper entitled "Intestinal Infection in Pregnancy, Labor and Puerperium."

Memorial to Dr. Wood.—A special meeting of the College of Physicians was held, March 19, as a memorial to Dr. Horatio C. Wood. Dr. George E. de Schweinitz read a memoir of Dr. Wood. "Recollections of a Pioneer in Pharmacology in the United States," was read by Dr. Hobart A. Hare; "An Appreciation," by Dr. Francis X. Dercum, and "Reminiscences, Chiefly Neurological and Medico-Legal," by Dr. Charles K. Mills.

Personal.—Charles R. Stockard, Ph.D., professor of anatomy at Cornell University Medical School, New York City, read a paper on "Growth Rate and Its Influence on Structural Perfection and Mental Reactions" before the Philadelphia Psychiatric Society, March 12.—Dr. Judson Daland presented his resignation as a censor of the Philadelphia County Medical Society at its meeting, February 25, after twenty years of service in that office.

More Arrests in Sanitation Drive.—March 8, thirteen persons were arrested for violation of sanitation laws, bringing the total of arrests in the last three weeks, under the direction of the health department, to more than 150. Most of the cases recently were scavengers caught in the downtown section upsetting receptacles and strewing the streets with waste. They were fined and released with a reprimand if it was their first offense. Dr. Charles L. Furbush, director of public health and charities, is determined that all violators of sanitation rules shall be vigorously prosecuted and all householders who dump ashes in the streets or who do not provide proper receptacles shall be subject to arrest.

CANADA

Health Budget.—The estimates of the Toronto board of health for 1920 amount to \$1,067,216, but the board of control cut more than \$100,000 from the estimates. For epidemics \$100,000 is allowed, and of this amount \$74,000 has already been spent.

Hospital News.—Montreal is to have a Chinese hospital. The accommodation is to be for twenty-five beds. The temporary institution has already ten patients. It is claimed to be the first Oriental hospital in Canada.—Chatham, Ont., will raise \$50,000 this year for the endowment of its general hospital.

Public Health News.—Medical inspection of schools has been inaugurated in Brantford, Ont., with Dr. Alexander in

charge.—Dr. C. Achille Daigle, Montreal, has been elected a member of the central board of the Roman Catholic School Commission of that city.

University News.—Owing to the fact that he has been appointed British ambassador to the United States, Sir Auckland C. Geddes has resigned the presidency of McGill University, Montreal. A new principal is being sought and preference will be given to a graduate of McGill, and a Canadian.

Influenza.—Up to Monday, March 1, it was announced that in Montreal during the influenza epidemic there were 657 deaths from influenza, pneumonia, and bronchopneumonia. About fifty cases a day were being reported, March 1.—Quebec City, March 4, it was announced, had had 500 cases of influenza with only two deaths.—The total number of deaths for influenza and pneumonia in Toronto for February was 656, out of a total death rate for the month of 1,191.

Sale of Liquor.—The Manitoba liquor act has been amended. Sale of liquor by wholesale druggists has been abolished. Medical men are limited to 2 quarts a day for professional purposes and 100 prescriptions a month; hospitals, 5 gallons a day.—Hon. J. R. Boyle, attorney-general of Alberta, recently announced in the legislature of that province that the profits on the government sale of liquor had been more than \$2,000,000 in 1919; and that the illegal sale of liquor had amounted to about \$3,500,000.

Public Health Notes.—The province of Quebec has lifted the ban on Ontario residents and others journeying into Quebec. Vaccination is now no longer required.—The Superior Board of Health of the province of Quebec will shortly inaugurate a campaign against tuberculosis in that province. A committee has been appointed consisting of Drs. E. M. Desaulniers, St. Lambert, Chambly; Charles R. Paquin, Quebec; Joseph E. Laberge, Montreal, and J. A. E. Beaudoin, Montreal, as secretary, to study the question and to advise what steps should be taken to make the campaign effective.

University News.—The fund for the University of Montreal (Laval), recently destroyed by fire, has attained to more than \$3,500,000.—Toronto University needs \$4,000,000 for its reorganized medical department. Dr. George E. Vincent of the Rockefeller Foundation has been in Toronto the past week and has been conferring with the special committee of the medical department presided over by Dr. Alexander Primrose, C.B. It is planned to pay whole-time professors in medicine, surgery, obstetrics, pathology, and perhaps one or two others, \$10,000 a year. Representatives from Queens, Western at London, and from Winnipeg interviewed Dr. Vincent as to their likelihood of participating in the \$5,000,000 to be allotted to Canada for medical education from the foundation.

Personal.—Dr. Edward C. Arthur, Vancouver, B. C., has been appointed traveling medical health officer of the province.—William James Chapman, Kenora, has been D. A. M. S. Military District No. 1, Winnipeg since July last.—Dr. William Harold Graham Aspland, London, has attained the rank of lieutenant-colonel and is now living in Middlesborough, Yorkshire, England.—Dr. Howard Green Barrie has returned to Shanghai after nearly five years' service in Serbia, Egypt and Alexandria.—Herbert Eldon Roaf, London, has been appointed to the chair of physiology in the University of London, England.—Dr. George Barnes Archer has returned to Ranaghat, India, and resumed his prewar activities as medical missionary.—Gerald Allison, Picton, Ont., M. B. Tor., 1915, after serving with the R. A. M. C., has returned to Toronto and received an appointment on the staff of the Toronto General Hospital.

GENERAL

Radiologists to Meet.—The Radiological Society of North America will hold its annual meeting in New Orleans, April 23 and 24.

Throat, Nose and Ear Men to Meet.—The annual meeting of the American Laryngological, Rhinological and Otological Society will be held in Boston, June 2, 3 and 4, under the presidency of Dr. Harris P. Mosher, Boston.

Legislation on Child Welfare.—The legislative appropriation bill which has just passed the House of Representatives contains a provision appropriating \$80,000 for the investigation and report on matters pertaining to the welfare of children and child life and especially to the question of infant mortality within the District of Columbia. This work

is to be undertaken by the Children's Bureau of the Department of Labor.

Chairman Chosen.—The following chairmen have been selected for the various sections of the annual meeting of the National Tuberculosis Association to be held in St. Louis, April 22 to 24: medical section, Dr. George Dock, St. Louis; pathologic section, Dr. Eugene L. Opie, St. Louis; advisory council, Dr. Allen W. Freeman, Columbus, Ohio, and sociologic section, Dr. Hibbert W. Hill, St. Paul.

Opportunities for Physicians in China.—The Interchurch World Movement of North America has issued a special appeal for services of medical women in the Orient. There is great need for American medical women in orthopedic surgery, and there is also great opportunity for laboratory trained women. The medical schools of Canton, Hankow, Nanking, Peking and Soochow also offer some practical opportunities.

American Life Convention.—The tenth annual meeting of the medical section of the American Life Convention was held at French Lick Springs, Ind., March 10 to 12, under the chairmanship of Dr. C. Naumann McCloud, Minneapolis. The following officers were elected: Dr. Frank L. Truitt, Indianapolis, chairman; Dr. Calvin H. English, Fort Wayne, vice chairman; Dr. Frank L. B. Jenney, Chicago, secretary (reelected), and Dr. Henry Wireman Cork, Minneapolis, a member of the board of managers.

Christmas Seals.—At a conference of representatives of state associations and the National Tuberculosis Association in Chicago, January 8 to 10, it was reported that the proceeds of the 1919 sale of Christmas seals would amount to more than \$4,100,000.—The chairman of the central committee of the American Red Cross has notified the National Tuberculosis Association under date of January 27, that the American Red Cross will discontinue the sale of seals as a means of raising funds for the organization.

Mortality Statistics.—The Bureau of the Census has just issued Bulletin No. 41, giving the mortality statistics for 1918. The bulletin includes the most important facts relative to deaths recorded in the death registration area. The states of Illinois, Louisiana and Oregon have been added to the area, so that the bulletin concerns a population of 81,868,104, or 77.8 per cent. of the total population of the United States. The total number of deaths for this area, including 26,209 soldiers, sailors and marines, was 1,471,367, corresponding to a death rate of 18 per thousand population, or 3.8 higher than the rate for 1917, which was 14.2. The great increase in the death rate was believed to be entirely due to the high mortality caused by the pandemic of influenza.

National Board of Medical Examiners Incorporated.—Senate Bill No. 3959 has been introduced by Senator Kellogg to incorporate the National Board of Medical Examiners of the United States of America. It provides that Rear Admiral William C. Braisted, U. S. Navy; Major-Gen. Merritte W. Ireland, U. S. Army; Surg.-Gen. Rupert Blue, U. S. P. H. S.; Admiral Edward R. Stitt, U. S. Navy; Col. Louis A. LaGarde, M. C., U. S. Army, retired; Asst. Surg.-Gen. William Colby Rucker, U. S. P. H. S., and Drs. Herbert Harlan, Baltimore; Isadore Dyer, New Orleans; Victor C. Vaughan, Ann Arbor, Mich.; Walter L. Bierring, Des Moines, Iowa, and such other persons as may be chosen who are members of the National Board of Medical Examiners, an unincorporated, nonprofit association known as the National Board of Medical Examiners, and their successors, are hereby created and declared to be a body corporate.

Bequests and Donations.—The following bequests and donations have recently been announced:

Blackford County Hospital, Hartford City, Ind., a donation of three city blocks in Hartford City and \$5,000 for improvements thereon by Mrs. H. B. Smith in memory of her husband.

For a free hospital for Indians near Henrietta, Okla., \$1,000,000 by Jackson Barnett, an Indian of Oklahoma made wealthy by oil.

McGill University, Montreal, \$5,500 for a scholarship in medicine in memory of his son, Lieut. Walter W. Hoare, by Dr. Charles W. Hoare, Walkerville, Ont.

Harbin Hospital, Rome, Ga., a donation of radium costing between \$6,000 and \$10,000 by J. P. Cooper.

Mercy Hospital, Chicago, \$250,000 by the will of Charles E. Haines, St. Charles.

Women's Medical College of Pennsylvania, Philadelphia, \$4,000 for an endowment to educate a woman medical missionary for work in China, by the Board of Foreign Missions of General Synod of the Reformed Church.

Michael Reese Hospital, Chicago, \$200,000 by the will of Otto Baer. American Hospital, Paris, a donation of 4946,000 francs by Mrs. Robert Bacon, widow of the late American ambassador to France for

the endowment, in memory of Colonel Bacon, of twenty-four beds in free wards of the hospital to be built at Neuilly. Mr. Henry P. Davison of the American Red Cross has transferred 750,000 francs, the remainder of one of the war funds of which he was chairman, to the American Red Cross Hospital in France to that part of the hospital devoted to the Bacon free wards.

Lankenau Hospital, Philadelphia, \$5,000 by the will of Gustaf A. Schwartz.

Legislation on Mailing of Chemicals.—Congressman Halvor Steenerson of Minnesota has favorably reported from the Committee on Post Offices and Post Roads a bill amending the penal code of the United States which forbids the transmission through the mails of "all kinds of poison" and "chemicals." The bill as reported will permit the postmaster-general to make regulations on this general subject. In a letter to Congressman Steenerson, Postmaster-General Burleson says:

"There is a widespread public demand for the admission to the mails of certain classes of matter, and the proposed legislation is designed to meet this demand. Many requests from manufacturers, chemists, physicians, surgeons, druggists, dealers in medicines and their associations, etc., to extend to them the facilities of the parcel post for the transportation of medicines and drugs, have been received, it being urged that the exclusion of such matter from the mails works a peculiar hardship on physicians, druggists, dentists and veterinarians who are located at points remote from express offices, they having no direct way under the present law of getting small shipments of drugs. The manufacturers and dealers are equally interested, as the parcel post is the only direct way of communicating with persons authorized to handle habit-forming drugs."

The law as amended will permit the sending through the mails of poisons, chemicals, and other articles hitherto forbidden, under special regulations relating to the subject made by the Post Office Department. The bill specifically provides, however, that these articles are to be sent "from the manufacturer thereof or dealer therein, to licensed physicians, surgeons, dentists, pharmacists, druggists and veterinarians."

FOREIGN

Vaccination Compulsory in Czechoslovakia.—It is said that a law of date of last July makes vaccination compulsory in Czechoslovakia during the first year and again at the completion of the seventh and of the fourteenth years.

Credé Centennial.—Both the method of placental expression and the silver nitrate prophylaxis of ophthalmia neonatorum were introduced by K. S. F. Credé of Berlin, the centennial of whose birth was recently celebrated in Germany.

British Medical Association Meeting.—The next annual meeting of the British Medical Association will be held in the University of Cambridge in the last week in June under the presidency of Sir Thomas Clifford Allbutt, who was president of the association at the opening of the war, since which time no meeting has been held.

Requirements to Practice in Hayti.—A communication from a reliable source states that physicians of the United States who desire to enter practice in Hayti may become qualified to do so by presenting their original diploma of graduation from medical schools and evidence of their preparation and licensure to the National School of Medicine, Port au Prince, Hayti.

Predetermination of Sex.—The German medical society organized at Berlin for research on sexual science and eugenics has offered a prize of 1,000 marks for the best article on the subject, "Has Man Two Kinds of Spermatozoa?" The question is to be studied by the light of modern views on predetermination of sex. The secretary of the society is Dr. M. Hirsch, Motzstr. 34, Berlin.

Poisoning from Beans.—The German medical journals state that Professor Lewin of Berlin warns that beans should not be allowed to be imported that contain more than 20 mg. hydrocyanic acid in 100 gm. of the beans. There have been several cases of vomiting and diarrhea keeping up for ten or twelve hours after ingestion of imported beans of the *Phaseolus lunatus* family. This includes butter, sugar and lima beans and the bitter or Egyptian bean.

Personal.—A gold medal and 5,000 francs, representing the Lannelongue prize, was awarded recently by the French Society of Surgery to Dr. H. Gaudier of Lille, for his pioneer work in the excision and immediate suture of war wounds. —Dr. Léon Bernard, professor of medicine, Faculty of Medicine, Paris, has been elected a member of the Academy of Medicine, and Drs. Leshre, Lyons, and Lignières, Buenos Aires, have been elected corresponding members. —Prof. Thomas Swale Vincent has been appointed to the university chair of medicine tenable at the Middlesex Hospital Medical College, London.

Deaths in the Profession Abroad.—Dr. W. Busse, professor of gynecology at the University of Jena, aged 46.—Dr. H. Weicker, physician in chief of the Göbersdorf sanatorium. —Dr. P. Mayet of Berlin, a statistician and writer on social hygiene. He is credited with the initiative for the government pension now granted to parturients.—Dr. L. Pinatelle, formerly professor of surgery at the University of Lyon, aged 46.—Dr. Cecil Rupert Chaworth Lyster, director of the radiotherapeutic department of Middlesex Hospital, London, died, January 26, from the effects of roentgen-ray burns for which repeated operations had been performed.

Tribute to the Heroes in the Profession During the War.—A subscription has been opened under the auspices of all the medical schools and organizations of France to collect funds to honor the memory of the medical victims of the war. It is planned to issue a souvenir volume, the *Livre d'or*, to contain the names and citations of all the physicians and medical students who died for France, in whatever service they may have been engaged. Dr. Caboche, 372 rue Saint-Honoré, Paris, is in charge of this part of the work, collecting private data to control the state archives. A copy of the volume will be presented to every one who subscribes at least 40 francs. A monument is also planned and subscriptions are being received for this purpose throughout France. The treasurer general is Dr. Bongrand, 6 rue Villaret-de-Joyeuse, Paris.

Foreign Guests Visit the United States.—At the invitation of members of the National Board of Medical Examiners, who visited England and France during 1919, several prominent physicians from abroad will visit America and make a tour of the country and attend the annual meeting of the American Medical Association in New Orleans. These guests are:

Sir Humphrey Rolleston, F.R.C.P., London; appointed by the president of the Royal College of Physicians, London.

Col. H. J. Waring, F. R. C. S., London; appointed by the president Royal College of Surgeons, England. Representing Conjoint Board of England.

Dr. Norman Walker, Edinburgh, representing the Triple Qualification Board of Scotland.

Professor Gregoire, surgeon, and Professor Roussy, physician; appointed by the dean of the faculty of medicine, University of Paris.

This commission will be joined by Prof. J. C. Connell, Kingston, Ontario, president of the Medical Council of the Dominion of Canada.

Merger of French Journals of Gynecology.—It is announced that a new journal, to be entitled *Gynécologie et Obstétrique*, is to be issued as a merger of the three leading French journals in this field. It takes the place of the *Archives mensuelles d'Obstétrique et de Gynécologie* which Bar and Faure have been guiding so long and which in turn was the successor of the *Obstétrique*; also of the *Revue de Gynécologie*, Pozzi's handsome journal which stopped with the war and his death, and of the *Annales de Gynécologie et d'Obstétrique*, the directors of which included Pinard, Hartmann and Pollosson, with Couvelaire and Lecène in charge. The new journal is to appear monthly, to be issued by Masson et Cie, 120 boulevard Saint-Germain, Paris. The subscription is 50 francs. All the three journals which it succeeds have been regularly indexed in the Current Literature department as they were issued, practically since the department was founded.

LATIN AMERICA

Influenza Epidemic in Panama.—Influenza has assumed an epidemic form in Panama, and the hospitals of Colon are filled with patients.

Epidemic of Meningitis in Havana.—The epidemic of cerebrospinal meningitis in Havana continues to spread. During the last few days a number of deaths have occurred among the personnel of the Cuban navy.

Personal.—Prof. B. A. Houssay of the University of Buenos Aires has been elected corresponding member of the Société de Pathologie exotique at Paris in token of appreciation for his extensive research on snake venom and on scorpion and spider poisons.

Deaths in the Profession.—Dr. J. J. Mon of Buenos Aires, hospital physician and writer, aged 40.—Dr. F. Castro Rabello Kock, professor of therapeutics at the University of Bahia and official of the state public health service, aged 39.—Dr. J. de Verney Campello, professor of microbiology at the University of Rio de Janeiro, aged 37.—Dr. A. de Arruda Beltrão, a prominent physician at Rio de Janeiro and official health officer, aged 54.—Dr. E. J. Corbellini, formerly *profesor suplente* of surgery in the University of Buenos Aires, *consejero* of the university and a leading surgeon of the capitol, aged 47.

Government Services

Changes in Public Health Service

The President has sent to the Senate the nominations of former Surgeon-General Rupert Blue and Joseph H. White to be assistant surgeon-generals at large of the public health service.

Disease Conditions in the Army

For the week ending March 5, a few cases of influenza were reported from nearly all of the large camps and stations. At Camp Taylor the epidemic appeared to be subsiding much more slowly than at other camps, the personnel at this camp being nearly twice as large as at any other. The whole epidemic is considered at an end, so far as it affects the military service.

Influenza in the Navy Personnel

The influenza epidemic of 1920 affected the Navy as it did the civilian population. The recurrence began during the week ending January 17 at Great Lakes, Ill. On January 12 there were fifty-one cases. The peak was reached on the third day with the admission of 182 new cases during twenty-four hours. Although the peak came earlier than in the 1918 epidemic, the decline was less rapid and there were four secondary peaks, the outbreak terminating on the twenty-fourth day. It is reported that on the whole the epidemic was less severe and the cases milder during 1920 than during 1918. Pneumonia was a complication in about 10 per cent. of the reported cases of influenza. In addition to the epidemic at Great Lakes, which included in all 1,415 cases, there were 3,354 cases in other stations.

European Health Conditions

Surgeon-General Hugh S. Cumming, U. S. P. H. S., returned from his duties in Europe, where he has been stationed for two years, to assume his new position in Washington, March 10. Dr. Cumming says that typhus is far from being checked and seems to be increasing, so that there is imminent danger of an epidemic raging over Europe on a large scale, unless the most strict quarantine and other control measures are enforced. With the disease entrenched in European ports, the next danger point will be the United States, and he believes that nothing should be left undone to keep out this disease as well as bubonic plague. An agency is soon to be established under the League of Nations which will coordinate and strengthen the health work of all nations and will particularly improve the reporting of diseases and maintenance of international quarantine. April 12, a meeting is to be held in London, to which representatives of the health departments of various nations have been invited, when it is believed a permanent organization will be formed.

Contract Surgeons Under Army Reorganization Bill

Pressure is being brought to bear on members of the House of Representatives for recognition in the Army reorganization bill of former contract surgeons of the Army. The Army bill as it was reported to the House fails to credit contract surgeons and assistant surgeons for their service in the Army, which service in part determines their claim for longevity pay and retirement. The Army reorganization bill now pending in the Senate gives full credit to contract surgeons for their service in the Army, but the Army reorganization bill pending in the House is silent with reference to such recognition for contract surgeons. It is the general feeling that contract surgeons have not received justice in the House bill nor been accorded the recognition which is due them. When the American soldiers went to the Philippines and later to China the greater part of the work of the medical department was performed by acting assistant surgeons. It was seldom if ever that a regular medical Army officer was at that time on active duty with troops.

The War Department asked for volunteer acting assistant surgeons to meet the demand for medical officers. Physicians who thus entered the service signed a contract with the surgeon-general to perform the duties of a first lieutenant. Technically, however, such physicians were not army offi-

cers but were termed contract surgeons, although they performed the duties and were exposed to the hardships of the regular medical officer in the Army. As it does not seem likely that the House bill can be amended at this late time, it is felt that the Senate committee on military affairs will insist on recognizing the claims made in behalf of the contract surgeons.

Foreign Correspondence

LONDON

Feb. 21, 1920.

The Prevention of Venereal Disease

The prevention of venereal disease is still a burning topic. A largely attended public meeting, convened by the Society for the Prevention of Venereal Disease, has been held at the Mansion House under the presidency of the lord mayor. A resolution was carried unanimously that venereal disease had become a menace to national health and prosperity, and in view of the fact that infection can be prevented by self-disinfection immediately after exposure, it is necessary to instruct the public as to the importance and method of doing this. These instructions for immediate self-disinfection have been issued by the society: Materials required: cotton wool; a solution of potassium permanganate, in 1:1,000; calomel ointment, 33 per cent. (A) If exposure takes place outdoors or where complete disinfection is impracticable: (1) Make water. (2) Soak a swab of cotton wool with the solution. Draw back the foreskin, carefully swab the head of the penis and undersurface of the foreskin, especially at the opening of the pipe. These steps must be taken within an hour of exposure. (3) On returning home, thoroughly wash the sexual organs with soap and water and well rub the ointment into the penis, drawing back the foreskin. This must be done within six hours of exposure. (B) If exposure has taken place within doors, a more complete immediate disinfection should be made: (1) Make water. (2) Wash the sexual organs and parts around with soap and water. (3) Swab with the solution. (4) Rub the ointment well into the penis. The swabbing with the permanganate is the most important measure. An additional safeguard is to apply the ointment before intercourse. If exposure has occurred under the influence of alcohol, so that the precautions recommended have not been promptly taken, the chances of infection may be considerably lessened by carrying out "B," well rubbing in the ointment for ten minutes and in addition syringing the pipe with permanganate solution of half the strength recommended for the outside, and holding the solution in for two minutes by pinching the lips of the pipe. This method is useless after twelve hours. If none of these precautions have been taken, and there is reason to believe that infection is probable, a physician should be consulted at once.

The subject has also been considered by the Medical Women's Federation, which has issued a pamphlet stating that the chief and most important part of the task with which society is faced is such a reform of our social structure and moral habits as will gradually eliminate conditions which have led to the prevalence of venereal disease. In regard to prophylaxis, the federation associates itself with the findings of the interdepartmental committees on infectious diseases in connection with demobilization. The committee found that even under the conditions of discipline of men on active service, the "prophylactic packet system" was a failure. The provision of clinics open at all hours of the day and night for early preventive treatment so that sterilization may be carried out within a short time of the act is also condemned as encouraging and countenancing promiscuous intercourse. "The sale by chemists of calomel ointment or permanganate solution is a matter with which we have no concern as long as the public is aware that these things are not remedies for venereal disease."

Graduate Teaching Units

The reorganization of the teaching of several of the London hospitals by the formation of medical and surgical units under directors who, with their assistants, are entirely engaged in this work, has been described in previous letters to THE JOURNAL. An incentive to this reform is the fact that educational grants toward the expense can be obtained from the government. The London School of Tropical Medicine, the teaching of which is entirely graduate, is also adopting

the scheme. Whole-time directorships have been instituted in protozoology, helminthology, entomology and tropical pathology.

War Section of the Royal Society of Medicine

An innovation at the Royal Society of Medicine has been the formation of a war section. At the first meeting a discussion on gas poisoning in warfare was opened by Sir Wilmot Herringham, who described his introduction to this method when in April, 1915, he came across three French (Algerian) soldiers in a Canadian ambulance suffering from the effects of chlorin gas sent over by the Germans in the form of clouds or drifts. Three days later he found 600 or 700 men in hospital at one center, all suffering from its effects. They were gasping for breath, coughing, and expectorating yellow, frothy fluid, which often ran out of their mouths when they lay on their sides. No treatment seemed to avail. The method of using oxygen customary in pneumonia was not of the slightest use. Experiments were immediately made in England to elucidate the pathology, and it was shown that the chief symptoms might be explained by the difficulty of oxygen entering the blood through the great wall of edema. The mainstay of treatment was oxygen, which was administered at first by a makeshift apparatus of gasoline tins until Dr. Haldane's apparatus became available. It appeared that as far back as 1909 the Germans were preparing to use gas in war. In that year a research chemist from this country, who periodically visited Germany, was walking in the country when he detected a strange odor. He came to a small hill on which were soldiers and some sheep, of which several appeared to be dead. He was not allowed to go farther. Evidently he had come on some poison gas practice for military purposes.

Prophylactic Inoculation Against Influenza

Sir William Leishman, director of pathology at the War Office, has published the first records of the results of prophylactic inoculation against influenza according to the method described in a previous letter:

	Number of Men	Ratio per Thousand		
		Incidence of Attack	Lung Complications	Deaths
Inoculated	15,624	14.1	1.6	0.12
Noninoculated	43,520	47.3	13.3	2.25

Not only do these figures show a great advantage for the inoculated, but there is the additional fact that nearly one half of them received only a third part of the dose considered necessary.

A Majority of Women on the General Health Council

The Consultative Council on General Health Questions, established under the Ministry of Health, has held its first meeting. Dr. Addison, who presided, asked the council to put before him a statement of the main defects in existing provisions for safeguarding the health of the people, and to suggest remedies from the standpoint of the general public. Women form a large majority of the council and represent a number of trade organizations, such as the United Textile Factory Workers, the Women's Cooperative Guild, the National Council of Women of Great Britain and Ireland, and the Labor Party.

War Patients Still in the Hospital

Impressed by the fact that many medical and surgical cases have remained in military hospitals beyond the period when benefit is being derived, the medical authorities of London district have appointed a board of consultants to investigate the matter. They will visit the hospitals and advise the best method to be adopted for the patient's recovery and disposal. The board will consist of Col. H. J. Waring, president (surgeon); Major W. E. Wynter (physician); Capt. C. M. Hinds Howell (neurologist), and Col. T. H. Openshaw (orthopedic surgeon).

Election of Honorary Fellows of the Royal College of Surgeons

A. Depage, Brussels; Pierre Duval and A. Gosset, Paris; J. M. T. Finney, Johns Hopkins University, and Charles H. Mayo, Rochester, Minn., have been elected honorary fellows of the Royal College of Surgeons. It is hoped that they may be able to attend the meeting of the council in July for the presentation of diplomas.

VIENNA

Feb. 24, 1920.

Death of Professor Wertheim

A few days ago, Professor Ernst Wertheim, the famous gynecologic surgeon, died rather suddenly from the effects of an attack of the so-called influenza, which at present is prevalent in Vienna. He was only 58 years of age. Wertheim's reputation was worldwide, and there will be a large number of men in the United States who will regret to hear of his death. His chief line of work was the surgical treatment of cancer of the uterus, and his method of operation was at one time regarded as the best operation for this disease. Wertheim was a critical and exact scientist. As an operator he was bold and original, and as a teacher he was unique. With his death, which followed so soon after the death of Professor Schauta, there has occurred a rare condition in the University of Vienna. Both clinics for diseases of women are now free as both directors are dead. It will be difficult to find two suitable men to fill the vacancies. In Austria there is just now no abundance of such men, as no physician from Germany will at present be willing to come to Vienna, which does not offer much financial attraction. On the other hand, only a first-class man, who is able to teach and to do research work, can be appointed to this important post.

Influenza and Lethargic Meningitis in Vienna

At present a wave of influenza (grip) is raging in Vienna, which is not quite as bad as last year, and is distinctly different in its clinical manifestations. A new feature of the disease besides the well-known complications of the lungs and the brain is a spasmodic condition of the intestines, as reported by Dr. Massery in a paper read recently before the Medical Society of Vienna. He has seen six patients in the Samaritan Hospital who, when first seen, showed a condition resembling most closely acute strangulation of the intestine, severe pains all over the abdomen, spasms, and continual and absolute constipation. Pulse and temperature, however, remained not far from normal. Operation proved that the occlusion was due not to an obstacle, but to severe spasms of the intestinal muscles. Two cases could not be saved; death was probably due to the spasmophilic condition so often observed in cases of grip.

Another group of cases showed complications of another type of spasms; these resembled chorea. Spasms occurred in different groups of muscles, the flexors or extensors of the limbs, or of the abdominal walls. The patients were delirious, the temperature rose to 40 C. and higher and severe somnolence was always present. Seventy-one cases, of which thirty-one were fatal, were reported by Dr. Dimitz, from the neurologic clinic, at the above-mentioned meeting. The postmortem findings showed only a more or less marked hyperemia and sometimes edema of the brain, chiefly in the lenticular region. Similar epidemics appeared in various towns of Austria, lasting six weeks altogether. Lethargic meningitis is now also often observed. The patients are mostly young or middle aged persons (12 to 50 years); the mortality is rather high—20 per cent.—as etiologic treatment has not yet been possible. Pneumococcus serum seems to have a beneficial influence.

Medical Men Strike

The political weapon, the strike, which so often has been adopted with more or less success in economic warfare between capital and labor, has now been taken up, for the first time in this country, by medical men anxious to secure a modest living. The first strike was arranged by physicians of the "Krankenkasse" or sickness insurance society, who demanded an increase of their moderate fee at the rate of trebling their antewar fee. It must be added that at present the cost of living is forty times as great as before the war. As these physicians devote only part of their time to this "panel" work, their demands have been low. Hitherto the "Krankenkasse" has refused the new rate of remuneration, and so the medical men no longer treat the members on the old terms but as private patients. Public feeling is in favor of the physicians, so the result is not doubtful. A similar "difference of opinion" has sprung up in our clinics. Hitherto only the assistants and two house physicians were paid in the clinics. All other physicians, the outpatients' assistants as well as other physicians working in the clinics and, so to speak, making the thing "run," were working gratuitously. Now the enormous cost of living is so heavy that these men, too, demand from the board of education, to whom the

clinics belong, a moderate remuneration and free board. As the work of these doctors is indispensable for the good working order of the clinics and since the government has refused to comply with the wishes of the men, they applied to the "Medical Organization," comprising 99 per cent. of all medical men of Vienna, for help. The organization proclaimed, after futile negotiations, a clinical strike, which lasted only a few hours. They attained their object. The leading rule in the new understanding is: "No work without payment, but only those men will be admitted whose work is required for the clinics, and the number will be restricted to the actual needs."

PARIS

Feb. 12, 1920.

Symbiosis, a Biologic Theory

A book that appeared recently entitled "Les symbiotes" has awakened a lively discussion. The personality of the author has been known for many years in the scientific world. The name of the author in question is Paul Portier, "maître de conférences" on the Faculté des sciences de Paris and professor at the Institut océanographique, who took a prominent part in the investigations of Prof. Charles Richet on anaphylaxis. The above mentioned work would overthrow completely the ideas heretofore entertained concerning the rôle of microbes. To be sure, it was already known that all microbes are not pathogenic and that certain phenomena of life depend on the existence of bacteria. But the theory of Portier has a much more general application, for he states that every living cell is composed in reality of two cells that are associated in symbiosis; the human organism must be regarded, then, as the host of innumerable microbes dwelling in the protoplasm of the cells. The presence of the symbionts is constant and necessary, Portier thinks; without them life would be impossible. All the phenomena of intercellular organic changes, and more especially the phenomena of intercellular synthesis depend, accordingly, on the symbionts. The phenomena of "deficiency," which in recent times have attracted attention to the consideration of the interesting subject of vitamins, would likewise be explained, it is maintained, by the rôle of the symbionts. They play a part, it would seem, in the process of fecundation, in experimental and physiologic parthenogenesis, and also in the phenomena of immunity. Portier has succeeded in isolating and cultivating the symbionts, which are nothing more than the elementary structures of the cells and the blood described by the biologists under such names as "mitochondrias" and "globulins." However, it is only proper that I should add that this biologic theory has been attacked by Auguste Lumière of Lyons, who has written a book entitled "Le mythe des symbiotes" (The Myth of the Symbionts).

Physicians as Affected by the Tax on War Profits

A law dated July 1, 1916, put a special tax on war profits. It has been an undecided question whether physicians were subject to this tax. The matter has now been threshed out before the Conseil d'Etat, where a physician upheld the view that this special tax affected only those engaged in industrial and commercial pursuits. The counsel of the physician pleaded that it was not the intention of the law to include the professions, and much less the medical profession, which is bound by the right of privileged communication. But the minister of finance stated in reply that the text of the law would indicate that it applied in general to persons, subject to licensure, whose benefits and profits during the war exceeded those of normal times. The Conseil d'Etat, therefore, reached the decision that, in view of the general terms of the law, it was right and proper to tax all subject to licensure whose emoluments exceeded those that their profession normally produced, without making any distinction as to the nature of the profession and without considering the attitude usually taken toward the resources from which they derive their income. The decree adds that, even though it could be shown that the emoluments realized by certain persons thus included, by reason of the conditions under which they exercised their profession, would, of necessity, require a special limitation in the application of the law, such fact would not be of such a nature as to exonerate them completely. Consequently, the medical profession, which, according to the law of 1880, is subject to licensure, has been declared subject to the tax on war profits.

The Reorganization of Night Medical Service

So far the organization of night medical service in Paris has been anything but satisfactory. The present service

dates back to 1876, and since that time it has undergone no changes by way of reform. The main features of the service as it has existed in the past were that, in each quarter of the city, physicians were asked to state whether they desired to respond to night calls or not. The names and the addresses of those who had signified a willingness to give night service in any given quarter of the city were inscribed in a directory which was kept at the police station of that quarter. The person who was in need of a physician at night went to the police station, and a policeman was delegated to accompany such person to the home of the physician and also went with the physician to the home of the patient. When the physician had finished his visit, the policeman gave him an order on the prefect of police for 10 francs. It is almost needless to say that this mode of service was primitive. The fact of having accepted night service did not put the physician concerned under any obligations to stay at home nights in anticipation of a call; so that it often happened that the physician to whom the delegated policeman and the person in need of medical assistance went was not at home. It thus became necessary to call on another physician, who might also be away as was the first. In view of the weaknesses of the old system, an endeavor has been made to reorganize the service with the following two prerequisites as a basis: 1. It was realized that in order to make a night medical service effective it would be necessary that certain physicians should be "on call" during the entire night and ready to render service to any patients who were in urgent need of attention. 2. It was equally apparent that the service should be organized in such a manner that physicians could be summoned quickly and also be in a position to reach the patient promptly.

With these ideas in view, the old system by which the names of physicians, willing to do night service were inscribed in a special directory has been abolished, and a panel of physicians selected by a competitive examination and directly subject to the authority of the prefect of police has been established. These physicians so selected will serve for three years, at most, and will receive a fixed annual compensation of 3,000 francs. The city of Paris has been divided into five sections, in each of which a physician will be found (when not otherwise on duty) from 10 p. m. to 7 a. m., from October 1 to March 31, and from 10 p. m. to 6 a. m., from April 1 to September 30, at the disposal of patients who make request for medical service at night. The office of such physicians will be at a police station centrally located. A room with a bed will be provided, so that physicians will have the opportunity of resting, if they so desire, when not on active duty. A request for a physician is made at the nearest police station, which immediately communicates the request by telephone to the central police station. An automobile is sent to convey the physician to the residence of the patient and back to his post of duty. Each automobile used for this purpose is provided with a first-aid medical chest containing a small supply of drugs and surgical instruments. The night service is so organized that a physician is on duty only one night out of six. Each physician will therefore be on duty sixty nights a year, so that with 3,000 francs per year he will be receiving 50 francs for each night that he serves. This compensation is sufficient to secure the services of young physicians who have not an established practice as yet. The regulations provide that physicians serving on this panel shall be under 30 years of age, though former hospital interns may be up to 35.

Marriages

ALVAN LOTHAIK CHAPMAN, Hermanville, Miss., to Miss Mary Belle Hollingsworth of Crystal Springs, Miss., February 28.

JEROME J. ROBBINS, Gulfport, Fla., to Mrs. Elizabeth Tabor of Hubbardston, Mich., at Gulfport, recently.

ROBERT WILLIAM O'DONNELL, Monroe, La., to Miss Jennie May Conway of Shreveport, La., February 19.

G. C. McCURE, Ball Ground, Ga., to Miss Pearl Gober of Dawsonville, Ga., at Atlanta, February 25.

MYER NORMAN MOSKOVICH, St. Paul, to Miss Elizabeth Garfunkel of Philadelphia, January 5.

LYMAN JACKLIN SPALDING, New York City, to Miss Dorcas Parker of Bryan, Texas, recently.

Deaths

Louis Anatole LaGarde, Col., M. C., U. S. Army (retired); while returning from attendance at the meeting of the National Board of Medical Examiners in Chicago, was stricken with cerebral hemorrhage, March 7, and died just as the train was entering Pittsburgh. Colonel LaGarde was born in Bayou La Fourche, La., April 15, 1849, and after attending the Louisiana Military Academy, was graduated from Bellevue Hospital Medical College in 1872. After his internship in Roosevelt Hospital he entered the Army as contract surgeon in 1874, and served during the Sioux War. He received his appointment in the Army as first lieutenant and assistant surgeon, June 6, 1878, and then served on frontier duty for twenty years, during which time he was promoted to captain and major. In 1892 and 1893, he was detailed by the War Department to test the new rifle for the Army. During the war with Spain, he was in command of the divisional reserve hospital of the Fifth Army Corps at Siboney, Cuba, and was in charge of the evacuation of sick and wounded to northern hospitals, until he was stricken with yellow fever. Since 1899 he has been professor of military surgery in the University of the City of New York, and was also lecturer on gunshot wounds and ophthalmology in the Army Medical School from 1901 to 1902. In 1903 and 1904, Colonel LaGarde was made president of the board to determine the stopping power of bullets for pistols and revolvers with a view to a more effective service weapon. From 1904 to 1905, he was superintendent of the Ancon (Canal Zone) Hospital, and from 1905 to 1908, was the chief surgeon of the Department of the Visayas, Philippine Division, and while on this detail was made lieutenant-colonel and deputy surgeon-general. He was then made chief surgeon of the Department of Colorado, was promoted to Colonel, M. C., Jan. 1, 1910, and was retired by operation of law, on attaining the age of 64, April 15, 1913. Since that time Colonel LaGarde has been active as superintendent of the National Soldiers' Home, Washington, D. C., and as a member and treasurer of the National Board of Medical Examiners. He was recalled to active service during the World War, and in addition to his other duties delivered lectures on the medical reserve corps, and on military surgery at various medical colleges, throughout the country. He was an authority on ballistics, and his work on gunshot wounds was a standard textbook up to the time of the World War. He was a Fellow of the American Medical Association and in 1903 was a member of the House of Delegates representing the Army. He was also a charter member of the Association of Military Surgeons of the United States, and served for a time in 1918 as interim treasurer and editor of the *Military Surgeon*. Colonel LaGarde was a Southern gentleman of the old school, a charming companion and a most delightful personality.

Kenneth Alexander J. MacKenzie ☉ Portland, Ore.; McGill University, Montreal, 1881; aged 61; L.R.C.P. and L.R.C.S. (Edin), 1882; second vice president of the American Medical Association in 1905, a member of the House of Delegates in 1904, 1912 and 1913, and chairman of the committee of arrangements for the Portland meeting; a fellow of the American Surgical Association; president of the Portland Academy of Medicine in 1909 and 1910; once president of the Oregon State Medical Association, and Portland City and County Medical Society; captain, M. C., U. S. Army, and discharged, Jan. 31, 1919; aide to the governor of Oregon under the Selective Service Act; professor of theory and practice of medicine from 1887 to 1907, professor of operative and clinical surgery since 1917, and dean of the faculty of the University of Oregon since 1912; surgeon to St. Vincent's Hospital, Portland, since 1883; chief surgeon for Oregon and Washington of the Oregon Railroad and Navigation Company since 1895; a director of the United States National Bank; head of the relief corps of physicians and nurses at the time of the San Francisco fire and earthquake, and in charge of the Harbor View relief station; and medical director of the Lewis and Clarke Exposition; director of the Portland Free Dispensary; died, March 15, from heart disease following influenza.

Charles Knox Cole, Chelsea-on-Hudson, N. Y.; Miami Medical College, Cincinnati, 1879; aged 67; at one time president of A. Schrader's Son, Inc., Brooklyn, the largest manufacturers of submarine divers' apparatus in the world; founder and director of the Rocky Mountain Club in New

York City; for many years a prominent figure in Montana, where he was a member of the city council of Helena, president of the Montana Senate, president of the state board of examiners, and chief surgeon of the Montana Central Railway; president of the American Academy of Railway Surgeons in 1894, and secretary and treasurer of the American Association of State Examining and Licensing Boards in 1892; died in Pasadena, Calif., March 1.

William King Rogers ☉ Columbus, O.; University of the City of New York, 1889; aged 53; a member of the American Academy of Ophthalmology and Oto-Laryngology; American Ophthalmological Society, and American Otological Society; professor of otology in the Medical Department of the Ohio State University, Columbus, since 1900; attending surgeon to Mt. Carmel, and St. Francis hospitals, and consulting surgeon to the Children's Hospital, Columbus; formerly president of the Ohio State Board for the Relief and Benefit of the Needy Blind; died in Mt. Carmel Hospital, Columbus, February 27, from septicemia.

Herbert William Yemans ☉ Major, M. C., U. S. Army, Alcatraz, Calif.; Detroit, Mich., Medical College, 1878; aged 62; a member of the Association of Military Surgeons of the United States; an officer of the United States Marine Hospital Service from 1882 to 1887, and from 1892 to 1894; contract surgeon, U. S. Army since 1903; formerly a member of the council of the Manila Medical Society and Philippine Islands Medical Association; an expert on Esperanto; who was retired from the Army recently on account of physical disability; died at Fort Rosecrans, Calif., January 29.

George Clarke Ober, Washington, D. C.; Georgetown University, Washington, D. C., 1882; aged 59; a member, secretary, and once first vice president of the Medical Society of the District of Columbia; from 1891 to 1903 professor of materia medica and therapeutics and later of practice of medicine in the National University; for nine years secretary and later president of the District Board of Medical Examiners; formerly president and for four years secretary of the Board of Medical Supervisors for the District; died in Providence Hospital, February 25, from erysipelas.

Thomas Amory DeBlois, Boston; Dartmouth Medical School, Hanover, N. H., 1878; University of the City of New York, 1878; aged 72; a member of the Massachusetts Medical Society; a member and once vice president of the American Laryngological Association; a graduate of the United States Naval Academy in 1868; laryngologist and surgeon to the Boston City Hospital; instructor in laryngology at Harvard University Medical School; Lieutenant-Commander and Surgeon of the Naval Brigade, Massachusetts Volunteer Militia; died about February 29.

Joseph Eddy Clark, Utica, N. Y.; Harvard University Medical School; a member of the Medical Society of the State of New York and the Massachusetts Medical Society, 1882; a specialist in diseases of the nervous system; for twelve years in charge of the Vanderbilt Clinic, New York City; for several years chairman of the Board of Health of Medford, Mass.; since 1914, sanitary supervisor of the New York State Department of Health for Oneida, Herkimer and Madison counties; died in the Utica General Hospital, March 4.

Peter Lawrence Schenck, Brooklyn; College of Physicians and Surgeons in the City of New York, 1865; aged 76; a member of the Medical Society of the State of New York; a life member of the American Academy of Medicine; acting assistant surgeon U. S. Army during the Civil War; medical superintendent to Kings County Hospital from 1872 to 1881, and consulting surgeon to the institution from 1882 to 1914; visiting physician to the Kings County Penitentiary from 1889 to 1905; died March 6.

William Edwards, Bowdle, S. D.; College of Physicians and Surgeons, Keokuk, Ia., 1873; Northwestern University Medical School, Chicago, 1875; aged 70; a member of the South Dakota State Medical Association and a life member of the Mayo Surgeons' Club; president of the Board of Councillors of the State Medical Society; first mayor of Bowdle; state senator in 1892 and later a member of the state board of health; died, February 8, from carcinoma of the stomach.

Gustav Adolph Thiede, Baltimore; Maryland Medical College, Baltimore, 1901; aged 47; a member of the Medical and Chirurgical Faculty of Maryland; formerly health warden, and school inspector of Baltimore; for thirteen years assistant surgeon to the Presbyterian Eye, Ear and Throat Hospital; then for twelve years health warden of the city and later inspector for four years; died February 16.

☉ Indicates "Fellow" of the American Medical Association.

William Arthur Wade, Murray, Utah; St. Louis College of Physicians and Surgeons, 1888; aged 73; for many years a pharmacist and a member of the first state board of pharmacy; an examiner for the first medical board of Utah; formerly local surgeon to the San Pedro, Los Angeles, and Salt Lake and Rio Grande Western railroads; at Payson, Utah; died February 23.

George Turner Meacham, Taylorville, Ill.; Rush Medical College, 1893; aged 49; Lieutenant, M. R. C., U. S. Army, and discharged January 11, 1919; a member of the Illinois State Medical Society; formerly an alderman of Taylorville; died, March 8, from the effects of carbolic acid self-administered, it is believed, with suicidal intent, while despondent on account of ill health.

Silas Blaisdell Hull ☉ Asst. Surg., Lieut., M. C., U. S. Navy, Brooklyn, N. Y.; Long Island College Hospital, Brooklyn, 1916; aged 24; who served for two years in foreign waters in the mine sweeping service; a member of the Association of Military Surgeons of the United States; physician for the National Bank of Commerce, Brooklyn; died, March 6, from encephalitis.

Albert F. Koetter ☉ St. Louis; Missouri Medical College, St. Louis, 1892; aged 48; a member of the American Otological Society; instructor in otology in Washington University and chief of the ear clinic of O'Fallon Dispensary; aurist to the Evangelical Deaconess Hospital; once president of the St. Louis Medical Society; died in Barnes Hospital, St. Louis, February 28.

Samuel Richard Guthrie, Franklin, Ky.; Vanderbilt University, Nashville, Tenn., 1913; aged 32; a member of the Kentucky State Medical Association; Captain M. R. C., U. S. Army, with service in the British Army from 1917 until the close of the World War; and discharged July 9, 1919; died at the home of his parents in Franklin, February 21, from pneumonia.

Flavel Shurtleff, Pekin, Ill.; Rush Medical College, 1865; aged 78; assistant surgeon of U. S. Volunteers during the Civil War; from 1877 to 1891 county clerk of Tazewell; for twenty years one of the publishers of the *Pekin Times*; vice president of the Farmers National Bank for many years and a director in the Herget National Bank, Pekin; died February 24.

Henry A. Newbold, Philadelphia; University of Pennsylvania, Philadelphia, 1893; aged 74; demonstrator of practical pharmacy in the University of Pennsylvania; assistant in nervous diseases in the University and Polyclinic hospitals; a committing physician for the psychopathic ward of the Philadelphia Hospital; died, March 3, from arteriosclerosis.

Charles Philip Henry, Philadelphia; University of Pennsylvania, Philadelphia, 1882; aged 59; assistant surgeon, U. S. Navy, and retired Dec. 20, 1889, on account of incapacity resulting from an incident of service; a noted linguist; head of the Latin department of the Catholic High School for Boys, Philadelphia; died, February 26, from pneumonia.

Hosea Ballou Burnham, Manchester, N. H.; Vermont Medical College, Woodstock, 1853; aged 90; a member of the New Hampshire Medical Society; formerly consulting physician to the Elliot Hospital, Manchester, and physician to Rockingham County House of Correction and Insane Asylum; died February 29.

Alique C. Matchette, Bourbon, Ind.; Northwestern University Medical School, Chicago, 1863; aged 82; surgeon of United States Volunteers during the Civil War, and chief surgeon of the military division of West Tennessee; secretary of the local board of health for twenty-five years; died February 16.

William Alhanan Smith, Springfield, O.; Cincinnati College of Medicine and Surgery, 1877; Bellevue Hospital Medical College, 1883; aged 68; a member of the Ohio State Medical Association; a member of the medical staff of the Springfield City Hospital; died, February 25, from heart disease.

Charles Edgar Blanton, New Market, Ala.; Vanderbilt University, Nashville, Tenn., 1882; aged 66; a member of the Medical Association of the State of Alabama; for several terms president of the Madison County Medical Society; died, February 20, from pneumonia.

Walter H. Parcels, Lewistown, Pa.; Medical College of Ohio, Cincinnati, 1873; aged 71; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War; twice representative in the state legislature from Mifflin County; died February 2.

Albert D. Marks, La Mesa, Calif.; College of Physicians and Surgeons, Baltimore, 1885; aged 69; died, February 18, from the effects of a stab wound of the heart believed to have been self-inflicted with suicidal intent, while despondent on account of ill health.

William Allen Deas, Richmond, Va.; Medical College of Virginia, Richmond, 1879; aged 85; a member of the Medical Society of Virginia; formerly coroner of Henrico County, and physician at the Soldiers' Home; died in Williamsburg, Va., February 17.

Henry Leo Keyes Carey, New York City; Eclectic Medical College of the City of New York, 1894; Bellevue Hospital Medical College, 1897; aged 52; for fifteen years examining physician for tuberculosis in the Department of Charities; died March 6.

Willis W. Munson, Otisco, N. Y.; George Washington University, Washington, D. C., 1869; aged 79; a veteran of the Civil War; once president of the Onondaga County Medical Society; died in the Soldiers' Home, Bath, N. Y., February 28.

H. A. Moorman, Owenboro, Ky.; Louisville, Ky., Medical College, 1889; aged 76; a member of the Kentucky State Medical Association; for many years president of the Sacramento, Ky., Deposit Bank; died, February 24, from heart disease.

John W. Dulaney, Greenwood, Miss.; Tulane University, New Orleans, 1873; aged 73; a member of the Mississippi State Medical Association; died in St. Joseph's Hospital, Memphis, Tenn., March 2, after an operation for appendicitis.

Thomas Elwood Taylor ☉ Denver; University of Michigan, Ann Arbor, 1879; aged 64; professor of obstetrics in the University of Colorado, Denver and Boulder, and later emeritus professor; died, February 2, from cerebral hemorrhage.

Leonard Frederick Schmauss ☉ Alexandria, Ind.; Rush Medical College, 1897; aged 52; while driving his automobile across the Big Four tracks, two miles north of Alexandria, February 27, was struck by a train and instantly killed.

Samuel B. Flynt, Meridian, Miss.; Memphis, Tenn., Hospital Medical College, 1898; aged 57; died in a hospital at El Paso, Tex., February 14, from injuries received in an automobile accident near Newman, N. M.

John M. Fitzgerald ☉ Clarion, Pa.; Western Reserve University, Cleveland, 1872; aged 71; once treasurer of the Clarion County Medical Society; died, February 27, from pneumonia following influenza.

Samuel Hunt, Jr., ☉ Knoxville, Tenn.; Vanderbilt University, Nashville, Tenn., 1914; aged 29; Lieutenant M. R. C., U. S. Army, with service in France, and discharged May 4, 1919; died February 23.

Charles John McGuire, Altura, Minn.; University of Illinois, Chicago, 1902; First Lieutenant, M. R. C., U. S. Army, and discharged August 9, 1919; died, February 25, from cerebral hemorrhage.

Elisha H. Coombs, Morgantown, W. Va.; Hahnemann Medical College, Philadelphia, 1860; aged 84; president of the Monongahela Valley Bank, Morgantown; died about February 19.

William Brown Maney, Nashville, Tenn.; University of Nashville, Tenn., 1856; aged 85; chief surgeon of the First Tennessee Infantry, C. S. A., during the Civil War; died February 22.

John B. Draper, Oswego, Kan.; Rush Medical College, 1868; aged 77; formerly surgeon of the State Soldiers' Home, Fort Dodge; a veteran of the Civil War; died about February 25.

Thomas R. Plumer, Farmington, Ill.; (license, years of practice, Illinois, 1873); a member of the Illinois State Medical Society; a practitioner for sixty years; died about March 1.

Charles Edwin Bleakley, Detroit; Michigan College of Medicine and Surgery, Detroit, 1889; aged 63; also a graduate of the Ontario College of Pharmacy; died February 25.

Edward Remson Seasongood ☉ Naper, Neb.; John A. Creighton Medical College, Omaha, 1910; aged 34; also a graduate in pharmacy; died, February 27, from pneumonia.

John Campbell Brewer, Lytton Springs, Tex.; Medical College of Georgia, Augusta, 1871; aged 72; a member of the State Medical Association of Texas; died February 3.

James F. Harris ☉ Ogden, Ill.; Kentucky School of Medicine, Louisville, 1877; aged 67; a member of the Illinois State Medical Society; died, February 28, from influenza.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

MORE MISBRANDED DRUGS

Boericke & Runyon Tablets.—In September, 1917, Edward A. Runyon, New York City, who traded as Boericke & Runyon, shipped some tablets in interstate commerce that were adulterated and misbranded. "Santonin and Calomel Tablets," labeled as containing $\frac{1}{2}$ grain each of santonin and calomel to each tablet, were found, in fact, to have approximately only 0.402 grain santonin and 0.352 grain calomel to each tablet. "Acetanilid and Quinine Compound Tablets," labeled as containing $\frac{1}{4}$ grain caffein citrate and 1 grain of quinin sulphate in each tablet, were found to contain approximately only 0.201 grain caffein citrate and 0.842 grain quinin sulphate. Some 5 grain "Aspirin Tablets" were found on examination to contain no aspirin at all but to be composed of salicylic acid, milk sugar and talc. "Kali Hydroid Tablets" (potassium iodid) declared to have 1 grain of potassium iodid to each tablet, were found to have in fact only 0.566 grain potassium iodid. Some $\frac{1}{4}$ grain "Morphin Sulphate Tablets" contained in fact approximately only 0.071 grain morphin sulphate to each tablet. Runyon pleaded guilty to the charges of adulteration and misbranding and was fined \$25.—[*Notice of Judgment No. 6551; issued Feb. 21, 1920.*]

Sulferro-Sol.—Sulferro-Sol, fourteen cases of which were alleged to have been shipped in February, 1918, by the Sulferro-Sol Co., Inc., Birmingham, Ala., was declared misbranded by the federal officials. It was charged that the claims made for the product "falsely and fraudulently represented it as a remedy for pellagra, dyspepsia, indigestion, anemia, chronic abscesses, and all forms of stomach, kidney, skin, blood and nervous troubles; whereas, in truth and in fact it was not." No claimant appearing for the property, the court ordered it condemned and forfeited and instructed that the stuff itself should be destroyed while the empty containers should be sold at public auction.—[*Notice of Judgment No. 6564; issued Feb. 21, 1920.*]

Santal Pepsin Capsules.—Augustus R. Kaylor and Clara J. Sadd, Bellefontaine, Ohio, who did business under the trade name Santal Pepsin Co., shipped in interstate commerce a quantity of "Santal Pepsin Capsules" in May, 1917. When analyzed by the Bureau of Chemistry these were found to consist of soft gelatin capsules containing about 10 grains of a mixture of santal oil, methyl salicylate, salol and a tablet containing pepsin. It was falsely and fraudulently claimed on the trade packages that the preparation was a specific for all kidney and bladder troubles, gonorrhea, gleet, inflammation of the ovaries, rheumatism, Bright's disease and a number of other conditions. In November, 1918, Kaylor and Sadd pleaded guilty and were fined \$175 and costs.—[*Notice of Judgment No. 6569; issued Feb. 21, 1920.*]

Principles of Hygiene.—One of the main principles of hygiene is to bring about a consistent common-sense observance by individuals and communities of cleanly methods of living to prevent the erupted matter from the bodies of infected persons from being conveyed to and becoming "dangerous dirt" in the bodies of other persons. Another important matter is the establishment and maintenance of conditions in respect to air, water, food, exercise, and sleep, which tend to fortify individuals with vigorous health and the power to overcome invasion of the body by "dangerous dirt."—L. L. Lumsden, "Rural Hygiene," *Public Health Rep.*, Nov. 7, 1919.

Correspondence

THE NATIONAL FORMULARY, USEFUL DRUGS, AND THE COMING REVISION OF THE PHARMACOPEIA

By the federal Food and Drugs Act and by state acts, two books are made the official or legal standards for drugs and their preparations, namely, the Pharmacopeia and the National Formulary. The Pharmacopeia does not standardize all drugs and preparations. On the contrary, it is highly selective; and while at each decennial revision it has admitted some new and approved remedies and their preparations, it has also sought to eliminate from its pages those remedies that have failed to combine both worth and extensive employment. In the last revision it gained much by eliminating many of those preparations, formerly so much in vogue, that had a shotgun make-up or were combinations which forbade simplicity in prescribing.

The National Formulary, revised and issued by the American Pharmaceutical Association, is in a sense supplementary to the Pharmacopeia, for its drugs and preparations are those which have been discarded from the Pharmacopeia in the different revisions, together with some other compound preparations which are frequently prescribed or are extensively called for by the laity. In a large measure it is a book of convenience for the pharmacist, enabling him to furnish preparations of definite strength and uniformity for those physicians who still prescribe the discarded formulas of the Pharmacopeia or stick to the old-fashioned galenicals. In addition, since it can be depended on to some extent as a standardizer for the discards of the pharmacopeial revision, it gives added freedom to the pharmacopeial revisers in their design to exclude preparations not fully approved, even though much used.

As these two books are the legal or official standards, their drugs and preparations can be obtained of definite strength and uniformity of manufacture throughout the United States. It follows, then, that their preparations should be the ones preferred in prescribing. But who would care to memorize the Pharmacopeia or the National Formulary? It would be a waste of time and energy, for nearly all the matter in both books relates to tests for purity and identity, and the technic of manufacture. This is material for the supply houses and the pharmacists, to enable them to select drugs of high quality, and to manufacture preparations of uniformity. All that the physician needs out of the official books is the names of the substances standardized, and the strengths of approved preparations. He does not require either the National Formulary or the Pharmacopeia. But he does require some book that from the vast amount of matter embodied in the Pharmacopeia and the National Formulary furnishes him with the names of such drugs and the strengths of such preparations as he may need for intelligent prescribing. He also requires a book so constituted that it will permit of frequent revision, and thus include remedies recently introduced to the profession and not yet adopted by the Pharmacopeia.

Such a book is "Useful Drugs," published by the Council on Pharmacy and Chemistry of the American Medical Association. It is of pocket size, gives the names and strengths of approved official preparations, and includes some drugs and preparations of recent introduction that are not official. In addition, it gives brief summaries of the actions and uses of all the drugs of which it treats, with their properties, incompatibles and doses. It is essentially a selective compendium and should, for the present at least, be the practitioner's Pharmacopeia. Without in any way intending to speak disparagingly of the Pharmacopeia or the National Formulary, I believe that "Useful Drugs" is the best book for the physician. But it has no control over standards and must depend for these almost wholly on the Pharmacopeia. Hence a proper revision of the Pharmacopeia is of the greatest interest and importance to us.

The Pharmacopeial Revision Convention meets in Washington in May of this year. It is made up of delegates

from the medical and pharmaceutical colleges, the state and national medical and pharmaceutical societies, and certain other selected societies, and the Army, Navy and Public Health services. Its function is to determine the principles which shall govern the next revision of the Pharmacopeia, and to elect officers and a Committee of Revision. As we physicians are the ones to prescribe the drugs and preparations of the Pharmacopeia, it is beyond cavil our function to exert ourselves and make certain that the principles adopted shall suit us, and that the revision committee elected shall be in sympathy with our desires. To accomplish this the first thing to do is to see to it that every medical college and every medical society selects interested delegates to the convention, and pledges them to attend the convention. If this is done we need not fear for the result.

I would suggest that when we meet in the convention, we should stand together for two demands: 1. That it is the right of the prescribers of drugs as represented by the medical delegates to the convention to say what drugs and what preparations are to be considered by the Committee of Revision. This done, we can safely leave the methods of manufacture and the tests and other matters to the pharmaceutical, chemical and other delegates. 2. That every means be employed to abolish dilatory methods in the revision, so that we shall not again, as in the last revision, have the amazing lapse of more than six years between the meeting of the convention and the establishment of the revised book as the official Pharmacopeia.

For details of changes to be urged I would suggest:

1. That glandular drugs and their pure principles be introduced as far as possible, e. g., epinephrin, corpus luteum, ovarian extract, etc.

2. That the name of each alkaloidal salt be accompanied by a statement of its percentage of pure alkaloid. For example, quinin tannate contains only 30 to 35 per cent. of quinin, and morphin sulphate contains only three-fourths its weight of morphin.

3. That drugs and preparations which do not combine decided worth with use be dropped. A tentative list of such is: acetum scillae, acidum stearicum, althaea, aqua creosoti, arnica, calcium bromid, calcium hypophosphite, chondrus, cinicifuga, emulsum asafetidae, eriodictyon, guaiac, guarana, humulus, liquor iodi compositus, manna, matricaria, mel, mel depuratum, mel rosae, mezereum, mistura glycyrrhizae composita, oleatum hydrargyri, pepo, petroselinum, pyrethrum, sabal, sinapis alba, stillingia, syrupus hypophosphitum, taraxacum, trituratio elaterini (not elaterinum itself; elaterin can be prescribed without an official dilution quite as well as any of the potent alkaloids), trochischus sodii bicarbonatis, unguentum hydrargyri nitratis, xanthoxylum, zinci sulphocarbolas, zincum, and all oleoresins except that of aspidium. Substances of pharmaceutical value only, such as stearic acid, althaea and honey, should not cumber the body of the book. It is to be borne in mind that most of the substances dropped will still find a place for standardization in the National Formulary, and will therefore continue to be available in standardized form for those who wish them. But they should not receive the recognition of a highly scientific and exclusive book such as we desire our Pharmacopeia to be.

4. That all fluidextracts with dose below 5 minims be dropped, and if necessary replaced by a 10 per cent. tincture. It is agreed that many fluidextracts, because of their concentration, cannot be made to hold all the active principles of the drug from which they are made, and that they are subject to material changes of strength from precipitation or evaporation. The requirement of assayed strength does not change these facts. It has been shown repeatedly that the average fluidextract of digitalis is not ten times as strong as the tincture, as it should be, but perhaps only about three times as strong! With potent drugs this is a serious matter.

5. That newly introduced chemical substances of proved worth be included. It is a crying shame that our Pharmacopeia does not yet recognize solution of epinephrin (adrenalin) chlorid, argyrol, acetylsalicylic acid, arsphenamin, etc. Even though they are patented preparations they should be

given some recognition, the Pharmacopeia stating that they are patented and giving the time of expiration of the patent.

6. That the genitive of all titles be appended. How many of us, for example, in prescribing milk of magnesia, know that in a prescription the official preparation should be written "Magmatis magnesiae" and not "Magmae magnesiae"?

7. That whisky and brandy be restored. With our new prohibition laws these medicinal liquids will be as precious as potent tinctures, and will need standards if they never did before.

I make these suggestions for the medical delegates, and urge that we take our next month's pharmacopeial convention seriously. For the sake of the best medical practice, all medical colleges, all state medical associations, and any other medical body which has the privilege of sending delegates to next year's pharmacopeial convention should appoint these without delay and see to it that they attend the convention with some understanding of their responsibilities.

W. A. BASTEDO, M.D., New York.

Fifth Vice President, U. S. Pharmacopeial
Convention of 1920; Assistant Professor
of Clinical Medicine, Columbia Univer-
sity College of Physicians and Surgeons.

STOLEN SURGICAL INSTRUMENTS

To the Editor:—Two bags of instruments, dressings, etc., and a small mahogany clock were stolen from my office three weeks ago. I have recovered one of the bags with many instruments, but they are not mine. It seems that somebody is gathering these for resale. I would suggest that if second-hand instruments are offered to any physician for sale, he should appear to be too busy to pass judgment at the time, regardless of the story told, but ask the person to return in an hour or two, and, retaining the instruments, in the meantime call an officer: all this, of course, to be modified according to circumstances. Perhaps a central reporting place for lost and found instruments would discourage theft. The owner of the instruments that I have may obtain them by calling at my office.

WILLARD MANFORT, M.D., Detroit.

LEPROSY IN THE AGED

To the Editor:—I have before me the issue of THE JOURNAL for Nov. 15, 1919. In the second column on page 1547 appears: "DR. H. R. CARTER, Baltimore: There is good reason to believe that leprosy is *rarely* or *never* communicated to elderly persons. In taking care of lepers I would suggest that elderly nurses be employed, as the risk of such people contracting the disease is *absolutely nil*."

The italics are mine. Probably most workers among lepers would agree with a general statement to the effect that elderly persons are less likely to become infected with the disease than are young persons. Perhaps the speaker only wished to make his idea stick in the minds of his hearers by making it overstrong; but I want to protest against the use of the words that I have italicized, as being likely to mislead our confrères in America.

Having seen the usual number of cases of leprosy that come to medical missionaries here, during thirty years' residence in Foochow, where leprosy is a very common disease, I cannot refrain from saying that such experience quite contradicts the very positive statements made above. Just recently an old Bible woman that has been working among lepers here for years, a woman who was very careful about her contacts with them, who was unusually cleanly in every way, has developed the disease. Her contact with the lepers could not have been as intimate as that of persons caring for such cases, for that was not her duty at all, and the years that she had been engaged in the work might have seemed to justify a statement almost as strong as the one to which I object; but there is no doubt that the woman is now infected. Other cases have come to my attention in the past, but this is the latest one and answers, as well as any

number, to emphasize the point that I make. Elderly persons may and do contract leprosy, though they are probably less likely to do so than younger persons.

H. N. KINNEAR, M.D., Foochow, China.

INTERNATIONAL COMMITTEE OF THE RED CROSS OF GENEVA, AND THE LEAGUE OF RED CROSS SOCIETIES

To the Editor:—My attention has been called to an article in THE JOURNAL, Jan. 31, 1920, p. 334, concerning the coming meeting of the General Council of the League of Red Cross Societies. A confusion exists in the mind of the writer of this article between the International Committee of the Red Cross of Geneva and the League of Red Cross Societies, which also has its headquarters in Geneva. These two institutions are entirely distinct, and there is no official connection between them. The International Committee of the Red Cross of Geneva is composed of seventeen citizens of Switzerland, and has been in existence since the founding of the Red Cross by Henri Dunant in 1863. During the war the International Committee of the Red Cross of Geneva served as intermediary for the exchange of prisoners. The League of Red Cross Societies is constituted by thirty national Red Cross Societies, as follows: Argentina, Australia, Belgium, Brazil, Canada, China, Cuba, Czechoslovakia, Denmark, France, Great Britain, Greece, Holland, India, Italy, Japan, New Zealand, Norway, Peru, Poland, Portugal, Roumania, Serbia, South Africa, Spain, Sweden, Switzerland, the United States, Uruguay and Venezuela.

WILLIAM R. HEREFORD, Geneva, Switzerland.
Director, Department of Publicity and Publication, League of Red Cross Societies.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOOKS AND PERIODICALS ON OTORHINOLARYNGOLOGY

To the Editor:—1. I intend specializing in the ear, nose and throat. What textbooks do you advise me to get on these subjects?

2. Is there an atlas of anatomy, pathology or surgery (of one, two or all three) published of the ear, nose and throat?

3. Who publishes "The Nose and Throat in Medical History," by Jonathan Wright?

4. Is there a book published containing the biographies of the great men in medicine or "Who's Who" in medicine?

5. What journals on otology, rhinology and laryngology would you advise me to subscribe to?

6. Who publishes the British Journal of Otology, Rhinology and Laryngology?

M. L. SOWERS, M.D., Allston, Mass.

ANSWER.—

1. Packard: Nose, Throat and Ear, Philadelphia, J. B. Lippincott Company, \$4.

Ballenger: Ear, Nose and Throat, Philadelphia, Lea & Febiger, \$5.50.

Kyle: Nose and Throat, Philadelphia, W. B. Saunders, \$5.

2. Krieg: Atlas of Diseases of Nose, New York, Paul B. Hoeber, \$12.

3. Wright: Nose and Throat in Medical History, St. Louis, L. S. Matthews, \$2.

Wright: History of Laryngology, Philadelphia, Lea & Febiger, \$4.

4. Garrison: History of Medicine, Philadelphia, W. B. Saunders Company, \$7.50.

Medical men are also included in the ordinary editions of "Who's Who."

5. The following journals are published in America:

Annals of Otology, Rhinology and Laryngology, Jones H. Parker, Mermod-Jaccard Bldg., St. Louis, \$6.

Laryngoscope, 3858 Westminster Place, St. Louis, \$6.

6. The British Journal of Otology, Rhinology and Laryngology, published by Adlard & Son and West Newman, Ltd., Bartholomew Close, London, E. C. N., £1.

Good Health.—Euphonious definitions of good health are numerous. Clear conceptions of good health are rare. It is easy to define; difficult to conceive.—W. S. Rankin, Tr. Assn. Life Ins. Presidents, 1919.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Hardenstein, 702 Machesa Bldg., New Orleans.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

New York May and June Examination

Mr. Herbert J. Hamilton, assistant, professional examinations, New York State Board of Medical Examiners, reports the written examinations held at New York City, Buffalo, Syracuse and Albany, May 21-24 and June 25-28, 1919. The examination covered 8 subjects and included 10 questions. An average of 75 per cent. was required to pass. Of the 384 candidates examined, 306, including 2 osteopaths, passed, and 78, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Leland Stanford Junior University	(1917)		1
George Washington University	(1916)		1
Rush Medical College	(1915)		1
University of Illinois	(1919)		1
Tulane University	(1914)		1
Johns Hopkins University	(1914), (1915), (1916), (1919)		4
College of Physicians and Surgeons, Baltimore	(1913)		1
Harvard University	(1910, 2), (1913), (1918), (1919, 2)		6
Tufts College Medical School	(1913), (1918, 3)		4
University of Michigan Medical School	(1918), (1919, 2)		3
Albany Medical College	(1917), (1919, 11)		12
Columbia Univ.	(1914), (1915), (1917, 5), (1918, 7), (1919, 36)		50
Cornell University	(1917), (1918, 4), (1919, 12)		17
Fordham University	(1914), (1916), (1917), (1918, 2), (1919, 7)		12
Long Island College Hospital	(1917, 2) (1918, 4), (1919, 38)		44
New York Homeo. Med. College and Flower Hospital	(1915), (1916, 3), (1917, 5), (1918, 6), (1919, 13)		28
Syracuse University	(1919)		19
University and Bellevue Hospital Medical College	(1917), (1918, 4), (1919, 29)		34
University of Buffalo	(1917, 2), (1918, 2), (1919, 37)		41
University of Oklahoma	(1918)		1
Jefferson Medical College	(1915), (1917), (1919)		3
University of Pennsylvania	(1908), (1913), (1918, 3)		5
Woman's Med. Coll. of Penna.	(1913), (1915), (1919)		3
University of Tennessee	(1917)		1
Vanderbilt University	(1912)		1
University of Vermont	(1915), (1917), (1918, 2)		4
University of Virginia	(1916)		1
Queen's University	(1910), (1918), (1919)		3
University of Toronto	(1915), (1918)		2
FAILED			
Georgetown University	(1917)		1
Howard University	(1916), (1918, 2)		3
Chicago College of Med. and Surg.	(1914)		1
College of Phys. and Surgs. Chicago	(1902)		1
Rush Medical College	(1895)		1
Kansas Medical College	(1903)		1
University of Louisville	(1908)		1
College of Physicians and Surgeons, Baltimore	(1912)		1
University of Maryland	(1917)		3
Harvard University	(1908), (1918, 2)		3
Tufts College Medical School	(1917, 3), (1919)		4
University of Michigan Homeopathic Medical School	(1918)		1
Albany Medical College	(1909), (1914)		2
Columbia University	(1919)		3
Cornell University	(1917), (1919)		2
Fordham University	(1912), (1913), (1916, 2), (1918)		5
Long Island College Hospital	(1917), (1919, 4)		5
New York Homeopathic Medical College and Flower Hospital	(1915, 3), (1916, 5), (1917), (1918, 7)		16
New York Medical College and Hospital for Women	(1917)		1
University and Bellevue Hospital Med. Coll.	(1915), (1919)		2
Eclectic Medical College	(1916)		1
Jefferson Medical College	(1899), (1914), (1916)		3
Medico-Chirurgical College of Philadelphia	(1916)		1

University of Pennsylvania	(1918)	1
Vanderbilt University	(1910), (1917)	2
University of Vermont	(1901), (1916), (1918)	3
Medical College of Virginia	(1914), (1915), 2)	3
Queen's University	(1904), (1916), (1918)	3
McGill University	(1917)	1
University of Bologna	(1912)	1
University of Berne	(1910)	1

Mr. Hamilton also reports that between May 1 and Nov. 17, 1919, 62 candidates were licensed by endorsement of their credentials. Of these, 5 were granted reregistration licenses, 28 were granted licenses by reciprocity with other states, 8 were licensed by endorsement of their diplomas, and 21 by endorsement of their licenses on the basis of eminence and authority in the profession. Of those licensed by reciprocity and endorsement of credentials, the following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....		(1912)	Wisconsin
Columbia University		(1915)	Virginia
New York Homeo. Med. Coll. and Flower Hosp.....		(1917)	Delaware
Univ. and Bellevue Hosp. Med. Coll.....		(1913), (1915)	New Jersey
College of Physicians and Surgeons, Baltimore.....		(1907)	Ohio
Johns Hopkins University		(1916)	New Jersey
Harvard University		(1915)	Wisconsin
Eclectic Medical Institute		(1905)	Ohio
Western Reserve Univ. (1910), (1912), (1913, 2)		(1916)	Ohio
Jefferson Medical College		(1915)	New Jersey
Woman's Med. Coll. of Pennsylvania		(1908)	New Jersey
University of Nashville		(1909)	Virginia
University of Vermont		(1914)	Virginia
Medical College of Virginia		(1913), (1914)	Virginia
Univ. Coll. of Med. Richmond ..		(1902), (1909), (1911)	Virginia
University of Virginia		(1914)	Virginia
Milwaukee Medical College		(1912)	Wisconsin
National University, Athens....		(1898) New Jersey, (1909)	Ohio
University of Naples		(1908)	New Jersey

College	ENDORSEMENT OF DIPLOMAS	Year Grad.
Harvard University		(1892)
Bellevue Hospital Medical College		(1875), (1886)
University of the City of New York.....		(1886)
Woman's Medical College of the New York Infirmary for Women and Children		(1891)
Jefferson Medical College		(1876), (1891)
University of Turin		(1892)

College	ENDORSEMENT OF LICENSES	Year Grad.	Endorsement with
Yale University		(1912)	Connecticut
Georgetown University		(1905), (1909)	Dist. Colum.
Northwestern University		(1898)	Louisiana
Drake University		(1909)	Iowa
University of Louisville		(1910), (1913)	Kentucky
Tulane University		(1904)	Alabama
University of Maryland		(1910)	Penna.
University of Michigan Homeo. Med. School.....		(1914)	Michigan
University of Michigan Medical School		(1912)	Michigan
University of Minnesota		(1914)	Minnesota
John A. Creighton Medical College.....		(1895)	Missouri
Albany Medical College		(1893)	Vermont
Hahnemann Med. Coll. and Hosp. of Phila.....		(1899)	Connecticut
Jefferson Medical College		(1894)	Mass.
Vanderbilt University		(1902)	Oklahoma
University of Vermont		(1894), (1905)	Vermont
McGill University		(1899)	Quebec
University of Central Spain		(1897)*	Porto Rico

*License not verified.

Maine November Examination

Dr. Frank W. Searle, secretary of the Maine State Board of Registration in Medicine, reports the written examination held at Portland, Nov. 12-13, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 11 candidates examined, 9 passed and 2 failed. Three candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Medical School of Maine		(1883)	82
Johns Hopkins University		(1900)	82
Tufts College Medical School		(1919)	80
Columbia University		(1913)	86
University and Bellevue Hospital Medical College ..		(1910)	84
Jefferson Medical College		(1914)	89
University of Vermont		(1917)	79
Laval University		(1919)	78
McGill University		(1917)	79
FAILED			
Tufts College Medical School		(1919)*	78
Montreal School of Medicine and Surgery.....		(1919)*	76

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Starling Medical College		(1897)	Ohio
Boston University		(1915)	New Hamp.
University of Maryland		(1917)	S. Carolina

* Fell below sixty in one branch.

Book Notices

LES LÉSIONS DES NERFS: TRAITEMENT ET RESTAURATION. Par Mme. Athanassio-Benisty, Ancien Interne des Hôpitaux de Paris. Paper. Price, 7 francs net. Pp. 156, with illustrations. Paris: Masson et Cie, 1919.

In this small volume, Mme. Athanassio-Benisty presents much that was included in the second volume of her work on peripheral nerves as it appeared in the Horizon Collection and in the English translation in the Medical War Manuals. The subject-matter has been brought up to date, particularly with reference to the surgical treatment, the prognosis, medicomilitary decisions, and the important work of Dustin on intraneural localization. Each of the chapters constitutes a comprehensive and adequate review of the author's wide experience and the recent literature. The description of the signs of restoration of function in peripheral nerve lesions is exhaustively treated, and at this time will be found of great value to American neurologists and surgeons who are following the results obtained in the treatment of injuries of peripheral nerves in the late war. The observations are in accord with the experience of the reviewer, but do not seem to be entirely in accord with the theories of Head, Rivers and others relative to the return of sensation, although an attempt is made to fit the clinical findings to their theory. In this volume, as in the preceding publications, there is an exhaustive description of orthopedic apparatus, which is preeminently applicable at this time in our treatment of lesions of the peripheral nerves.

THE URETHROSCOPE IN THE DIAGNOSIS AND TREATMENT OF URETHRITIS. By Major N. P. L. Lumb, O.B.E., R.A.M.C. Cloth. Price, \$2.75. Pp. 51, with 40 illustrations. New York: William Wood and Company, 1919.

The author asserts that he derived the incentive for writing this booklet from the fact that in no work that has come to his notice has an attempt been made to show the effect of treatment on the lesions of urethritis which can be observed with the urethroscope. Authors of special textbooks on this subject will regret that their work has been thus unnoticed. The illustrations, though somewhat schematic and considerably magnifying the natural size of the field of view, come up to a fair standard. Inflammatory granulomas, so often observed, and known as maintaining obstinate gonorrheal inflammation, have not found a place in this treatise. Many urologists will be surprised at the author's assertion that it is usually possible to clear up a prostatic abscess by massage and general treatment. Inaccuracies in the text, as "the vascular striation is seen to best advantage in this region and consequently any abrasion of the surface . . . leads to considerable bleeding" (page 7), or, as in the discussion of gonorrheal epididymitis, "when the testicle has settled down" (page 47), should not occur in a treatise that pretends to be the last word in systematic treatment of gonorrhea.

EXPERIMENTAL PHARMACOLOGY. By Hugh McGuigan, Ph.D., M.D., Professor of Pharmacology in the University of Illinois, College of Medicine. Cloth. Price, \$2.75. Pp. 251 with 63 illustrations. Philadelphia: Lea & Febiger, 1919.

A period of relative stagnation in the production of works on experimental pharmacology has been replaced by one of relative productivity. Within the last few years a number of commendable texts have either been thoroughly revised or written anew. Most of them have been overwhelmingly personal, so that it is gratifying to find one in which "no claim to originality is made." Rather an effort has been made to include standard exercises. To a certain extent this book is a synopsis of drug action on various anatomic systems. It is sufficiently brief so that the student is not robbed of the opportunity to display his originality. It is a fairly satisfactory guide in his work. One regrets that the proof-reading was not done with greater care. For example, the careful student may be mystified by the "apparatus for anesthesia by intracranial insufflation" (p. 33).

KOMPENDIUM DER TOPISCHEN GEHIRN UND RÜCKENMARKSDIAGNOSTIK. Kurzgefasste Anleitung zur klinischen Lokalisation der Erkrankungen und Verletzungen der Nervenzentren. Robert Bing, a.o. Professor an der Universität Basel. Vierte, neu durchgesehene Auflage. Mit 97 zum Teil mehrfarbigen Abbildungen.

The author states that this edition is practically a replica of the third, such a short time having elapsed between the two. The book remains, then, what it was: first, an excellent outline of the essentials of the structural anatomy and applied physiology of the central nervous system; secondly, a rather full summary of localizing diagnosis of lesions of cord, brain stem, cerebrum and cerebellum. Fully to cover the subject and at the same time make every part of the text clear to the tyro is impossible. The author's attempt is quite as successful as one could expect. The internist and surgeon generally will find what they are looking for, and the neurologist may here quickly pick up some strand dropped from memory's thread. The illustrations are well chosen and easily understood, and the index is adequate.

Medicolegal

Validity of Law Relative to Disfigurement

(*New York Cent. R. Co. v. Bianc (U. S.), 40 Sup. Ct. R. 44*)

The Supreme Court of the United States holds constitutional the provision of the workmen's compensation act of the state of New York that, in case of an injury resulting in serious facial or head disfigurement, the state industrial commission may in its discretion make such award or compensation as it may deem proper and equitable in view of the nature of the disfigurement, but not to exceed \$3,500. The court says that the sole contention here was that this provision deprived the employer of property without due process of law, in contravention of the fourteenth amendment of the constitution of the United States. The argument was that an award for disfigurement, made wholly independent of the claimant's inability to work, was not based on impairment of earning power; that only such impairment could justify imposing on an employer without fault compulsory payment by way of compensation to an injured workman; and hence that the disfigurement clause was not a reasonable exercise of the police power, but was arbitrary and oppressive. But even were impairment of earning power the sole justification for imposing compulsory payment of workmen's compensation on the employer in such cases, it would be sufficient answer to the present contention to say that a serious disfigurement of the face or head reasonably may be regarded as having a direct relation to the injured person's earning power, irrespective of its effect on his mere capacity for work. Under ordinary conditions of life, a serious and unnatural disfigurement of the face or head very probably may have a harmful effect on the ability of the injured person to obtain or retain employment. Laying aside exceptional cases, such a disfigurement may render one repulsive or offensive to the sight, displeasing, or at least less pleasing, to employer, to fellow employees, and to patrons or customers. But this court cannot concede that impairment of earning power is the sole ground on which compulsory compensation to injured workmen legitimately may be based, although unquestionably it is a rational basis. In this court's opinion, the "due process of law" clause of the fourteenth amendment does not require the states to base compulsory compensation solely on loss of earning power. The court sees no constitutional reason why a state may not, in ascertaining the amount of such compensation in particular cases, take into consideration any substantial physical impairment attributable to the injury, whether it immediately affects earning capacity or not. Whether an award for such disfigurement should be made in combination with or independent of the compensation allowed for the mere inability to work is a matter of detail for the state to determine. The same is true of the question whether the compensation should be paid in a single sum, or in instalments.

Indemnification Against Liability for Malpractice

(*Schamps v. Fidelity & Casualty Co. of New York (U. S.), 259 Fed. R. 55*)

The United States Circuit Court of Appeals, Sixth Circuit, says that a surgeon carried with the defendant company a policy of so-called liability insurance, limited to \$5,000. An action for malpractice was brought against him by one Rainsford. The company assumed the defense of the suit. Rainsford obtained judgment for \$10,000. The company, with the consent of the surgeon, decided not to prosecute any proceeding for review. Thereupon the surgeon filed a voluntary petition and was adjudged a bankrupt. He scheduled this judgment as his only debt, and showed assets of some \$400. The trustee in bankruptcy, after providing for expenses, paid a 2 per cent. dividend on this claim—the only one proved—and thereupon brought this action to recover from the company the \$5,000 named in the policy. The company contended that it was liable only for what the surgeon or his trustee had paid to Rainsford, namely, \$200, and the trial court took that view.

That portion of the policy which directly imposed liability read as follows: "[The company] does hereby agree: (1) To indemnify . . . assured against loss from liability imposed by law on assured for damages on account of bodily injuries or death suffered by any person or persons in consequence of any malpractice, error or mistake of the assured. . . . (2) To defend, in the name and on behalf of the assured, any suit brought against the assured, etc." Later clauses specifically provided (7) that the company would continue the defense of any such suit "until a final decision is rendered in the assured's favor, or until the case has been appealed to the highest court to which an appeal can be taken, or until the suit has been settled with the written consent of the assured," and (9) that the assured should not "voluntarily assume any liability nor incur any expense. . . . nor, except at his own cost, settle any claim, nor . . . interfere in any negotiations or legal proceedings conducted by the company on account of any claim."

On the merits, the controlling question was this: Did the company indemnify against any part of the Rainsford judgment which the surgeon or his estate had not paid? The question, in somewhat analogous cases, has been considered to be whether the indemnity was against liability or was only against ultimate loss, and there is supposed to be a sharp conflict of authority between the cases which classify such policies in one or the other category, although, when the court comes to consider the peculiar language of this policy, it does not find any embarrassing conflict. In policies of this nature, the distinction was early recognized between insurance against liability and indemnity against damages. In view of this distinction, it became common to insert in such policies the provision known as the "no action" clause, which provided that, for example: "No action shall lie against the company as respects any loss under this policy, unless it shall be brought by the assured himself to reimburse him for loss actually sustained and paid by him in satisfaction of a judgment after a trial of the issue."

Under such "no action" policy, it was held, in Massachusetts, that the plain and express language of the policy must be given effect, and that the duty to indemnify did not arise until the judgment was paid, and this conclusion has been quite generally adopted in cases involving "no action" policies. But in the present instance the company omitted the "no action" clause from the policy. The court does not find any substantial inconsistency between clause 1 and the later clauses mentioned; but it does think it clear that, as the word "loss" is used in clause 1 it is ambiguous, and it holds that when the parties, in clause 1, referred to a "loss from liability," they intended that kind of a loss which, in ordinary nomenclature and thought, comes into existence when the liability of the assured becomes irretrievably fixed, so that the plaintiff, who was the trustee in bankruptcy of the surgeon's estate, was entitled to prosecute this action at law; in accordance with which view the judgment of the court below is reversed, and the case remanded for a new trial.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.

Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
American Urological Association, New York, March 23-25.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
Georgia Medical Association, Macon, May 6-8.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
New York State Medical Society, New York, March 23-25.
North Carolina State Medical Society, Charlotte, April 20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

*Joint Annual Conference of the Council on Medical Education of the
American Medical Association with the Association of American
Medical Colleges and the Federation of State Medical Boards
of the United States, held in Chicago, March 1-3, 1920*

(Continued from p. 761)

Report of Committee on Medical Education and Pedagogics of the Association of American Medical Colleges

DR. W. S. CARTER, Chairman, Galveston, Texas: It did not seem practicable to prepare reports on all the subjects of the medical curriculum at this time, and hence these were limited to the fundamental medical sciences which are taught by laboratory methods during the first and second years, with the exception of public health and preventive medicine, which is usually taught in the years devoted to clinical subjects. The preparation of these reports is in no way a duplication of the work done by the committee of one hundred appointed by the Council on Medical Education in 1909. The purpose of the reports to be presented is not to standardize, but to consider the methods of teaching the subjects that occupy the preclinical years.

Teaching of Gross Human Anatomy

DRS. C. M. JACKSON, WILLIAM KEILLER and C. R. BARDEEN: The chief factor in teaching gross human anatomy is the professor. His most essential natural endowments are executive capacity and ability for constructive scientific research. His special training, in addition to a thorough grounding in gross and microscopic anatomy, embryology and physiology, should embrace the broader aspects of biology and anthropology, on the one hand, and pathology and clinical physiology, on the other hand. To keep up an adequate supply of teachers of this type it will be necessary to have salaries for those who make good on a par with those offered full-time clinical teachers. The education of the medical student in gross human anatomy has to do with work in (a) technic; (b) terminology and topography; (c) comprehension, and (d) initiative:

Education in technic should include (1) preparation of material for study, (2) methods of study, and (3) expression of observations and ideas. The chief training in technic of preparation for students of gross human anatomy is train-

ing in dissection. As a rule, this is well taught in our schools at present. The training in methods of study is fairly well done so far as the student is taught to make use of textbook and guide while dissecting. The student, should be encouraged to go beyond this and to make use of reference books, special preparations, roentgenograms and similar facilities. It is more important for a student to learn to know how to seek light on an obscure question of structure than it is to commit to a memory necessarily imperfect a vast amount of detail well recorded in every textbook. Training in technic of expression is more neglected than it should be in our anatomic departments if we consider its importance from the standpoint of practice of scientific clinical medicine.

By training in terminology and topography we mean acquiring the use of anatomic terms in association with a visualization of the structures to which these terms refer. It is now generally recognized that in order to aid this association of ideas, anatomic terms should be learned in the dissecting room. The old fashioned didactic lecture has practically disappeared in teaching gross anatomy.

One of the most difficult tasks in teaching gross human anatomy is to lead the student to comprehend the subject. For the average medical student the comprehension of structure from the standpoint of function seems most important. For this purpose the living model, and the fluoroscope and roentgenogram are of great help.

Gross human anatomy offers an unusual opportunity for training in initiative. If granted considerable freedom, the student may waste some good anatomic material; but he has not the opportunity to injure physically either himself or other people or valuable property he would have if granted the same freedom in most laboratories or in the clinic. Since initiative is so important a quality for a physician, it seems clear that advantage should be taken of the opportunity for encouraging initiative in gross human anatomy.

Teaching of Histology and Embryology

DR. F. C. WAITE, Cleveland: By means of questionnaires, the subcommittee collected the opinions of teachers in forty-four of the fifty-nine medical schools then in membership in the Association of American Medical Colleges. The following preliminary conclusions are reached after a digestion of these opinions:

TERMINOLOGY

The word embryology is a sufficient title for the courses in embryology given in the medical schools, without any designation as to whether it is vertebrate, mammalian, human, etc. The course on the gross and microscopic anatomy of the nervous system and sense organs is best designated by the term neuro-anatomy, since the term neurology is so largely used to designate courses in diseases of the nervous system. The part of the course on the finer anatomy of the organs exclusive of the nervous system and sense organs is best designated by the term organology. The part of the course on the fundamental tissues is best designated as histology, and this term should be restricted to this field and not used as a general term to include organology also. If the term is not so restricted, then the term general histology should be applied to that part of the course on the fundamental tissues. In the course in histology and organology, histologic technic should not be a required part; but the laboratory should furnish loan collections to the student to be returned at the end of the course.

HISTOLOGY AND ORGANOLGY

The course in histology and organology, exclusive of any histologic technic, requires at least 180 scheduled hours, of which from 35 to 40 per cent. should be devoted to histology and from 60 to 65 per cent. to organology. Of the scheduled time, approximately 25 per cent. should be given to didactic work and 75 per cent. to laboratory work. For efficient teaching, the number of instructors must be such that in the laboratory there are not more than from twenty-two to twenty-four students to each instructor; and if the best results are to be obtained, there should not be more than from

sixteen to eighteen students to each instructor in the laboratory. The course in histology and organology should be given in moderate concentration extending over from sixteen to eighteen weeks.

EMBRYOLOGY

The course in embryology should be a separate course given either parallel with or following organology. The course should occupy approximately 100 hours of scheduled time. From 30 to 40 per cent. of this time should be devoted to the development of forms below mammals, and the balance to mammalian embryology. Embryology lends itself to greater concentration of schedule than do histology and organology, and the course should be covered in from eight to twelve weeks.

The courses in histology, organology and embryology should be given in the first year, beginning either at the beginning of the year or sometime in the first half year. The shortness of time available and the varied wishes of the clinical instructors make it impossible to make the first year courses in this field courses in applied organology. They must primarily prepare for physiology and pathology (for which this work should be prerequisite), and therefore be on a broad basis rather than planned to prepare separately for each of the several clinical subjects and specialties.

RESEARCH

There apparently is little time that is available for elective courses in this field. Research in this field cannot be expected from the ordinary undergraduate medical student. Only students who are exceptional in preparation and ability and who can give additional time should be expected to do research.

Teaching of Neuro-Anatomy

DR. IRVING HARDESTY, New Orleans: The name neuro-anatomy is accepted for the course by 56 per cent. of the colleges answering the questionnaire, while 24 per cent. specify the term neurology. Others suggest excellent but more cumbersome terms. Doubtless, nearly all prefer neurology in that it is shorter and carries the more suitable meaning—knowledge or discussion of the nerves or nervous system—while neuro-anatomy carries the untrue inference that the subject is wholly anatomy. The minimum time necessary should be given as from 120 to 132 hours at least. Neuro-anatomy requires more concentrated and consecutive effort on the part of the student and instructor than any other division of anatomy. It deals with one continuous functional apparatus, knowledge of which must be added to day by day, with as little break in effort and as little diversion by other courses as possible. We urge that concentration of hours is very profitable for the student learning it.

From the very nature of what the course should be, it is obvious that the courses in histology and embryology should be required as prerequisite to entering the course in neuro-anatomy. The dissection of the entire body should be completed before neuro-anatomy is begun, certainly the head, neck and thorax. A supplementary review course in neuro-anatomy is advisable in the later years of the curriculum, introductory to the work in nervous and mental diseases. Cooperation in teaching among the staffs of neuro-anatomy, physiology, pathology and the staff of nervous and mental diseases is necessary. Anatomic names used should be as short as possible and each carry the proper functional significance in its meaning. The tracing of nerve paths is by far the most important object of the course.

Teaching of Physiology

DR. E. P. LYON, Minneapolis: A teacher of physiology should have (1) thorough training in biology, chemistry, mathematics and physics; (2) several years' study in a physiologic laboratory presided over by a productive and stimulating professor, and (3) appreciation of the aims and problems of practical medicine. For the latter purpose, clinical training is desirable, but not indispensable. No amount of clinical training can take the place of the first and second elements of a physiologist's education. It does not matter what degree the physiologist attaches to his name,

provided he has brains and proper training. The head of a department of physiology, in addition to the training outlined above, should be an inspiring leader to his staff and students. The quality of scientific imagination is essential in this connection. Select a man with this education and these qualities, gives him freedom and security of tenure. Do not "teach" him to death. Give him an adequate salary. Supply a well trained staff. Don't forget that his leading subordinates should be strong men and should have good salaries, not a third or half, but three quarters or 90 per cent. that of the chief. Supply such salaries, not only because they are deserved, but because from this group of assistants come the future leaders. We must have a "school" or physiology and some future for its students, or they will leave pure science, as they are now doing.

As to methods of teaching, freedom must be permitted. The lecture is valuable for those who possess good power of exposition. The laboratory course is important and needs most careful and skilful teaching. It should not be left to subordinates. The laboratory work should be quantitative so far as possible. Problems for mathematical solution are valuable.

The course should include a judicious selection of frog, turtle, mammalian and human experiments. Demonstrations should be used to a considerable extent. Students should assist and be required to work up quantitative data on demonstrations. The laboratory and demonstration work must be used to form the background for a large amount of necessary didactic work. The field is too large for a student actually to see every part of it; but unless a basis of observation is provided, visualization from description cannot be even approximately correct. This thought should always determine the relation of didactic to laboratory work. Any device, such as theses, required reading and special problems that will send students to the library should be used. The entire course in physiology should be developed from the standpoint of "principles" rather than that of "technic" or that of "useful information." Principles are just the underlying facts. They are not theoretical abstractions or unproved hypotheses. Physiology teachers can and should introduce useful special facts and useful methods into their teaching; but unless they give their students a thorough knowledge of the facts of universal application, i. e., principles, they will not furnish a fitting background for modern clinical training.

DISCUSSION

DR. BURTON D. MEYERS, Bloomington, Ind.: The time has come to establish a course in neuro-anatomy, but it must depend on the equipment which the department has for teaching the subject. You cannot teach neuro-anatomy without having a complete series of sections from the cervical nerve up beyond the anterior commissure to be used in the projection apparatus. Then, one can give the course in neuro-anatomy in from eighty-five to 105 hours.

DR. H. GIDEON WELLS, Chicago: The committee on teaching anatomy made a mistake in selecting its sources of information. It should have sent the questionnaires to pathologists in order to get a heartfelt constructive criticism, because the pathologist is the man who has to handle the work of the anatomist. He acts as a buffer between the anatomist and the clinician. A large proportion of pathologists feel that an undue proportion of the time assigned to them in the curriculum, if not most of it, is spent in remedying the deficiencies in instruction in anatomy.

DR. J. P. JOBLING, New York: Students come to us with an excellent knowledge of the relation which one tissue bears to another, with the vascular and nerve supply; but if you take a fresh liver at necropsy, make a section of it throughout, and separate the lobule, students want to know what it looks like. They know what it is histologically; they do not visualize what fresh tissue looks like. My suggestion is that in the course on anatomy we should show students a fresh liver, make sections, show the appearance of the normal organ, and compare it with the abnormal. It is not only important from the standpoint of the pathologist, but also from that of the surgeon. When he operates he wants to

know what the tissues are, yet the anatomist does not give him any information from his pickled organ of what such a tissue should look like.

DR. JAMES EWING, New York: I agree with Dr. Wells that the committee made a fundamental error in the selection of its sources for information. It should have referred the questionnaire to the students and got their reaction. I am a teacher of laboratory subjects and am aware of the weaknesses of technic that students fall into. We become enamored of our methods of putting knowledge into the heads of students, and sometimes we forget what the object of our work is.

DR. W. F. R. PHILLIPS, Charleston, S. C.: As a teacher of anatomy, the only method I know of is that indicated by Vesalius when he used his own hands in teaching anatomy. I know of no other way to teach anatomy than to put the student before the subject and say, "There it is: go to it."

DR. IRVING S. CUTTER, Omaha: I have asked some practitioners and students where they learned the most anatomy and learned it best, and I was astonished at the answer, namely, at the postmortem table.

Teaching of Biologic Chemistry

DR. OTTO FOLIN, Boston: Closely associated with the problem of the necessary entrance requirements in chemistry is the question as to the amount of time that should be allowed for the teaching of physiologic chemistry in the medical school. Physiology and physiologic chemistry should have about the same time, and one fourth of a college year should be given to each of these two subjects. The time allotted to a laboratory subject like biochemistry is meaningless unless individual space and equipment for uninterrupted individual work are provided. It is also necessary that there should be in the laboratory at least 10 per cent. of unoccupied desk space available for miscellaneous uses for extra reagents, polariscopes, colorimeters, scales, etc.

The course in physiologic chemistry should consist of from seventy-five to eighty lectures and conferences (except so far as some of the lecture periods are used for one-hour written examinations), and an equal number of laboratory periods, two and one-half hours each (except so far as some of these are replaced by practical examinations). The first two weeks in the laboratory are needed for the preparation of standard solutions involving the use of the balance and for learning volumetric analysis. The lectures during this time must be partly instructions concerning the laboratory technic, but should deal mainly with the chemistry of solutions, the theory and practical use of indicators, and such topics as osmosis, reversible reactions, and the law of mass action. The work in volumetric analysis leads directly to the subject of quantitative nitrogen determinations, and the students can at once apply and fix their newly acquired experience by working on pure nitrogenous compounds. The lectures and reading at this time can advantageously cover the field of catalysis leading up to a general consideration of the field of enzymes. This work covers about three weeks, or from fifty-five to sixty hours, and trains the student as no other kind of work can train him in precision and attention to details.

The elementary first course in physiologic chemistry, coming as it generally does during the second half of the first year or first half of the second year, is not a course in pathologic chemistry, yet it includes the principles and methods on which the later applications to clinical materials are based. The student should not examine stomach contents, yet he studies pepsin and peptones, he learns to differentiate between hydrochloric acid and lactic acid, and he acquires some familiarity with the pigments of bile. He need never see a urine representing diabetes or nephritis, yet if given such a urine at the end of his course in physiologic chemistry he should be able to make a better chemical examination than he would four years later, when he is engaged as an intern in a hospital.

The examinations in biochemistry should be partly practical, partly written. These examinations should be numerous enough to permit a partial classification of the students by the time the course is half over. The practical examina-

tions can advantageously consist, in part, of problems which the student solves when he gets ready, at a time chosen by himself; but, in part, they must consist of general examination sessions. Four such general examinations (besides the final) are a large enough number. These may be thus distributed: The first, volumetric analysis (including nitrogen determinations), the differentiation between strong and weak acids, and the use of different indicators. Second, the reactions of fats and carbohydrates, including sugar titrations. Third, identification of protein materials and milk constituents, including quantitative milk analysis. Fourth, urine analysis and other topics. It is not possible to take more than one-half the class at a time for these practical examinations. They will therefore occupy either eight laboratory periods, or four lecture plus laboratory periods.

There is urgent need for some constructive recommendations as to how the great and growing demand for well trained and productive biochemists by medical schools and hospitals may be met.

DISCUSSION

DR. A. P. MATTHEWS, Cincinnati: The need of medical institutions in this country is research. The future of medical education lies in research. All the problems of instruction will solve themselves as soon as we realize that the development of the research spirit is at the bottom of all good education.

DR. FRANK BILLINGS, Chicago: The practitioner or clinician who does his work most efficiently is found to have been well grounded in the fundamentals in medicine. We have in this country an enormous number of physicians practicing medicine. The greater number of them graduated before we had made much, if any, advance in medical education. They do not think in terms of anatomy, physiology, pathology, physiologic chemistry or normal physiology. They think only of a patient and of an opportunity to prescribe some drug. I do not think we have time enough in two years in which to teach the fundamentals of medicine properly, and we are embarrassed when we speak of a curriculum of both the fundamental and clinical branches to find enough time to teach both, so that the product is the best that can be turned out.

The Larger Function of State University Medical Schools

DR. WALTER A. JESSUP, Iowa City: Our experience in Iowa leads to these conclusions: First, in view of the great rapidity with which the demands on our hospital and university staffs have grown, it is important that any state, in attempting to provide this type of service, should make liberal provision in space and staff for adequate service not only to indigents, but also to the ever growing number of pay patients. Second, future plans should include ample provision for the vigorous prosecution of medical research. Otherwise the teaching staff may easily be overwhelmed with routine, with a consequent slump in growth. Furthermore, the unusual clinical demands serve as a constant challenge to the student of medicine. Third, since the success of the work is absolutely dependent on skill and devotion of the staff, it is essential that many adjustments in the conditions of teaching must be made. The problem of full time clinical teaching becomes more acute.

Other departments of technical education have had to meet the same situation. Indeed, in the field of agricultural education a very large part of the function has been the providing of service for the public. So much is this true that it would be hard at the present moment to conceive of a college of agriculture without its elaborate organization in the direction of special agricultural service to the state. Within the next few years we may expect in many state universities just such close coordination in the problems of the training of physicians, furthering research that will contribute to the knowledge of the field and extending health service to the public. In the degree that the colleges of medicine of the state universities are alert to these new demands and effective in their responses will they become real leaders in this present movement looking toward the highest type of physical and mental efficiency.

Full-Time Teachers in Clinical Departments

DR. WILLIAM DARRACH, New York: In regard to clinical teachers, there exists considerable ambiguity in the conception of the full-time or university basis, as is evidenced by the widely divergent plans of organization now in force or planned in the various schools of the country. In several medical schools the departments of medicine, surgery and pediatrics are being reorganized on what is spoken of as the "full-time" or "university" basis. It is being widely accepted that such an arrangement is necessary for the best type of teaching, for the most successful clinical investigation and for the most skilful care of the sick. The essential principle of this arrangement is that the dominating group of men in the main clinical departments must be free to concentrate their energies on their university and hospital work. A year ago I was frankly opposed to the university basis being applied to the clinical departments of a medical school. But as a member of a committee which has been earnestly seeking light on medical school organization, I have become completely converted to the principle.

There are two main factors which tend to interfere with this freedom, no matter how sincere the intentions of the men may be. These factors are insufficient assistants and the distractions of private practice. By providing the full-time men with sufficient assistants, professional, clerical, technical and menial, he may relieve himself of such unnecessary details as he desires. He must also be protected from the demands of private practice. The main purpose is to obtain a more truly university type of clinical teacher. The full-time plan is a means to this end—a method by which it may be obtained.

The various so-called full-time plans may be thus summarized: (1) no private practice and no outside employment; (2) private practice at the discretion of the clinician, but no fee paid for such service; (3) as in Plan 2, except that the fee is paid to the university; (4) private practice for fees allowed in such limited amounts that it does not interfere with the thorough, efficient and sincere fulfilment of his academic duties; (5) unlimited private practice within the hospital.

The specific plan which we have proposed and hope to put into effect is as follows: The fundamental principle on which these departments shall be reorganized is that the control of each main clinical department shall be vested in a director, associated with a differentiated group of men who are devoting all their time to the school and hospital, that they may build up and maintain a department in which the best intensive clinical investigation and scientific research may be carried on with the teaching of students and the care of the sick. Of more importance than salary for either type of man is the proper arrangement of his work, so that he shall be freed from unessential details and useless waste of time. In the end the opportunity to carry on teaching and research under wholesome surroundings is the most effective force for bringing into the medical school men of ability and ideals. The head of the department with these associates should form an administrative board, which could relieve him of as much of the administrative details of the hospital and of the teaching as he chose. Unless he is so relieved and protected from the innumerable distractions of departmental matters he will prove sterile as a producer and will soon cease to be the inspiring and stimulating leader so necessary in a department of this kind. These men should have as much time for constructive thought and productive leisure as the head of a large industrial concern. By such a combination and coordination the department would become a well-rounded unit, which should result in great progress along all three lines—research, teaching and care of the sick.

(To be continued)

Reporting Communicable Diseases.—Whenever a physician fails to report a communicable disease, the entire community is unnecessarily exposed to the contagion. Such failure may be attributed to sheer negligence, to wilful disregard of the obligations imposed by statute, or to a mistake in diagnosis.—*Connecticut Health Bull.*, October, 1919.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Insanity, Baltimore

January, 1920, 76, No. 3

- *Epidemic Encephalitis and Catatonic Symptoms. E. D. Bond, Philadelphia.—p. 261.
- *Histopathologic Findings in Dementia Praecox. E. Rawlings, Talmage, Calif.—p. 265.
- War Neuroses: Environment and Events as the Causes. L. V. Briggs, Philadelphia.—p. 285.
- Should the Plea of Insanity as a Defense to an Indictment for Crime Be Abolished? C. F. MacDonald, New York.—p. 295.
- *Larceny; An Effort to Compensate for Emotional Repression. E. R. Spaulding, Philadelphia.—p. 303.
- Proposed Reorganization and Consolidation of State Institutions in Massachusetts. G. M. Kline.—p. 321.
- New Jersey Plan in Operation. B. G. Lewis, New Jersey.—p. 335.
- Activities of War Risk Insurance Bureau and U. S. P. H. Service Relative to Mentally Disabled Ex-Military Men. W. L. Treadway, Washington, D. C.—p. 349.

Epidemic Encephalitis and Catatonic Symptoms.—Five cases are cited by Bond. He says that his aims in presenting these cases are to inquire into the difficulties in the descriptions of postures and motor symptoms, and to suggest the plausibility of cerebral disturbance as a basis for "catatonic" episodes. In three of the cases, episodic disturbances of the brain were located by cranial nerve involvement; in another case, by this and necropsy. Most important is the fact brought out by these cases that very mild and transient, but definite, symptoms are usually missed in excited, seclusive or indifferent patients. In one case, strabismus went unrecognized at home; another patient, because she had no psychosis, was able to give information which would have been lost in a person less clear. It is interesting that these patients began to improve after dental attention, one after thyroid therapy and one immediately after lumbar puncture.

Histopathologic Findings in Dementia Praecox.—The twelve cases studied by Rawlings gave quite uniform pathologic findings which are due neither to arteriosclerosis, senility nor a long continued grave toxic process. This pathologic process is essentially a chronic one, resulting in an atrophy of the nerve cell body and its nucleus, a disappearance of its stainable substance, an attenuation, with partial fragmentation, of its neurofibrils and an atrophy with distortion of its protoplasmic prolongations; the process terminating in either extreme pyknotic atrophy in which the shrunken cell and its prolongations are seen covered with incrustations or in a fragmentation of the nerve cell to the extent that it is either a shadowy outline or an atrophic nucleus surrounded simply by a fragmented rim of pale granular protoplasm. While no special effort is made by Rawlings to trace the disease process, a general impression is obtained from the study of the various types of cells in all strata that the initial process is one of moderate swelling of both cell body and nucleus followed by a gradual breaking down of the normal nuclear chromatin structure and later, by an atrophy and fragmentation of the neurofibrils with subsequent granular degeneration and irregular clumping of the Nissl granules. The final stage terminates in one of two conditions according to the degree of the vicious influences or the original resistance of the cell, namely, moderate atrophy, followed by more or less acute fragmentation and extreme pyknotic atrophy.

Larceny and Emotional Repression.—The three cases reported by Spaulding represent attempts to compensate for emotional repression, which has been associated with a distressing mental conflict. In the first case, there was an internal fermentation, which bubbled over in an antisocial way when the patient, because of unusual strain in her environment that made her past more oppressive than usual, was unable to obtain an emotional outlet and a feeling of compensation through her religion. That she chose the outlet she did instead of others apparently resulted from the

fact that this particular act typified to her the worst thing she could do and represented an attempt to win back favor and effect a reconciliation. The patient's married life was marred by her difficulty in adjusting herself to marital conditions and her inability to obtain children by adoption. In the third case, emotions had been aroused at an early age in a way in which there was such a strong association to shame that everything even remotely connected with the sexual sphere had in consequence been repressed. The energy that had been repressed as a result of the conflict had expressed itself asocially in several ways, one of which was stealing. The outlets that she chose seemed to furnish her in some way with what is called an illusion of compensation.

American Journal of Public Health, Boston

February, 1920, 10, No. 2

- Economics of Health Administration. H. B. Hemenway, Springfield, Ill.—p. 105.
Popularizing Vital Statistics. C. St. Clair Drake, Springfield, Ill.—p. 112.
*Mosquito Work of Bureau of Entomology. D. L. Van Dine, Mound, La.—p. 116.
*Drainage as an Antimalaria Measure. J. A. LePrince, Memphis.—p. 120.
Sanitation in Serbia. E. Stuart, Paris, France.—p. 124.
Venereal Disease Control: Methods, Obstacles and Results. C. C. Pierce, Washington, D. C.—p. 132.
Rôle of Latrine on Control of Uncinariasis. J. A. Ferrell, New York.—p. 138.
Rôle of Sanitary Privy in Control of Typhid. C. E. Smith, Columbia, Mo.—p. 140.
*Uses, Possibilities and Limitations of Bacteriology in Food Control. E. O. Jordan, Chicago.—p. 142.
Pollution of Deep Wells at Lansing, Mich. E. D. Rich, Lansing.—p. 147.
Studies in Clarification of Milk. C. E. Marshall, Amherst, Mass.—p. 152.
Schools for Health Officers: What Has Been Done at Syracuse. F. W. Sears, Syracuse, N. Y.—p. 155.
Insurance Company in Industrial Hygiene. A. D. Reiley, New York.—p. 160.

Mosquito Work of Bureau of Entomology.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Drainage as an Antimalaria Measure.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 163.

Bacteriology in Food Control.—In summing up the future outlook for the application of bacteriology in food control, it seems probable to Jordon that increasing emphasis will be laid on bacterial methods as an aid to the interpretation of the sanitary inspection of foodstuffs and as a guide to satisfactory sanitary procedure. Continued laboratory investigation of the two best known instances of so-called "food poisoning" traceable to primary bacterial food contamination, botulism and paratyphoid meat poisoning, seems urgently called for since both are intimately connected with the vital problems of food conservation. Finally, the nature and sanitary significance of the products generated by bacteria, particularly the so-called saprophytic bacteria, in foodstuffs affords a practically untouched field for investigation.

Archives of Dermatology and Syphilology, Chicago

February, 1920, 1, No. 2

- Case of Monilia Candida Infection of Mouth; Moeller's Disease and Others. M. F. Engman and R. S. Weiss, St. Louis.—p. 119.
*Case of Burning Tongue. M. F. Engman, St. Louis.—p. 137.
Syphilis of Liver. U. J. Wile, Ann Arbor.—p. 139.
*Ulcerating Granuloma of Pudenda. H. Goodman, New York.—p. 151.
*Erosive Vulvitis. T. L. Driscoll, Richmond.—p. 170.
*Solar Keratoses and Cutaneous Cancer. J. N. McCoy, Vincennes, Ind.—p. 175.
*Dermatologic Misnomers. M. Scholtz, Los Angeles.—p. 182.

Burning Tongue.—Eleven cases of burning tongue are reported by Engman. None of these patients showed any lesions of the tongue, except enlarged papillae from constant feeling for the sensation against the teeth, and all of them were in an almost terror stricken condition for fear of carcinoma of the tongue. Engman's course of procedure in the treatment of such patients has been to be frank with them by stating that several such instances have been observed, and that the condition is no doubt due to a subconscious fixing of the mind on the anterior portion of the tongue, suggested by some instance which they have not consciously observed—possibly a remark from some one as to cancer of

the tongue, or hearing or reading of such cases. It is somewhat similar to the "idée fixée" of French writers. However, one possible cause of this sensation in the anterior portion of the tongue may be inflammation of the lingual tonsil on either side, as was pointed out by Sluder.

Ulcerating Granuloma of Pudenda.—Goodman presents a review of the literature with a bibliography and some observations of the disease as seen in Porto Rico. Four cases of ulcerating granuloma of the pudenda are reported. In three of these cases, *Calimato bacterium granulomatis* was demonstrated for the first time in the United States or its dependencies. In one case, the spirochetal organism described by Wise was observed. Goodman emphasizes that the disease is not syphilis, although it may be associated with syphilitic lesions, or be present in a Wassermann positive syphilitic, free of syphilitic manifestations. Arsphenamin and mercury are ineffective in its treatment. Antimony and potassium tartrate was not given a sufficiently thorough trial to warrant any positive expression of its efficacy.

Erosive Vulvitis.—Three cases of this disease are reported by Driscoll. In each of the three cases, the Wassermann reaction was negative. There was no response to anti-syphilitic treatment, including arsphenamin treatment. In each case the characteristic spirochete and fusiform bacilli were isolated from the serum of the ulcers. Driscoll urges that any persistent erosive ulceration with negative Wassermann reaction should be regarded as suspicious, and some of the serum should be obtained for bacteriologic study. If the serum shows spirochetes and fusiform bacilli, the diagnosis is conclusive. The infection might, of course, be superimposed on other lesions of the genitals.

Solar Keratoses and Cutaneous Cancer.—From a study of the clinical histories of patients, McCoy is convinced that cancers of the mucocutaneous margin of the lip, or cancers commencing at that point, are in no way due to solar light. Further, the lips near the margin seem to be immune to the development of keratoses. He has never seen a keratosis at or near the lip margin. He also calls attention to the significant fact that while a large percentage of cutaneous cancers of keratotic origin are of the basal cell type, most cancers of the lip margin are of the cuboidal cell type. However, cutaneous cancer of covered parts is quite rare and, when found, is nearly always traceable to traumatism, while 37.7 per cent. of all cancers, both deep seated and superficial, have occurred on the face (exclusive of the lip margins), the hands and neck, parts exposed to solar light; and that they have attacked persons whose vocations or habits involved insolation to a considerable degree. McCoy agrees with Unna and others that insolation produces keratoses and that these are the most frequent of pre-cancerous lesions. Sixty-two per cent. of his patients were blondes, 7 per cent. were dark-skinned persons, and 31 per cent. were chatains, or persons having a skin only slightly pigmented. In as much as the keratosis is an admitted pre-cancerous lesion, McCoy advises that it should unfailingly be removed.

Dermatologic Misnomers.—Scholtz submits what he terms the most glaringly inconsistent and misleading misnomers of dermatologic nomenclature, such as erythema induratum, erythema nodulare and erythema multiforme, infectious eczematoid dermatitis, dermatitis repens, and other dermatitides, acne rosacea, sycosis vulgaris, etc., and pleads for their revision and correction.

Boston Medical and Surgical Journal

March 4, 1920, 182, No. 10

- Meaning of the Normal. A. L. Johnson, Boston.—p. 237.
Clinical Bacteriology of Pneumostreptococcus Group. D. M. Lewis, New Haven.—p. 240.
Use of Portable Respiration Apparatus. F. G. Benedict, Boston.—p. 243.

Journal of Biological Chemistry, Baltimore

February, 1920, 41, No. 2

- Preparation of *p*-Dimethylaminobenzaldehyd. T. Ingvaldsen and L. Bauman, Iowa City.—p. 145.
Oxidation of Sugars by Mercuric Acetate in Presence of Ammonia. T. Ingvaldsen and L. Bauman, Iowa City.—p. 147.

- *Fat-Soluble and Water-Soluble Vitamin Content of Green Plant Tissues. H. Steenbock and E. G. Gross, Madison, Wis.—p. 149.
- *V. Thermostability of Fat-Soluble Vitamin in Plant Materials. H. Steenbock and P. W. Boutwell, Madison, Wis.—p. 163.
- Phosphorus Requirement of Maintenance in Man. H. C. Sherman, New York—p. 173.
- Rôle of Pentose Fermenting Bacteria in Production of Corn Silage. W. H. Peterson and E. B. Fred, Madison, Wis.—p. 181.
- *Hydrogen Ion Concentration of Human Duodenum. F. J. Meyers and J. F. McClendon, Minneapolis.—p. 187.
- Studies of Acidosis. XV. Carbon Dioxid Content and Capacity in Arterial and Venous Blood Plasma. W. C. Stadie and D. D. Van Slyke, New York.—p. 191.
- Effect of Calcium on Composition of Eggs and Carcass of Laying Hens. G. D. Buckner and J. H. Martin, Lexington, Ky.—p. 195.
- Modification of Official Chlorin Method for Feeds, Feces, and Urine. J. O. Halverson and E. B. Wells, Wooster, Ohio.—p. 205.
- *Comparative Study of Hemoglobin Determination by Various Methods. F. S. Robschey, San Francisco.—p. 209.
- *Digestibility of Certain Miscellaneous Vegetable Fats. A. D. Holmes and H. J. Deuel, Jr., Washington, D. C.—p. 227.
- *Method for Determination of Methemoglobin in Blood. W. C. Stadie, New York.—p. 237.
- Nephelometric Values of Cholesterol and Higher Fatty Acids. H. F. A. Csonka, Pittsburgh.—p. 243.
- Heptoses from Gulose and Some of Their Derivatives. F. B. LaForge, Washington, D. C.—p. 251.
- *Secretion of Gastric Juice. S. J. Cohen, Chicago.—p. 257.
- Direct Quantitative Determination of Potassium and Sodium in Small Quantities of Blood. B. Kramer, Baltimore.—p. 263.

Fat-Soluble Vitamin Content of Green Plant Tissues.—It appears that of the plant structures the leaves are generally richest in the fat-soluble vitamin; some roots are next in order, and last, at least of those investigated by Steenbock and Gross, are grains. Where certain yellow plant pigments occur there fat-soluble vitamins may be looked for. In harmony with this, it is seen that cabbage in the head, containing little pigment, is not to be compared in physiologic activity with the other leafy substances, and of these latter, lettuce, also somewhat etiolated, is the poorest.

Thermostability of Fat-Soluble Vitamin in Plant Materials.—A process of heat treatment, consisting of autoclaving for three hours at 15 pounds pressure, does not destroy any of the fat-soluble vitamin as found in yellow maize. Neither does this treatment cause any noticeable destruction of the vitamin in chard, carrots, sweet potatoes and squash. Experiments by Steenbock and Boutwell demonstrated that the fat-soluble vitamin as found in the plant kingdom in a grain, leaf and stem tissue, fleshy roots, and cucurbital vegetables is comparatively stable at a high temperature.

Hydrogen Ion Concentration of Human Duodenum.—The reaction of the duodenum between three and four hours after meals was usually found to fluctuate around the neutral point, but the extreme range on the acid side was greater than on the alkaline side, possibly due to the spurting of gastric contents into the duodenum.

Value of Hemoglobin Determination by Various Methods.—Various methods used for estimating hemoglobin percentage were compared by Robschey. The Sahli hemoglobin method, when using the color tubes accompanying the instrument, gives very inaccurate results because of the decided variance in color density of the standard tubes, the result of fading. The Palmer method offers a very satisfactory means of hemoglobin determinations if the standard solutions are freshly prepared. Newcomer's method obviates many difficulties heretofore observed with other procedures, and gives good results with the glass 0.96 mm. in thickness, although the color is quite pale. A method is presented applying Palmer's procedure to Sahli's principle which has proved most satisfactory. It removes the difficulty encountered with Palmer's method, the lack of stability of color in the standard solutions. It has the advantage of an easier color match than that of red tint. The standards prepared have remained sufficiently unchanged for a period of eleven months to insure accurate hemoglobin determinations during this long period.

Digestibility of Certain Vegetable Fats.—The digestibility of several fats and oils has been studied by Holmes and Deuel. The digestibility coefficients obtained were: avocado fat, 87.9 per cent.; cohune oil, 99.1 per cent.; capuassu fat, 94.1 per cent.; hempseed oil, 98.5 per cent.; palm kernel oil, 98.0 per cent., and poppy seed oil, 96.3 per cent. The digestibility of the protein and carbohydrate of the entire ration was essentially the same as that in other experiments of a

similar nature, indicating that the fats exercised no unusual effect on the utilization of these constituents. These fats and oils, with the possible exception of capuassu fat, which caused slight disturbances, produced no abnormal physiologic effects, and may be regarded as satisfactory for food purposes. Cohune, hempseed, palm kernel and poppy seed oils especially are very highly utilized by the human body.

Method for Determination of Methemoglobin in Blood.—A colorimetric method for the determination of blood pigments is given by Stadie which is simple and rapid, and which, combined with a simultaneous determination of the hemoglobin by the gasometric method of Van Slyke, gives the methemoglobin content of the blood. The method depends on the fact that both hemoglobin and methemoglobin are changed quantitatively to cyanhemoglobin by dilute solutions of potassium cyanid.

Secretion of Gastric Juice.—Cohen claims that the total chlorids of gastric juice are secreted more or less constantly regardless of the free acidity of the gastric juice. They vary from 0.39 to 0.54 per cent. This may corroborate Pawlow's view that gastric juice is secreted with a constant acidity, and that variations are due to secondary neutralization. A large volume of juice secreted rapidly has a higher acidity than a smaller volume secreted slowly, other factors remaining constant (confirmatory of Pawlow).

Journal of Orthopedic Surgery, Lincoln, Neb.

February, 1920, 18, No. 2

- *Arthritides and Focal Infection. V. P. Gibney, New York.—p. 63.
- Chondromas; Report of Cases. H. W. Meyerding, Rochester, Mnn.—p. 77.
- Focal Putrefactions and Their Bearing on Osteoarthritis and Other Diseases. S. L. McCurdy, Pittsburgh.—p. 92.

Arthritides and Focal Infection.—Some of the points emphasized by Gibney are: A focus of infection should be diligently sought for in every case of arthritis where tuberculosis, malignancy or trauma are not self-evident as causes or at least controlling factors. While the finding of a focus and the proper handling of the same may not be followed sooner or later by relief, it cannot be assumed that the infection is at an end. The arrest of the infection does not mean that the exudates in and around a joint will disappear unless orthopedic measures are employed to bring about resolution and restoration of function. The finding of one focus does not mean that this is the only focus bearing on the case. Many organs are exposed to bacteria of a pus producing nature, and that a careful study of these organs should be the rule.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1920, 14, No. 5

- Constituents of Lathyrus Sativus Seeds and Their Action. W. J. Dilling, Glasgow, Scotland.—p. 359.
- *Restoration of Frog's Heart in Chloroform Poisoning. F. Ransom, London, England.—p. 367.
- *Anaphylactoid Phenomena from Intravenous Administration of Various Colloids, Arsenicals and Other Agents. P. J. Hanzlik and H. T. Karsner, Cleveland.—p. 379.

Restoration of Heart in Chloroform Poisoning.—It is shown by Ransom in perfusion experiments that frogs' hearts depressed by chloroform may be restored to nearly or in some cases quite normal activity by adding to the chloroform solution small quantities of epinephrin, tyramin, strophanthus, diuretin, caffein or strontium chlorid (pituitary extract failed). In the case of epinephrin and tyramin, the restored hearts will continue beating well in the presence of toxic amounts of chloroform for some hours. The other substances when added to the chloroform solution cause, first, restoration and then characteristic toxic symptoms of their own, but this latter difficulty may be overcome if, as soon as restoration has taken place, the perfusion fluid is changed to plain Ringer's solution. By this method of giving a small quantity of the antagonist and following with plain Ringer's solution restoration is much quicker than when the chloroform is simply washed away.

Anaphylactoid Phenomena from Intravenous Administration of Colloids, Arsenicals and Other Agents.—Mild ether

anesthesia and the intravenous injection of physiologic sodium chlorid solution are practically harmless to the circulatory and respiratory systems of guinea-pigs, but the remaining twenty-nine of the thirty-one agents studied by Hanzlik and Karsner were found to be distinctly harmful in varying degrees. The results obtained by the authors are decidedly against the promiscuous and unwarranted use of the intravenous method of administering drugs as a routine therapeutic measure, particularly for new and untried remedies or those of doubtful efficacy, and even those which chemically and pharmacologically appear to be inert or inactive. When taken together with the explanations supplemented throughout the text, these results indicate that it is quite erroneous to regard the disturbances produced by the intravenous injection of sundry agents in the same category with true anaphylaxis or bearing any causal relationship to it whatsoever, or vice versa. On the basis of the results obtained with atropin and epinephrin, Hanzlik and Karsner claim that the mechanism of action of agar and similar agents bears no relationship to true anaphylaxis or anaphylactic shock.

Medical Record, New York

Feb. 28, 1920, 97, No. 9

- Treatment and Management of Neurasthenic Individual. C. F. Neu, Indianapolis.—p. 341.
Cancer Enigma. R. Bell, London, England.—p. 346.
Blood Counts in Diagnosis and Treatment. Greeley, Brooklyn.—p. 348.
Focal Infections of Head as Sources of Systemic Diseases. J. J. King, New York.—p. 353.
Anesthetics in Obstetrics with Special Reference to Nitrous Oxid. R. C. Coburn, New York.—p. 356.
Willems' Method of Active Mobilization in Surgical Joints. E. B. Mumford, Indianapolis.—p. 357.

Military Surgeon, Washington, D. C.

February, 1920, 46, No. 2

- Constipation as an Army Problem. W. R. Woodbury, M. C., U. S. Army.—p. 119.
*Sputum-Borne Disease Transmission with Epidemiologic and Bacteriologic Research. J. G. Cumming, M. C., U. S. Army.—p. 150.
Museum and Art Service. L. B. Wilson, Rochester, Minn.—p. 165.
*Six Cases of Traumatic Aneurysm. R. E. Flannery, Chicago, and A. R. Tormey, Madison Wis.—p. 173.
Comments on Army Field Ration. C. C. Mason, S. C., U. S. Army.—p. 178.
Treatment of Catarrhal Deafness. P. Rice, San Francisco.—p. 185.
Military Hygiene. A. L. Benedict, Buffalo.—p. 191.
Cases of Seasonal Hay-Fever Diagnosed and Treated with Pollen Extracts. W. C. Williams, S. C., U. S. Army.—p. 199.

Sputum Borne Disease Transmission.—This experimental research shows the facility with which a nonpathogenic organism may be transmitted from donor to recipient through the use of warm mess-kit wash water. The results of these tests, in conjunction with the epidemiologic research, indicate that mess-kit water was the most prolific source of distribution of pathogenic organisms and virus infections among troops. These results are wholly corroborative of the previously advanced theory of transmission through warm mess-kit wash water, and the paramount importance of the use of boiling water as a means of closing the major avenue of disease distribution.

Traumatic Aneurysm.—Of the six cases reported by Flannery and Tormey, three were arteriovenous, one was arterial, one was venous and one was diffuse. Four patients were discharged, cured; one patient died of meningitis, secondary to compound comminuted fracture of skull, and one died of shock, following loss of blood after operation. All vessels involved were ligated following long periods of complete rest, immobilization and pressure over the mass. The period of rest, varying from eleven to sixty-two days (an average of thirty-three and five-tenths days), was sufficient to allow collateral circulation to become fully established, thereby diminishing the risk of postoperative gangrene. The authors insist that it is essential that all clots be removed, thereby relieving pressure on the remaining vessels and lessening the chances of gangrene from the interference of circulation below. Postoperative treatment is very important: (a) The wound should have a large, soft, sterile dressing applied. (b) The extremity should be allowed to lie in its natural position. Splints are contraindicated, as pressure necrosis is apt to occur. (c) No hot-water bags should be used,

except to warm the bed before the patient is returned from the operating pavilion, as sloughing may occur in those parts of the extremities in which collateral circulation is not fully established. (d) If heat is thought necessary to aid the circulation in the extremity, the therapeutic light is advised.

Modern Medicine, Chicago

February, 1920, 2, No. 2

- Rehabilitation in Its Relation to Physician. A. C. Burnham, New York.—p. 93.
Sanitarian's Definition of Living Wage. D. B. Armstrong, Framingham, Mass.—p. 96.
Medical Service in Hotels. E. M. Statler, Buffalo.—p. 102.
Medical Aspects of Health Insurance Administration. E. H. Lewinski-Corwin, New York.—p. 113.
Status of Influenza. D. M. Lewis, New Haven.—p. 116.
So-Called Shell Shock in Great War. T. A. Williams, Washington, D. C.—p. 121.
Simple Goiter; Public Health Problem. P. C. McCord and R. G. Walker, Cincinnati.—p. 124.
Human Engineering; New Medical Speciality. F. L. Rector, Brooklyn.—p. 133.
Emergency Service of J. I. Case Threshing Machine Company. J. E. Konnak, Racine.—p. 136.
Restaurant Facilities for Shipyard Workers. F. S. Crum, Philadelphia.—p. 138.
Relation of Medical Department to Company. H. W. Cook, Minneapolis.—p. 142.
Practical Application of Immunity in Tuberculosis. W. H. Watterson, Washington, D. C.—p. 152.
*Coating for Poison Tablets for Prevention of Accidental Poisoning. G. Phillips, Brooklyn.—p. 155.
Medical Inspection in Big Horn Country, Montana. W. A. Russell, Hardin, Mont.—p. 159.
Hospital and Health Survey. H. Wright, Cleveland.—p. 160.
Neurologic Girl. J. Taft, Philadelphia.—p. 162.
Women Seek Careers in School of Occupational Therapy. M. Neall, Philadelphia.—p. 170.
Law for the Doctor. L. Childs, Indianapolis.—p. 1723.

Coating for Poison Tablets to Prevent Accidental Poisoning.—Phillips has developed a coating intended to render poison tablets innocuous when swallowed, but which interferes in no way with their use for making germicidal solutions. The contrivance consists of a coating of wax, the wax having a melting point above the highest climatic temperature, one which is not brittle and, therefore, which will not crack or scale from the tablet in handling; and, above all, which not only is insoluble in water, but is not affected by the digestive juices. Tablets coated with such a wax pass through the alimentary tract unchanged and consequently prevent any solution or absorption of the tablet substance while in the body. By breaking the tablets they may be dissolved readily when it is desired to prepare solutions from them. After many trials during which a large variety of substances has been rejected as unsuitable for this purpose, a coating has been developed which not only satisfies all theoretical requirements but which meets every demand for practicability. By mixing equal parts by weight of candelilla wax and a paraffin having a melting point of 56 C., a wax is obtained which melts at 70 C., which has a low coefficient of expansion and, therefore, little brittleness, which is unaffected by dilute acids and alkalis and which is not attacked by digestive ferments. Furthermore, the device presents no serious difficulties as to the manufacture. The machines employed for coating pills with gelatin are equally well adapted for applying the wax coating to tablets, while the combined cost of the materials and the process for quantity production is negligible. The perfected coating has the added advantages of protecting the tablet from moisture, and from breaking or crumbling in the container. Deterioration is prevented, and exact dosage is assured.

Philippine Journal of Science, Manila

September, 1919, 15, No. 3

- Physiochemical Valoration of Tikitiki (Rice Polishings) Extract. M. V. del Rosario and Joaquin Maranon.—p. 221.
Kwangtung Flora. E. D. Merrill.—p. 225.
Hoya Imbricata Callery Ex Decasine and Hoya Pseudomaxima Kds. in the Philippines. S. H. Koorders.—p. 263.
Black Halictine Bees of Philippine Islands. T. D. A. Cockerell.—p. 269.
Swarming of Anopheline Mosquitoes. C. S. Banks.—p. 283.
Two Philippine Leaf Mining Buprestids, One Being New. C. S. Banks.—p. 289.
Fulgoroidea, II: Genus Trobolophya. C. F. Baker.—p. 301.
Soy Sauce Manufacturing in Kwangtung, China. E. H. Groff.—p. 307.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Indian Journal of Medical Research, Calcutta

January, 1920, 6, No. 3

- *Anaphylactic Reactions in Course of Antirabic Treatment. J. W. Cornwall.—p. 237.
- *Pharmacodynamics of Quinin. R. McCarrison and J. W. Cornwall.—p. 248.
- *Study of Distribution of Bagdad Boils on Body Made with View to Discover Transmitting Agent. H. W. Acton.—p. 262.
- *Pathogenesis of Deficiency Disease. R. McCarrison.—p. 275.
- Bacteriology of Prevailing Epidemic in Bombay; Technic of Isolating and Growing Microbe in Bulk. R. Row.—p. 356.
- *Treatment of Various Types of *Endameba Dysenterica* Infection by Combined Hypodermic and Oral Administration of Emetin Hydrochlorid. W. MacAdam.—p. 363.
- Enteromonas Found in Human Intestinal Contents. G. C. Chatterjee.—p. 380.
- *Production of an Influenza Vaccine. W. F. Harvey, H. C. Brown and J. Cunningham.—p. 383.
- Endolimax Williamsi: Ameboid Form of Iodin Cysts. S. L. Brüg.—p. 386.
- *Studies in Ankylostomiasis. G. R. Wrench.—p. 393.
- Bacteriologic Examination of Accessory Sinuses of Nose, Middle Ear, and Cerebrospinal Fluid in Cases of Influenza. E. D. W. Greig and G. C. Maitra.—p. 399.
- *Preparation of Two Mediums for Growth of B. Influenza (Pfeiffer). G. L. Liston.—p. 418.

Anaphylactic Reactions in Course of Antirabic Treatment.

—It is suggested by Cornwall that the local cutaneous and subcutaneous tissue reaction, the general dermal reaction, the general systemic reaction in the form of malaise and a reaction of the central nervous system in the form of temporary heart failure, occipital pain and nausea, occurring in the course of antirabic treatment are anaphylactic in nature. The antigen may be either normal brain matter or the products of metabolism of the rabies organism. Attempts to reproduce the central nervous system reaction in rabbits have so far been unsuccessful. Similarly, attempts to demonstrate a state of shock in sheep were without success. In untreated sheep intravenous injections of fixed virus brain extracts caused greater disturbance of the cardiovascular and respiratory centers than extracts of normal brain substance. These disturbances are not invariable whether fixed virus brain extracts or normal brain extracts are injected.

Pharmacodynamics of Quinin.—An experimental investigation made by McCarrison and Cornwall showed that the usual salts of quinin employed for intravenous medication are dangerous to life if given in large doses. The respiratory center is more gravely affected than the cardiac center. The acid hydrobromid is less noxious in its action on the respiratory center than the hydrochlorids of quinin. All the salts of quinin employed caused a profound fall of blood pressure not accompanied by a cessation, or even much diminution in the strength of the heart beat, except in two instances in which the respiratory center failed. The fall of blood pressure is usually recovered from in four or five minutes, but the period of cardiovascular depression may last for a considerable time. The dilution of the quinin with a large volume of salt solution does not compensate for its depressor action: nor does dilution with 6 per cent. gum arabic solution. The authors advise that intravenous injections of quinin should be given very slowly. They should be administered with great caution when the general condition of the patient is bad and when the blood pressure is low. All such injections should be controlled by blood pressure observations. Epinephrin, given intravenously with the quinin, is able to counteract, to some extent, the immediate and dangerous fall of pressure which may result from quinin alone. The intravenous employment of quinin should be reserved for cases of special urgency, and where possible the hydrobromid, in doses not exceeding 15 grains, should be used, and the injection combined with not more than 0.3 c.c. of the commercial solution of epinephrin in all cases where the blood pressure is less than 100 mm. of mercury. These experiments indicate that quinin is a much more poisonous drug than is generally supposed, and that the massive dosage so generally employed today cannot fail to depress, by whatever route administered, the cardiovascular

and respiratory systems, and to retard the development of that natural immunity on which the cure of the disease is dependent.

Transmitting Agent of Bagdad Boils.—From the fact that the Bagdad boil is only found on exposed parts of the body, Acton is led to believe that the transmitting agent is some blood sucking diptera. The distribution of these Bagdad sores corresponds more closely with sandfly bites than with the bites of other blood sucking diptera.

Pathogenesis of Deficiency Disease.—After having made a very detailed study of this subject, the results of which are given in full, McCarrison is convinced that the absence of certain accessory food factors from the dietary—improperly termed “antineuritic”—leads not only to functional and degenerative changes in the central nervous system but to similar changes in every organ and tissue of the body. The morbid state to which their absence gives rise is not a neuritis. The symptom-complex resulting from the absence of these substances, is due (a) to chronic inanition, (b) to derangement of function of the organs of digestion and assimilation, (c) to disordered endocrine function especially of the suprarenal glands, and (d) to malnutrition of the nervous system. Certain organs undergo hypertrophy; others atrophy. Those which hypertrophy are the suprarenals. Those which atrophy, and in the order of severity named, are the thymus, the testicles, the spleen, the ovaries, the pancreas, the heart, the liver, the kidneys, the stomach, the thyroid and the brain. The pituitary gland showed a slight tendency to enlargement in adult male pigeons only. Gastric, intestinal, biliary and pancreatic disorders are important consequences of a dietary too rich in starch and too poor in vitamins; this state is due to the imperfect metabolism of carbohydrates and to acid fermentation of starches in the intestinal tract. Clinically, it is evidenced in pigeons by progressive slowing and deepening of the respirations. Great atrophy of muscular tissue results from deficiency of antineuritic vitamins; it is due, in part, to the disturbance of carbohydrate metabolism in consequence of disordered endocrine function, in part to the action of the suprarenals in supplying blood to the vegetative organs of the body at the expense of the muscles. The central nervous system atrophies little: the paralytic symptoms are due mainly to impaired functional activity of nerve cells; much more rarely to their degeneration. It is thought that because of their atrophy out of all proportion to other tissues the thymus, the testicles, the ovaries and the spleen provide a reserve of accessory food factors for use on occasions of metabolic stress. This reserve, however, is rapidly exhausted. The bones are thinned and there is a loss of bone marrow. The red cells of the blood are diminished by about 25 per cent. The whole morbid process is believed to be the result of nuclear starvation of all tissue cells. Finally, although deficiency of certain accessory food factors is the essential etiologic factor in the genesis of beriberi, it is held that infectious and parasitic agencies may often be important causes determining the onset of symptoms. Vitaminic deficiency renders the body very liable to be overrun by the rank growth of bacteria. It is probable that varying metabolic disturbances may determine the character of these growths.

Treatment of *Endameba Dysenterica* Infection by Emetin Hydrochlorid.—Eighty cases of *Endameba dysenterica* infection have been treated by MacAdam by a course of 18 grains of emetin, spread over twelve days, 1 grain being given hypodermically and ½ grain orally each day. The endameba of both primary dysenteric attacks and of acute relapses disappeared on the average in one and one-half days; while the average period of persistence of infection in cyst carriers was two and one-half days. The symptoms in the acute cases rapidly disappeared also, their average duration being four days. Eighteen of the eighty cases showed signs of persistent infection during the laboratory examinations. Eleven of these relapses occurred among thirty-six chronic dysenteries. Thirteen of the eighteen relapses occurred within four weeks of the completion of treatment. There was no difference between the time of relapse of acute cases

and of cyst carriers. These results show a considerable improvement on those obtained after a course of emetin by injection alone; while they compare favorably with the results obtained by various workers after full courses of emetin bismuth iodid.

Production of Influenza Vaccine.—Harvey and his associates found that the bacillus of influenza in symbiosis with either *Pneumococcus* or *Streptococcus pyogenes* grows much more luxuriantly than in unmixed culture. The fact of a culture's being mixed is no bar to its use for vaccine purposes, when the mixture contains the components required. The mixed organisms are easily separated by plate methods. The symbiotic method seems to afford a simpler method of obtaining a good yield than the preparation of a complicated medium.

Value of Drugs Used in Treatment of Ankylostomiasis.—The drugs ordinarily used in the treatment of ankylostomiasis were investigated by Wrench and his observations lead him to conclude that the "cures" of ankylostomiasis, so frequently reported and in such large numbers, are not justified in the name, if cure means freedom of the stools from ova. Research is necessary to determine and standardize what is meant by a cure, and then to discover, if possible, a means of cure which is practicable for present purposes. Chenopodium oil is a dangerous drug. In 151 treatments there were thirty-two instances of vomiting, many cases of giddiness and occasionally slight collapse. On nine occasions two capsules only could be given as a treatment and on one occasion one capsule only could be given. Manson's mixture failed to "cure" a single case. Thymol, Wrench says, is superior to Manson's mixture, and inferior to chenopodium oil. As a means of sterilization, thymol is unreliable. The following drugs were also tested in from five to ten cases each: methylene blue, embelia ribes, veronia anthelmintica, butea seeds, various bitters, camphor in combination with menthol and thymol, turpentine, clove oil, peppermint oil, and copaiba. None of these drugs, except turpentine, effected a cure. Turpentine, given in 20 minim doses, three times a day, to seven patients for ten days, "cured" one patient.

Culture Mediums for Growth of B. Influenzae (Pfeiffer).—The two mediums described by Liston were prepared by his assistants, Soparkar and Gore. One medium consists of ordinary nutriment agar mixed with a preparation of human blood. The other medium is almost identical with Mathew's medium.

Bulletin de l'Académie de Médecine, Paris

Jan. 20, 1920, 83, No. 3

*Lethargic Encephalitis. C. Achard.—p. 67; Idem. Combemale and E. Duhot.—p. 71.

*Comparative Wassermann Tests. C. Simon.—p. 73.

Trachoma at Marseilles. Aubaret.—p. 75.

*Poisonous Mushroom. A. Sartory.—p. 76.

Lethargic Encephalitis.—Summarized in Paris Letter, p. 748.

Comparative Wassermann Test in Blood and Urine.—Simon applied the Bordet-Wassermann test to the blood serum and the urine of 166 syphilitics and 35 healthy persons. The reaction was parallel in both blood and urine in 53 per cent., and it was positive in the urine and negative in the blood in 15 cases; positive in the blood and negative in the urine in 62 cases. The positive reaction in the urine was obtained in larger proportions of cases the longer the interval since infection. It seems rational, he says, that treatment should be continued until the reaction is negative in the urine as well as in the blood and spinal fluid. The findings were constantly negative in the healthy controls except that the urine of one man of 70 gave a positive reaction while the blood serum was negative.

Poisonous Mushrooms.—Sartory warns of the extremely poisonous nature of *Tricholoma tigrinum* Sch., and describes the features of the poisoning therefrom, and means to identify this mushroom. It is particularly dangerous on account of its close resemblance to the edible terreum groups.

Bulletin Médical, Paris

Jan. 21, 1920, 34, No. 4

*Teaching of Dermatology at Paris. A. J. L. Brocq.—p. 55.

*Anaphylaxis from Pancreas Insufficiency. M. Nathan.—p. 59.

Teaching of Skin and Venereal Diseases at Paris.—Brocq comments on the danger that either dermatology or venerology will predominate, to the practical exclusion of the other, when there is only one chair for both, as is the case at Paris. He mentions Fournier's incumbency as an example.

Anaphylaxis from Pancreas Insufficiency.—Nathan cites Lesné's experimental research which demonstrated that egg albumin injected into a sensitized animal induced anaphylaxis even after it had been digested with pepsin. But when the egg albumin had been subjected to the action of pancreatic juice, there were no signs of anaphylaxis. This experimental experience has been duplicated in a clinical case, Nathan here reports, in which a boy of 8 had always had diarrhea, rash and eruptions after eating eggs or any dish made with eggs. Examination of the stools showed defective functioning of the pancreas, and the child was given 40 cg. of pancreas extract daily, and dishes made with eggs and gradually whole eggs were added to his diet, with no further signs of intolerance. Whenever the pancreas extract was dropped, the symptoms of anaphylaxis reappeared, but under pancreas extract treatment conditions have been kept normal during the two years to date. Lesné has had a similar experience, the child finally outgrowing the tendency after a few months and not requiring the pancreas treatment further. When the stools show incomplete digestion of muscle fibers, this may give the clue to successful treatment of a certain class of cases of alimentary anaphylaxis.

Jan. 24, 1920, 34, No. 5

*Lethargic Encephalitis. D. Denéchau.—p. 69.

Lethargic Encephalitis.—Denéchau remarks, in commenting on the four cases in his own practice, that the mortality was 37 per cent. in the twenty-nine cases reported at the Société médicale des hôpitaux. Only nine survived of the eighteen cases followed to date, and four were left with contractures or uncertain gait, ptosis or persisting somnolency. Only five seemed to have recovered completely by the third or fourth month. One died in his own four cases, and one, ten months later, still has paralysis of the two internal rectus muscles, tremor, and cerebellar disturbances in gait, etc. The others, seen last at the fifth month, still displayed numerous sequelae. Dieting and hygiene are the main reliance, but Netter and Lhermitte have reported good results from hexamethylenamin by the vein and by the mouth, with repeated lumbar puncture aiming to draw the drug into the subarachnoid spaces.

Journal de Médecine de Bordeaux

Jan. 25, 1920, 91, No. 2

*Disability after Injury of the Skull. H. Verger.—p. 31.

*Tardy Tetanus. H. L. Rocher.—p. 37.

*Sudden Death after Fracture of Long Bone. R. Villar.—p. 43.

Clinical Pictures with Trauma of the Brain. H. Duret.—p. 52.

Disability After Injury of the Skull.—Verger enumerates the different forms of permanent disability after trauma of the brain, and their evaluation from the pension standpoint. When the disturbances are vague and are of the concussion type or traumatic neuroses, the majority recover in time. Preexisting syphilis, atheroma, or alcoholism, reducing the resisting powers and providing points of lesser resistance, form another group in which the evaluation of the disability is more difficult. The courts here go farther than medicine can follow. They assume that the traumatism must be incriminated for the disability, as when parietic dementia develops in a syphilitic after an accident, if the medicolegal experts are unable to affirm positively that the parietic dementia would have developed without the trauma. The medicolegal expert thus has his task reversed: Instead of establishing the presumption between cause and effect, he has to seek for proof to the contrary.

Tardy Tetanus.—In Rocher's seven cases the tetanus developed from seventeen to sixty-four days after the wound and

two injections of antiserum. They teach that preventive antiserotherapy should be kept up until all the scraps of foreign bodies have been removed.

Sudden Death After Fractures.—Villar excludes fat embolism in his three cases of death after fracture of long bones, as fat embolism is so rare. Even with the extensive fractures of the war and curetting the marrow cavity, fat embolism very seldom occurred. It develops also in the first few days, and death does not follow until several hours after the first symptoms. The robust men in his cases died in from five to fifteen minutes after the fractured right tibia and fibula had been examined and the callus palpated, or the man had been sitting up in bed to wash his face. Embolism from thrombosis would explain the fatal phenomena. They warn that thrombosis should be suspected in all cases of fracture, especially when the edema persists, and the possibility of embolism therefrom should guide the management of the case.

Journal de Radiologie et d'Electrologie, Paris

December, 1919, 3, No. 11

*Technic for Radium Treatment. C. Regaud and R. Ferroux.—p. 481.

*Radium Emanations in Ampules. S. Laborde.—p. 501.

*Roentgen-Ray Treatment of Pituitary Tumors. M. Jaugeas.—p. 508.

Practical Notes and New Instruments. Strohl and others.—pp. 516-519.

Technic and Record of Radium Treatment.—Regaud and Ferroux are in charge of the *Institut du Radium* at Paris which lends out radium tubes, and they emphasize the importance of a uniform style of record for all radium work. The quantity or dose is the product of the intensity multiplied by the time, but greater precision is realized when the dose (with radium emanations) is calculated from the millicuries lost during the application, that is, the difference between the millicurie power of the tube before and after. With radium itself, by the loss in emanations, that is, the emanations destroyed in the course of an hour (calculated by multiplying the weight in milligrams by the constant 0.00751). The filter, the area exposed, the distance, etc., must be recorded separately.

Condensed Radium Emanations.—Laborde is in charge of the radium service at the Hôpital Villemin, and he reports his experience with radium emanations in closed ampules. Of course they cannot compete with radium itself, but they have many advantages, especially that they can be supplied in any shape to fit any lesion, as in the form of a number of fine needles to be driven into a deep neoplasm. He has found that the annoying feature of the progressive loss of energy when emanations were used was often counterbalanced by the lesser risk from loss of the capsule.

Radiotherapy of Pituitary Tumors.—The death of Jaugeas was reported recently. He said in this article that the action of the roentgen rays can be estimated with greater precision in the effect on a tumor in the hypophysis region than in any other field of application of deep irradiation. The changes in the visual field parallel the benefit otherwise, and form a gage for the efficacy of the treatment. He describes a case of tumor in the pituitary with acromegaly in a woman of 25. The history of the case is shown by the charts of the field of vision at one and two year intervals, the visual acuteness finally approximating normal. Similar findings in another case rayed in 1914 show that the benefit has been permanent, so that the term "cure" is not out of place applied to such cases. The visual acuity is even better now, five years later, than when the patient was first dismissed. The acromegaly has not retrogressed, but it was arrested. Roentgen-ray treatment in these cases has to be applied early, when symptoms of hyperactivity become manifest, before the elements of the gland are destroyed. The raying must be cautious, to refrain from destroying the functional elements, as otherwise symptoms of deficiency would follow, analogous to experiences with the thyroid. The pulse in exophthalmic goiter and the visual field with pituitary tumors should be the guide to treatment. It should be suspended when these findings enter a stationary phase. It can be resumed if headache and impairment of vision indicate a

new *poussée évolutive*. The exposures should thus be given and suspended according to the individual findings from week to week, without any arbitrary regularity.

Lyon Médical

Jan. 25, 1920, 129, No. 2

*Dissociated Retention of Elements of the Bile. L. Bouchut and Lamy.—p. 53.

*Radioscopy in Diagnosis of Tuberculosis. A. Dumas and A. Corone.—p. 61.

Dissociated Retention of Bile Elements.—Bouchut and Lamy explain the progressive jaundice in the case they report as the result of injury of the liver cell itself. The urine abounded in bile pigments but no bile salts were found in it, while the stools were clay colored and there was nothing at the time or in the history to suggest gallstones. Hemolytic jaundice could also be excluded, but there were indications of alcoholism, and necropsy confirmed the liver disease, revealing cirrhosis of the hypertrophic, alcoholic type in the woman of 47, a cook. They describe how the conception of dissociated elimination of the elements of the bile throws light on a number of clinical pictures in which jaundice is a prominent symptom. Nothing but defective secretion or excretion in the liver itself will explain dissociated retention. Lyon and others have confirmed this experimentally with phosphorus, and with injection of cytotoxins acting on the liver. By thus electively injuring the liver cells, they induced dissociated retention just as it is observed in the clinic.

Radioscopy in Tuberculosis.—Dumas and Corone summarize their conclusions from roentgen-ray examination of 2,000 men suspected of pleuropulmonary tuberculosis at Saloniki in 1918. They emphasize that there is no pathognomonic picture, and that the greatest value of radioscopy is when the findings are negative. In the established cases, it yields important information as to the extent, evolution, etc., and in dubious cases may reveal a lesion when auscultation is negative.

Paris Médical

Jan. 10, 1920, 10, No. 2

*Rating Disability. R. Van Roy.—p. 37.

*Catarrhal Jaundice. E. Chabrol and J. Dumont.—p. 41.

*Urticaria from Emetin. R. Savignac and A. Alivisatos.—p. 43.

*Hemoglobin Reactions. L. Boyer.—p. 47.

Rating Disability.—Van Roy discusses the standards adopted by the French government and Belgium, and shows certain inconsistencies in the figures for the fingers and metacarpus.

Familial Epidemic of Catarrhal Jaundice.—The three cases in the family indicated an unmistakable infectious origin. A few spirochetes were found in the urine of one child but not in the others. The spirochetes did not show the characteristics of the icterohemorrhagiae type, and serologic tests were negative, as also with all other micro-organisms which have been incriminated in the etiology of infectious jaundice.

Emetin Urticaria.—Savignac found emetin in the urine up to three months after the last injection, and hence thinks there can be no doubt that it was responsible for the urticaria which developed fifteen days after some of the later injections, subsiding as they were suspended and returning on resumption of the drug. The urticaria at first was in the region of the injections but later became symmetrical and finally general. The last attack of urticaria occurred five months after the close of the emetin course (1919) and there has been no recurrence since. During the course there was also an attack of neuritis in one arm, but the chronic dysentery seemed to be finally cured by the treatment which had been continued at intervals for nearly a year.

Hemoglobin Reactions.—Boyer describes a number of reactions with hemoglobin and peroxidases with various stains, and commends particularly for detection of blood a mixture of diamino or triaminotriphenylmethane, sodium acetate, acetic acid, and zinc. The reaction is based on the peroxidating faculty of oxyhemoglobin or its derivatives, and avoids the errors with other reactions of the kind.

Presse Médicale, Paris

Jan. 14, 1920, 28, No. 4

- *Treatment of Puerperal Infection. F. M. Cadenat.—p. 33.
- *Tuberculosis of the Spine in Adults. J. Doche.—p. 35.

Vaginal Hysterectomy for Puerperal Infection.—Cadenat asserts that too many women die from puerperal infection. Aside from the fulminating fatal cases, there are many, he declares, that might be saved by early vaginal hysterectomy, and he describes with illustrations the exact technic for this, saying that it takes only from three to fifteen minutes in experienced hands; avoids contamination of the peritoneum, and insures ample drainage. It should be done whenever there is no appreciable improvement in twenty-four hours after clearing out the uterus with the curet, the temperature keeping high, with chills, and the pulse fast. The fear of injuring the bladder should not deter from the operation. It is better to have the patient live, even with a vesicovaginal fistula, than die because we are too timid to remove the focus of the infection.

Pott's Disease in Adults.—Doche found no tenderness on pressure in about 33 per cent. of thirty-one cases of caries of vertebrae in the dorsal region, and in 25 per cent. of 102 in the lumbar region in his 140 cases of Pott's disease in soldiers. Many of the men had been treated for months and even years for neuralgias of different kinds, gastralgia, kidney and liver colic, sciatica and torticollis, before any one had thought of incriminating the spine. Lateral curvature was evident in thirty of the 140 cases, and two thirds of the men were unable to bend the trunk forward or sideways, but not one of the total number was able to stretch his spine; hyperextension was absolutely blocked. All were given the regular helio-marine course of treatment at the sanatorium in his charge at Arcachon, and all without fistulas recovered, while the mortality was high among the men with infected fistulas. A tragic feature was that, among the forty-three with fistulas, in some they had been deliberately induced by opening up a closed and cold abscess in the iliac or lumbar region. The strain and privations of the war had reduced the vitality, but notwithstanding this the results of treatment were uniformly good when there was not some grave tuberculous lesion elsewhere or a spontaneous or operative fistula. Immobilization was with a cast in two parts. The front part was removed for the general sun bath; then it was replaced and the patient turned over, and the posterior part of the cast removed for exposure to the sun anew. Thus the sun baths were total while the immobilization was complete throughout. The neuralgic pains were not modified by the heliotherapy, and sometimes they compelled extension. All were kept reclining until six or eight months had elapsed since the last clinical symptoms. The abscesses were punctured; spontaneous resorption was very rare. In the cases with infected fistula, ample drainage and irrigation by the Carrel-Dakin method seem to offer a promise of better results, but his experience with this is too recent for a decisive judgement.

Progrès Médical, Paris

Jan. 4, 1920, 35, No. 1

- *Tumors in Greater Omentum. A. Aimes.—p. 1.
- Syphilitic Disease of the Stomach. M. L. Ramond.—p. 7.

Jan. 31, 1920, 35, No. 5

- Treatment of Epidemic Meningitis. Aynaud.—p. 45.
- Test for Sulphur in Urine. Rabaut and Stillmunkés.—p. 50.

Tumors in the Omentum.—Aimes classifies thirteen varieties of tumors found in the greater omentum, citing cases from international literature, and discussing the symptoms. The malignant tumors are large and very vascular by the time they reach the surgeon, and 25 per cent. of the patients succumbed to the operation, and only two lived for over a year. All forms of omental tumors demand prompt operative removal, he reiterates.

Revue de Médecine, Paris

September-October, 1919, 36, No. 5

- *Generalized Muscular Atrophy After Concussion. A. Leri, J. Froment and Mahar.—p. 481.
- *Tender Point in Neck with Abdominal Disease. A. Cade and G. Parturier.—p. 495.

- *Malignant Slow Endocarditis. R. Debré.—p. 508. Conc'n.
- *Maternal Serotherapy in Hemophilia. J. Chalier.—p. 522.
- *Sequence of Psychopathologic Phenomena. R. Benon.—p. 531.

Atrophy of Muscle from Concussion.—The shell concussion without direct injury was followed by complete muscular impotency for three months, and muscular atrophy developed and became generalized, but it has gradually receded in the course of the years.

Tender Points in Neck with Abdominal Disease.—Cade and Parturier report experiences which seem to show that the point in the neck where several nerves are accessible to pressure becomes tender when there is some painful pathologic condition in the upper region of the abdomen, on that side. This tender point on the right side coincided with painful disease in liver or gallbladder, especially from gallstones. When the tender point was exclusively or predominantly on the left side, it coincided with painful disease in the stomach or duodenum. In some of the cases reported, the organic lesion was an ulcer or cancer or cicatricial stenosis with fibrous bands. The tender points in the neck may be found with neuralgia or other nervous affections, but in these conditions the tenderness is bilateral and alike on both sides, and it subsides under atropin. The absence of the tender point does not exclude organic disease, as the causal lesion may be in a period of remission, even with a gastric cancer. The point in question is at the base of the neck, between the two heads of the sternocleidomastoid muscle. Several nerves pass here, and the cervical ganglion is anchored in the depths. Among the twenty-nine persons tested, the point was never tender with simple ptosis or simple enlargement of any organ.

Slow Endocarditis.—Debré here concludes his long report of his study of malignant endocarditis running a protracted course. The streptococcus in the blood settles on an already damaged endocardium, and the third phase of the disease is characterized by macroscopic and microscopic emboli which cause various symptoms in different organs. No treatment to date has displayed any durable efficacy, drugs, vaccines, etc. The only case of a cure on record was reported by Hemsted in the *Lancet*, Jan. 4, 1913. He combined an autovaccine with an antiserum obtained from horses immunized with the patient's own streptococci. This seems to be the only line which offers any chance of success. Debré's own experiences with it were failures, but better results may be anticipated when treatment is begun in an earlier stage.

Maternal Serotherapy in Hemophilia.—Chalier proclaims that serum from the mother's blood is the most effectual treatment known to date for congenital hemophilia. He applied it to a youth of 17 who from birth had been subject to hemophilia, and it was growing constantly worse. The mother's serum caused the son's blood to coagulate normally in the test tube, and he was given eleven intravenous injections of from 25 to 40 c.c. of the mother's serum in the course of eleven months. There was never any local or general reaction, and the young man's condition is now more favorable than at any time in his life. Chalier declares that this success encourages systematic infusion of maternal serum every tenth or fifteenth day, kept up for two years at least. In the present case the treatment was not as regular as he wished, owing to the distance from the home. The mother came to him to have the blood drawn, and the next day he took the serum to the patient for injection.

Significance of Sequence of Psychopathologic Phenomena.—Benon reports two cases in which the patients' introspection aided in the clinical and practical study of the pathologic condition, showing the succession and connection between the psychopathologic phenomena.

Schweizerische medizinische Wochenschrift, Basel

Jan. 8, 1920, 50, No. 2

- What Are Vitamins? A. Tschirch.—p. 21.
- *Prognosis with Mammary Cancer. H. Iselin.—p. 22.
- *Etiology of Actinomyces. W. Odermatt.—p. 26.
- *Sodium Chlorid Diuresis. S. Pollag.—p. 29.
- *Auto-Urine Test for Tuberculosis. Debré and Paraf.—p. 32; Idem. Wildbolz.—p. 32.

Pathologic Anatomic Findings in Prognosis of Mammary Cancer.—Iselin reviews the literature on the ultimate fate of breast cancers classified according to their histologic structure, and discusses the conflicting presumptions as to the prognosis based on the pathologic anatomic findings. In his own experience with recent reexamination of 102 patients with mammary cancer given both operative and roentgen-ray treatment, all but 4 of the 27 patients with scirrhus cancer had died within five years, while of the 56 with simple hard cancer 33 per cent. were living after five years and more, and 10 per cent. were alive from ten to fifteen years later. Of the 13 with medullary cancer, 66 per cent. survived for from five to sixteen years. Scirrhus cancers grow slowly and cause so little disturbance that they do not reach the surgeon until far advanced, while with the other forms of cancer the interval between detection and operation was only from a few weeks to three months at longest. The small cells of the scirrhus spread in all directions almost continuously, and thus involve the regions around more readily than other cancers. In all the cases in which there was long survival, the cells had been large, but in a few of the early fatal cases the cells had also been large, so that this is not the only factor in the prognosis. The fact that so many of the irradiated—even of those with involvement of the farthest glands in the supraclavicular fossa—survived for longer intervals is impressive testimony to the value of postoperative irradiation. Even without a radical operation or roentgen-ray treatment he has had survivals up to nine years. In one case the medullary cancer was excised, but the glands were involved to such a distance that no attempt was made to clear out the supraclavicular fossa, and no roentgen exposures were made; but the woman has been in perfect health during the thirteen years since. On the other hand, he has seen cases in which as late as nine years after both excision and roentgen exposures, internal metastasis and recurrence developed.

Actinomycosis.—Odermatt has met with a number of cases of actinomycosis of the mouth which had been mistaken for a dental affection; teeth had been drawn, etc., to no avail. Sleeping on straw or hay is a frequent mode of contamination, although the lesions may not become manifest for months up to two years afterward. He describes eight cases in soldiers in which this etiology was evident; in one case the incubation had been eight months long. Schlegel found that the dry spores germinated even after 238 hours of exposure to sunlight. The neck, jaws and the cheek are the most frequent localizations of the lesions, and toothache and swelling are among the first symptoms.

Salt Diuresis.—Pollag recalls that sodium chlorid has long been known to have a powerful diuretic action, and he has been using it systematically for this purpose as a last resort in advanced nephritis. The mechanism, he explains, is like that with ingestion of a single large amount of water in oliguria. It induces such a freshet that the kidneys are flushed open and may stay open. We have no means of knowing, however, which cases will respond favorably to this and which will only be aggravated by it. The same is true of the salt treatment. It is a last resource in desperate cases, seeking to modify conditions with a substance that is not alien to the organism, and which may induce the resorption of edema from heart disease. Four cases showing striking benefit are reported; all the patients had been for some time on a salt-free diet. In one case he believes that it saved the woman's life, transforming a menacing subacute nephritis into the second stage of chronic nephritis, with good concentration and compensation. The woman had taken 15 gm. salt in one day, and the diuresis increased from 250 or 600 to 1,500 c.c., and then to more than 3,750 c.c., for a month, while the edema subsided and the weight dropped by 15 kg. Pollag adds that when no benefit has been realized by abstinence from salt, giving a single large amount of salt during one day or three days during the week may jolt conditions back to approximately normal. There were never any untoward effects in his cases, such as have been observed with the "water freshet jolt" but of course such are theoret-

ically liable to occur. No other treatment was being given at the time in his cases.

Urine Test for Tuberculosis.—Debré and Paraf criticize Wildbolz' article on this subject (summarized in these columns, Aug. 9, 1919, p. 456) and Wildbolz replies.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 6, 1919, 40, No. 89

Pregnancy and the Statics of the Abdomen. M. Pavesi.—p. 963.

Nov. 9, 1919, 40, No. 90

Endocrine Origin of Rhizomelic Spondylosis. G. Radice.—p. 974.

Policlinico, Rome

Dec. 21, 1919, 26, No. 51

*Hemiplegia in Infant from Malaria. L. Spolverini.—p. 1507.

Atypical Forms of Typhoid. E. Mondolfo.—p. 1511. Conc'n.

Malarial Hemiplegia in Infant.—Spolverini comments on the rarity of malarial hemiplegia, even in adults, and reports a case in an infant in which only the blood findings gave the clue to the nature of the nervous disease. Under quinin the symptoms retrogressed in twenty-five days with merely slight limitation in the movement of one arm as the only trace left. Both parents had malaria at the time.

Riforma Medica, Naples

Nov. 8, 1919, 35, No. 45

Gunshot Wound of Liver and Bile Ducts. D. Maragliano.—p. 970.

*Sugar Infusion. E. Zagari.—p. 972.

*Pathogenesis of Orbital Cysts. V. Cavaia.—p. 978.

*Acetonuria from Fatigue. Azzo Azzi.—p. 981.

Cicatricial Stenosis of Larynx. E. Aievoli.—p. 984.

Infusion of Sugar Solution.—Zagari reproduces the ergograms and other records of a number of patients with post-malarial anemia, chlorosis or movable kidney, after subcutaneous injection of an isotonic solution of glucose. The record of the muscular exertion showed considerable increase after each injection and more after a series. There was usually a general and febrile reaction by the next day after the first injection but not after the others, and no other by-effects were noted. The output of urine increased after each injection and kept high for some days after suspension. The dose was from 500 to 700 c.c. of a solution of 47 gm. glucose with distilled water to 1,000 c.c. The improvement in energy and the diuresis that followed suggest the wisdom of substituting glucose for sodium chlorid in the so-called physiologic solutions, even when there is no special reason for dropping salt.

Orbital Cysts.—Cavaia's case represents, he says, the first instance of a congenital orbitopalpebral cyst in which the entire eyeball was represented by the cyst.

Acetonuria from Fatigue.—Azzi found an average elimination of acetone bodies amounting to 0.0136 gm. in the twenty-four hours in a healthy man in the ordinary conditions of life. After becoming much fatigued, the amount increased to 0.9 and even 1.44 gm. and on repeated fatigue to 2.5 gm. The tests were made on himself during three weeks of mountain climbing. The ammonia content and the acidity of the urine varied irregularly, but the increase in the acetone output paralleled regularly the exertions inducing fatigue. The acetonuria persisted as long as the sensation of fatigue lasted, disappearing when he felt completely rested. The presence in the blood of the acetone bodies generated during the extra physical exertion is therefore probably one of the causes of the sensation of weariness.

Archivos Españoles de Pediatría, Madrid

November, 1919, 3, No. 11

*Prophylaxis of Tuberculosis. Genaro Sisto.—p. 641.

Needed Hygienic-Sociologic Reforms. F. Criado Aguilar.—p. 651.

Dystrophy of the Teeth in Inherited Syphilis. J. González J. Meneses.—p. 662.

*Tardy Eruption in Scarlet Fever. J. Mut.—p. 666.

Prophylaxis of Tuberculosis.—This article was written for conditions in Argentina.

Tardy Eruption in Scarlet Fever.—In Mut's case all the symptoms of scarlet fever developed in the child of 4, but

not in their regular order. There was an interval of three weeks before the eruption appeared, and the typical sore throat appeared at the close of the clinical picture, the sore throat of the onset and a long gastro-intestinal phase rendering the diagnosis dubious.

Archivos Latino-Amer. de Pediatría, Buenos Aires

November-December, 1919, 13, No. 6

- *Meningeal Mask of Acute Nephritis. J. Bonaba.—p. 501.
- *Infantilism. A. Carrau.—p. 505.
- *Hydatid Cyst of Brain. Ponce de León.—p. 518.
- *Little's Disease. R. Berro and W. Piaggio Garzón.—p. 524.
- *Pericarditis in Typhoid. M. Ponce de León.—p. 530.
- *Dystrophies with Inherited Syphilis. V. Zerbino.—p. 539.
- *The Pneumococcus in Meningitis. J. Bonaba.—p. 546.
- *Child Welfare Work in Argentina. M. Avila Méndez.—p. 550.
- *Breast Milk Given Out at Milk Station. E. Gaing.—p. 569.

Meningeal Mask of Acute Nephritis.—Bonaba relates that two children were brought to the hospital on succeeding days with symptoms of meningitis, in a comatous condition. The disease had begun five days and fifteen days before, with headache, fever, and edema, and one had had convulsions the last night. The spinal fluid was normal, but the urine showed casts and other signs of nephritis. On restriction to milk both children rapidly recovered. This meningeal mask of the acute nephritis, and the coincidence of the two cases were striking features, as also the independent development of the nephritis.

Infantilism.—Carrau incriminates thyroid deficiency as responsible for the infantilism in one of the two cases he describes, and polyglandular deficiency in the other. Both of the patients, in body and mind, seem very much younger than their actual age (13 and 17). Thyroid treatment or polyglandular treatment seems the only hope in such cases.

Death After Spinal Puncture with Cerebral Cyst.—Ponce de León applied lumbar puncture to clear up a puzzling case of headache and vomiting in a boy of 11. The headaches had begun three months before, and the child preferred to lie down all the time. In the last six weeks the headache had grown worse, especially at night, and vomiting was frequent, and there was hypertonicity and also exaggeration of the reflexes. The region of the frontoparietal sutures was tender, and the legs were somewhat stiff but there was no paralysis. Lumbar puncture released 10 c.c. of normal fluid, but a few hours later the headache became intense and the child died, just twelve hours after the puncture. Morquio recently cited a very similar case in which he refrained from lumbar puncture, but the child died in this same sudden way.

Little's Disease.—The mind seems normal in the young child with congenital spastic paraplegia whose case is described by Berro and Piaggio. The child was born prematurely, and they ascribe the paraplegia to this fact, the pyramidal tracts not having had time to reach their full development.

Tuberculous Pericarditis in Typhoid.—Ponce de León witnessed the development of a primary tuberculous pericarditis which passed into a chronic phase in the girl of 10. It first appeared during convalescence from typhoid fever. The liver was also enlarged but there was no ascites, the clinical picture suggesting Hutinel's tuberculous cardiohepatic cirrhosis. Until ascites develops this may often escape detection.

Defective Development in Inherited Syphilis.—Zerbino gave specific treatment to an infant that seemed normal at birth and thrived on breast milk at first. Then it began to show digestive disturbance and lose weight. Under specific treatment it began to thrive again, even on artificial food. Even with negative Wassermann reaction, he says, the possibility of this *distrofia heredo-sifilitica* should be borne in mind whenever an infant does not seem to be thriving and yet no other cause for this can be discovered.

Meningitis with Pneumococcus Invasion.—Bonaba emphasizes the importance of disinfection of the nasopharynx in cases of meningitis, as otherwise the pneumococcus may invade the meninges as in the child described. Netter suggests adding a little antipneumococcus serum to the antimeningococcus serum. Twenty-two cases are on record in

which the pneumococcus invaded the meninges in the course of meningococcus meningitis.

Child Welfare Work in Argentina.—Avila Méndez describes the organization, development and functioning of the various *institutos de puericultura* and the dispensaries for sick and for well babies.

Distribution of Bottled Breast Milk.—Gaing expatiates on the advantages of distribution of breast milk, saying that the *Instituto de Puericultura Güemes* thus distributed over 4,000 bottles of breast milk in 1917 and nearly 3,000 in 1918. This practice was begun in 1914, and long since demonstrated the transcendent importance of this supply of human milk from healthy women under medical supervision.

Prensa Médica Argentina, Buenos Aires

Dec. 20, 1919, 6, No. 20

- *Ascites with Inherited Syphilis. C. Bonorino Udaondo and J. E. Carulla.—p. 201.
- *Tertiary Syphilis of the Liver. H. L. Carretti.—p. 203.
- Reinfection in Inherited Syphilis; Two Cases. J. Palacio.—p. 207.
- Influenza in Orphan Asylum. R. Ortega Belgrano.—p. 210.
- Arrhythmias. Pablo M. Barlaro.—p. 210. Cont'n.

Ascites with Inherited Syphilis.—Bonorino and Carulla report the case of a man of 32, a hard drinker, who developed venous cirrhosis of the liver with a stormy onset and rapid ascites. There were evidences of inherited syphilis and the ascitic fluid was milky. The duodenal contents seemed to be normal, confirming further the syphilitic nature of the cirrhosis, and it promptly subsided under specific treatment, as in a second case with similar alcoholism and inherited syphilis. The alcohol had reduced the resisting powers of the liver and allowed latent syphilis to flare up and settle here. These experiences, they remark in conclusion, emphasize the importance of giving specific treatment a trial at least in all cases of cirrhosis of the liver of the atrophic type. It has often failed to relieve, but in many cases the benefit amounted to a practical cure.

Tertiary Syphilis of the Liver.—Carretti enumerates the various clinical pictures which may be induced by tertiary manifestations of syphilis in the liver. The examples he cites show that the clinical pictures with either inherited or acquired syphilis may resemble those of all the known types of liver disease and also of disease of organs in the vicinity of the liver. Tentative specific treatment should be instituted, he insists, in every case of liver disturbance in a person with or suspected of inherited or acquired syphilis, and also in every case of cancer of the liver with an unfavorable prognosis even where there is nothing to suggest syphilis. Among the personal cases reported, is one in which a supposed hydatid cyst in the liver vanished under mercury and iodid; the man of 30 had certain stigmata of inherited syphilis.

Repertorio de Medicina y Cirugía, Bogota

December, 1919, 11, No. 3

- Intraspinal Treatment of Neurosyphilis; Four Cases. F. Lleras Acosta and J. del C. Acosta V.—p. 115.
- *Low Blood Pressure in Typhoid. R. Sanmartín L.—p. 148.

Low Blood Pressure in Typhoid.—Sanmartín noted unusually low blood pressure in six recent cases of typhoid. Assuming that the suprarenals were suffering from the disease, he gave a 1:1,000 solution of epinephrin to supplement their deficient functioning. The output of urine decreased during the low pressure period but returned to normal after the epinephrin was given. Five drops every three hours were given at first and then 5 or 10 drops daily to keep the pressure normal. In one very grave case, 10 drops were given four times one day by the mouth, and later 40 drops were injected subcutaneously, with a maintenance dose of 30 drops by the mouth daily, and camphorated oil was injected daily after the seventh day as the blood pressure dropped dangerously when drugs were suspended. The blood pressure in this person was normally very low, which explained the peculiarly grave situation during the typhoid. All the six patients recovered; in the one case with a six day relapse the tenth day after defervescence, no effect on the blood pressure was apparent then from the epinephrin.

Revista Médica del Uruguay, Montevideo

December, 1919, 22, No. 12

- *Radiologic Diagnosis of Appendicitis. R. Duque Estrada.—p. 827.
 *Prophylactic Serotherapy for Parturients. H. García San Martín.—p. 834.
 *Epidemic and Tuberculous Meningitis. L. Morquio.—p. 847.

Roentgen-Ray Diagnosis of Appendicitis.—Duque Estrada has examined with the roentgen rays over 2,200 cases in which appendicitis was suspected, and relates that the findings were instructive except in the acute cases. Here they served merely to eliminate displacement of the cecum as responsible for the disturbances. The diagnosis of appendicitis cannot be reduced to an algebraic formula that pain at McBurney's point = appendicitis. Many other factors must be taken into account, including the shape, mobility, and time of evacuation of the appendix. The roentgen picture cleared up the diagnosis in 60 per cent. of his cases.

Prophylactic Antistreptococcus Serum for Parturients.—García has been making a practice of injecting from 20 to 40 c.c. of antistreptococcus serum in every woman entering the maternity in labor. A series of 100 parturients, all in exclusively physiologic conditions, and all injected with the antiserum, are compared with 100 absolutely analogous cases but without the antiserum. He was amazed to find that the number of cases of puerperal infection was nearly twice as large (twelve) in the injected series as in the noninjected (seven). He theorizes to explain this, suggesting that the antiserum may have depressed the resisting powers, or induced changes in the depths of the tissues like the urticaria and other superficial phenomena of serum sickness. We know that the antiserum modifies the blood picture, and the reaction may change from the early high leukocytosis to actual leukopenia. Cases have been recorded in which the leukocytosis of 13,640 at first dropped to 2,530 as symptoms of serum sickness developed. The preventive antiserum may thus reduce the organic resistance and actually promote infection, allowing it to get a firm foothold.

Epidemic and Tuberculous Meningitis.—Morquio has encountered twenty-three cases of tuberculous meningitis within little more than a month in children from 6 months to 15 years old, an unprecedented number in such a short period, but all had had influenza from a few days to two or three months before. Some had seemed to be entirely healthy previously. It is not always easy to differentiate it from epidemic meningitis; it may develop suddenly and run a fulminating course, fatal in a week. On the other hand, he has had cases of epidemic meningitis which dragged along with a subacute attenuated course with exacerbations and remissions like those of tuberculous meningitis. But, with the latter, lymphocytes predominate in the limpid cerebrospinal fluid, which contains from 100 to 500 elements. With epidemic meningitis, the cerebrospinal fluid may finally assume these characteristics, spontaneously or under the influence of the antiserum. This may lead to the assumption of tuberculous meningitis unless lumbar puncture has previously demonstrated the characteristics of the epidemic form. The differential diagnosis is exceptionally important in these cases, as all depends on the prompt use of the antimeningococcus serum. In a case described, the lumbar fluid at the sixth day of the sickness was turbid and contained innumerable formed elements, polynuclears predominating. Twenty-four hours later the fluid was clear, with only 192 elements, and lymphocytes predominated. This pointed to tuberculous meningitis, but on the basis of the first findings, he injected antimeningococcus serum and the cure was prompt and complete. In another case, likewise at the sixth day, the lumbar puncture fluid was purulent, with 79 per cent. polynuclears, but the next day the fluid was clear, with 480 elements, and 95 per cent. of them were lymphocytes. The meningococcus was cultivated from the fluid and a complete cure followed a single dose of 15 c.c. of the antiserum. He comments on the rapidity of the change in the cerebrospinal fluid, and the liability of mistaking for tuberculous meningitis cases of the epidemic form with clear fluid, with or without polynuclears, and the form with lymphocytosis and rapid recovery. The onset may have been

typical, but by the time the physician sees the case, the clinical picture may have become modified into an abortive, atypical form, difficult to label.

Semana Médica, Buenos Aires

Nov. 13, 1919, 26, No. 46

- *Surgery for Children. J. M. Jorge.—p. 585.
 *Survival of Fetus after Loss of Pulsation in Cord. E. A. Boero.—p. 594.
 Vaccine Treatment of Diphtheria. L. A. García.—p. 595.
 *Sarcoma of Eyelid. Paulina Satanowsky.—p. 600.
 *Mishaps with Induced Pneumothorax. A. Cetrángolo.—p. 603.
 Surgery of Semilunar Cartilages. Artemio Zéno.—p. 609.
 *Transient Unilateral Amaurosis. P. B. Ferro.—p. 611.

Surgery for Children.—Jorge remarks that it is distressing to hear the parents tell of the conflicting advice they have received from the different medical men they have consulted in regard to congenital defects or acquired deformities of their children. Physicians in general, he says, seem to have such vague and erroneous ideas in regard to them and they allow the deformity to progress, or exaggerate it by some mutilating operation, or merely advise taking the child to Europe or North America. His article is a plea for the founding of a chair of surgery for children and orthopedics at Buenos Aires.

Survival of Fetus when there is no Pulsation in the Cord.—Boero confirms Balard's recent statement that the blood stream may be passing through the prolapsed cord even when no pulsation is apparent in it. The fetal heart can be felt or heard beating on intra-uterine exploration or through the walls. The survival of the fetus can thus be determined, instead of taking its death for granted when the cord ceases to pulsate.

Sarcoma of Eyelid.—The melanic sarcoma had grown from the conjunctiva of the upper lid, and it was successfully removed by Cisnero's *electro-coagulo-ignicion* method, charring a circle of tissue all around the tumor and thus preventing hemorrhage. There were several papillomas on both the upper and lower lid, and all were burnt off by this same method. The sarcoma had developed to a size of 10 by 13 mm. in less than a month after it had first been discovered.

Mishaps with Induced Pneumothorax.—Cetrángolo agrees with Morelli in the assumption that instances of disagreeable by-effects with therapeutic pneumothorax are not always published. The physician should not be too timid nor overconfident in applying the procedure, relying too exclusively on the manometer. In his own extensive experience there have been several cases in which hemoptysis or subpleural and subcutaneous emphysema developed, four of secondary valve formation, and one of gas embolism. Faulty technic was responsible in this latter case; the young man had long been returning weekly for insufflation of 200 or 300 c.c. of oxygen and was doing finely, having gained 10 pounds in weight and the fever having disappeared. As Cetrángolo introduced the needle he felt the usual sensation of having traversed the pleura, but the manometer did not waver. Instead of waiting for the usual fluctuations, he began the insufflation. The patient complained at once of intense precordial pain and numbness in his arm. The needle was withdrawn, but the young man became unconscious after some convulsive movements, with complete arrest of the heart action and breathing. Under artificial respiration, injection of camphorated oil and inhalation of oxygen, he promptly revived but seemed dazed. This and facial paralysis persisted till night, and there was some vomiting. But all was normal the next day and he had no remembrance of the mishap. The lesson from it is that the gas must not be pumped in before the manometer gives the signal. If a little is allowed to enter, it should merely flow in gently. The whole storm passed over in three minutes; probably the fact that oxygen was the gas being used had a great influence on the promptness of the recovery.

The symptoms from secondary valve formation are those of progressive suffocation, an opening allowing the gas to pass, but a valve shutting off its return. Intense pain at the site of the insufflation and progressive dyspnea half an hour to two hours afterward compelled puncture to release the

gas, unless relief was obtained by a spontaneous subcutaneous emphysema. The pressure had increased from 0 to 20 in one of these cases, and the heart was much hampered. The symptoms kept recurring through three days in this case. In all of this group of four the pulmonary lesions were grave and of long standing; the traction on fibrous bands evidently tore out a piece from the parenchyma of the lung during coughing. Hemoptysis was due to pricking a blood vessel, or to activation of the focus in the other lung from traction by bands, or to inadequate compression. In one case described, severe hemoptysis followed insufflation of small amounts of gas, 300 or 500 c.c., but it ceased when the amount was increased, and marked improvement followed.

The Curtain Visual Phenomenon.—Ferro asks for the explanation of the phenomenon he describes which he has encountered in three men of about 50, two of them physicians and all apparently healthy, with normal urine and fundus findings. Once in a while vision seems to be gradually shut off in one eye, and then it gradually returns, the sensation resembling the lowering of the asbestos curtain in a theater.

Deutsche medizinische Wochenschrift, Berlin

Nov. 13, 1919, 45, No. 46

- *The Origin of Tumors. H. Ribbert.—p. 1265.
- *Trauma in Relation to Arteriosclerosis. E. Fraenkel.—p. 1268.
- *Tuberculosis in Cold-Blooded Animals. F. Klopstock.—p. 1269.
- Dinitrobenzene Poisoning. A. H. Hübner.—p. 1272.
- *The Sachs-Georgi and the Meinicke Reactions. K. Merzweiler.—p. 1273.
- The Rumpel-Leede Scarlet Fever Phenomenon. H. Müller, Jr.—p. 1275.
- *Persistent Salvarsan Exanthems. Dora Fuchs.—p. 1276.
- *Remarkable Case of Apparent Death. E. Rautenberg.—p. 1277.

The Origin of Tumors.—Ribbert regards the hereditary factors of all diseases as qualities common to mankind in general, and believes that they are transmitted from one generation to another in the same manner as normal qualities. We must not imagine, he says, that mankind was originally perfectly healthy, but rather assume that from the beginning man was more or less affected by countless anomalies, which, with certain interruptions or skips, manifest themselves in successive generations. We can establish the conditions under which tumors occur, which is as far as we can go with any so-called explanations in the realm of science. A tumor cannot be produced experimentally unless the predisposition thereto exists beforehand, and only so far as such predisposition exists, is it possible for any exciting cause to act on germ cells in such a manner as to cause a tumor to develop. If cancer is hereditary in certain cases, which, in the face of accumulated evidence, can scarcely be denied, it is probably hereditary in all cases. Cancer resulting from industrial contact with pitch, paraffin and arsenic indicates that an external agent sometimes plays a secondary rôle in the development of cancer. This type of cancer suggests also that carcinogenetic deviations from the normal structure of various epitheliums are much more widespread than is commonly supposed, and that by far the majority of the anomalous predisposing germ cells remain quiescent and never develop into cancer. Ordinarily, however, tumors develop "spontaneously" without exciting cause, that is, owing solely to the presence of anomalous predisposing germ cells.

Trauma in Relation to Arteriosclerosis.—While Fraenkel admits that there is no connection between general arteriosclerosis and previous trauma, and still holds fast to the view that sclerosis of the cranial arteries following head trauma is absolutely unproved, he does believe that the case he reports in detail furnishes strong evidence for the assumption that localized sclerosis of the abdominal aorta following trauma does occur. Fraenkel's patient, aged 29, was paralyzed from a gunshot wound of the spine. A year and a half afterward, necropsy revealed changes in the lower segment of the abdominal aorta, which he describes, and which experts declared to be typical arteriosclerosis, but the process was localized exclusively in the region which might easily have been affected by the trauma from the shell wound, a scrap of shell having been found in the lower dorsal cord.

Tuberculosis in Cold-Blooded Animals.—An extensive series of investigations leads Klopstock to the conviction that the tubercle bacillus of man and warm-blooded animals may change into the type found in cold-blooded animals.

The Sachs-Georgi and the Meinicke Reactions.—After examining over 700 serums by the Sachs-Georgi and 366 by the Meinicke method, Merzweiler reaches the conclusion that the Meinicke reaction in its present form cannot be considered an adequate substitute for the Wassermann test. The Meinicke reaction gives a larger percentage of unspecific positive results than the Wassermann reaction. However, Merzweiler found that the Sachs-Georgi reaction, as used in large laboratories where two or three series of tests with fresh extracts are made each week, may be regarded as a complete substitute for the Wassermann reaction. A weak point in the Sachs-Georgi reaction is that it is not reliable when applied to extracts five days old.

Persistent Localized Salvarsan Exanthems.—Fuchs reports the case of a patient who in 1915 was admitted to treatment with a beginning paralysis. Immediately after every neosalvarsan injection (0.45-0.6 gm.) a reddening of the bulbar and palpebral conjunctiva and lacrimation occurred, always in the right eye, disappearing in a few hours. In 1916 the patient was treated with 0.45 and 0.3 gm. of sodium salvarsan, respectively, without any conjunctival reaction. In 1917 there was no unfavorable reaction following repeated sodium salvarsan injections. After 0.45 gm. of neosalvarsan, however, the same conjunctival reaction occurred as in 1915. February 20, 1917, three minutes before the injection of 0.45 gm. of neosalvarsan, 0.5 c.c. of a 1:1,000 epinephrin solution was administered. The reaction of the conjunctiva appeared less promptly and less intensively, and passed off sooner. The patient was then given daily from 1 to 3 gm. of hexamethylenamin and no reaction occurred. February 25, with the same dose of neosalvarsan, the same observations were made as on February 20. September 2, before the injection of 0.45 gm. of neosalvarsan, 1 c.c. of a 1:1,000 epinephrin solution was administered. A very slight irritation of the conjunctiva followed. September 19, after the usual 0.45 gm. dose of neosalvarsan, given four minutes after the injection of 0.5 c.c. of a 1:1,000 epinephrin solution, there was no reaction, confirming the prophylactic importance of epinephrin in warding off side effects from arsphenamin treatment.

A Remarkable Case of Apparent Death.—Rautenberg reports the case of a nurse, aged 23, who, Oct. 27, 1919, took in one dose 1.7 gm. of morphin and 5 gm. of barbital. When found in the park next day, life was almost extinct. She was thought to have died in the ambulance. The indications of death were: rigidity; intense pallor; absence of reflexes, pulse, respiration and heart beat. Hot sealing wax gave no skin reaction. After fourteen hours in the morgue, an official desiring to identify the body, October 29, the coffin was opened. The cheeks had a purplish tinge, and the larynx moved slightly. There were no respiratory movements nor pulse beat, but muffled heart sounds were audible. At 10 a. m. the patient was taken to the hospital. Camphor and caffein were given subcutaneously and stomach lavage was done. A hot bath was given and a flesh brush was applied vigorously, with artificial respiration and oxygen inhalation. At 11 a. m. the pulse could be felt, and short, jerky inspiration was noted. Rigidity of the limbs abated. At 12 the pulse was above 50. October 30, the patient regained consciousness and made a few statements. There were no signs of pneumonia, but persistent leukopenia was present. How is it possible for a human being to live more than twenty-four hours without respiration and blood circulation? Rautenberg explains the strange condition as due to the effect of the narcotic and the cold which, acting together, brought about a paralysis of the vasomotor nerves and thus reduced the needs of the body to a minimum, the narcotic paralyzing the central nervous system, and the cold effecting the rigid paralysis of the organs. He thinks the cold may have prevented rapid resorption of the alkaloid.

The condition was similar to that of hibernation of animals, and this fact tided the organism past the danger of pneumonia.

Deutsche Zeitschrift für Chirurgie, Leipzig

May, 1919, 149, No. 5-6

*The Loose Bodies with Arthritis Deformans. Lucia Hahn.—p. 289.

*Treatment of Pseudarthrosis. H. E. Brunzel.—p. 394.

*Incarcerated Pectineal Hernia. W. Lehmann.—p. 409.

*Spastic Ileus. H. F. Brunzel.—p. 414.

*Salivary Fistula. H. Weitz.—p. 419.

Loose Bodies in Joints.—Hahn analyzes the findings in knee or elbow in eight cases of deforming arthritis and in a number of other joint cases. Her findings confirm the two modes of origin of the loose bodies with deforming arthritis, from a nucleus of cartilage, or of spongy bone tissue. She states that they were always multiple, while the traumatic loose bodies are single.

Treatment of Pseudarthrosis.—Brunzel regards direct injection of tincture of iodine as the most effectual means to induce fibrinous inflammation, and thus accelerate the healing of pseudarthrosis. In his experience with it he injected up to 20 c.c. of the 5 per cent. tincture of iodine (diluted with an equal amount of 96 per cent. alcohol), distributing the fluid throughout the area, depositing some under the periosteum at each end of the pseudarthrosis. In stimulating the healing of fractures and pseudarthrosis which are tardy in consolidating, he has found obstructive hyperemia very useful, but he restricts it exclusively to the site of the fracture. He accomplishes this by applying a close fitting plaster cast with a window over the lesion. The tissues swell up in this window and a localized passive hyperemia results, which he thinks aided materially in hastening the healing. This passive hyperemia is under constant control, the "window tumor" increasing or subsiding as the leg is used, or is raised. This alternation of passive and active hyperemia through the region seemed to be an important factor in the prompt healing in the four cases described. The method did not display the same efficacy when applied to the arms, or to gonorrheal arthritis. The successes were with simple fracture or pseudarthrosis in the legs.

Pectineal Crural Hernia.—Lehmann adds another to the comparatively few cases on record of successful operation for an incarcerated Cloquet hernia.

Laparotomy for Spastic Ileus.—Brunzel's patient was a nurse of 30, of a nervous and hysteric temperament, with repeatedly recurring attacks of ileus, one finally so severe that the abdomen was opened. Nothing pathologic was found, but she supposed that a strangulated loop had been corrected, and she has been free from all disturbances during the five months since the laparotomy to date.

Treatment of Parotid Fistulas.—Weitz reports a case in which he applied Leriche's method of treating chronic salivary fistulas, by resecting the auriculotemporal nerve which presides over the secretion of saliva. In Weitz' case the fistula had persisted for twenty years. The secretion from the fistula stopped at once, and the fistula soon healed.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 6, 1919, 2, No. 23

The Language of Medical Writings. VI. A. Kluyver.—p. 1857.

*Reform in Medical Teaching. IV. G. van Rijnberk.—p. 1861.

Phenylethylbarbituric Acid in Therapeutics. S. Koster.—p. 1866.

*The Attendants on Contagious Diseases. M. Niemeijer.—p. 1873.

*Fatal Familial Icterus Neonatorum. G. A. Prins.—p. 1880.

Reforms in Medical Teaching.—Van Rijnberk declares that the medical curriculum was planned at a time when the general practitioner was supposed to know something of every branch of medicine, and be prepared to treat everything that turned up. He insists that this is an anachronism now, and he urges that everything should be dropped from the regular medical course except what is basic to all medicine and to all specialties. This would materially lighten the medical course by eliminating everything suggesting any of the individual specialties. The first ten semesters would be the same for all; then the course would branch. The eleventh semester given mainly to obstetrics would entitle to

the degree of general practitioner. Addition of a twelfth, given to gynecology, to the degree of specialist in gynecology. The eleventh and twelfth semesters devoted to roentgenology would give the degree of radiologist. At present, he says, many of those wielding the dangerous rays are like children playing with fire. Other specialties would require the eleventh and twelfth semesters in special studies. He adds that although this plan he knows is a *utopic-fantasia*, yet it has a number of vital advantages, not the least of which is that the patient would be handed over to the specialist at once, the practitioner not only knowing his incompetency but being restrained by law from experimenting in the specialty without the special diploma.

Prophylaxis of Contagious Diseases.—Niemeijer discusses whether it is safe to allow nurses and other attendants in contagious disease isolation hospitals to go to church or mix with people elsewhere during the daily hours off duty. The nurse is in such intimate contact with the patient that the danger of becoming a carrier is much more acute than in the case of any other person, and he is inclined to agree with those who think that with scarlet fever, at least, the nurse should be isolated the same as the patient. A committee of five physicians appointed in his town by the national public health authorities took the opposite view, allowing the nurses to come and go provided extremely strict measures to prevent infection are observed in regard to changing clothing, etc. The committee advise further that a special place in the church should be set apart for them. The only exceptions specified by the committee are smallpox and bubonic plague. In conclusion he cites from a German textbook to the effect that there is no evidence that scarlet fever occurs any more frequently in physicians' families than in the general population.

Familial Icterus Neonatorum.—Prins thinks that nothing but a familial constitutional inferiority of the liver parenchyma will explain the cases related. The woman's first two children were normal but then she met with an accident, falling on her back, and since then the children born were normal at first but by the third day intense jaundice developed. One threw it off in a few days, but a following pair of twins developed the jaundice the third day and both died. The last child also developed the icterus the third day although it seemed otherwise normal in every respect, and it died two days later. The only pathologic finding at the necropsy was an extremely thick and tenacious bile, with bile thrombi in the biliary capillaries, and evidences of phagocytosis in the spleen.

Ugeskrift for Læger, Copenhagen

Jan. 29, 1920, 82, No. 5

*The Lesions in a Railroad Accident. J. Fog.—p. 145.

The Injured in a Railroad Accident.—Fog describes the case-histories of forty-five persons injured in an accident, including 4 persons in whom the mind alone was affected; the others required surgical measures. There were 26 with fractures, and 78 fractured bones in the 40 that were killed at once. All the injured complained of intense thirst and cold, but they said they did not feel pain from their injuries. The screaming was from the fright. Meisen compares the lesions and traumatic neuroses with those of the war, saying that the mental condition was exactly like that of shell shock, and also the physical shock seemed to be the same, as evidenced by the pallor, chilliness, imperceptible pulse and mental confusion. The latent period before the mental phenomena developed was also like that observed in the war wounded or shell shocked. He emphasizes the necessity for distinguishing between shock conditions and those from internal hemorrhage.

Upsala Läkareförenings Förhandlingar

Jan. 10, 1920, 25, No. 1-2

Illumination of Tumor in Choroid. C. Lindahl.—p. 1.

The Separation of the Senses. H. Ohrvall.—p. 21.

The Proteolytic Enzyme of Fibrin. J. Möllerström.—p. 55.

Normal and Pathologic Depression and Depression-Psychoses. H. Sjöbring.—p. 73.

THE NEW ORLEANS SESSION

AMERICAN MEDICAL ASSOCIATION, SEVENTY-FIRST ANNUAL SESSION
NEW ORLEANS, APRIL 26-30, 1920

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The seventy-first annual session of the American Medical Association will be held in New Orleans, La., April 26-30, 1920.

The House of Delegates will convene at 10 a. m., Monday, April 26. In the House the representation of the various constituent associations for 1920 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	3	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	6
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	2	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	8	South Carolina	1
Indiana	3	South Dakota	1
Iowa	3	Tennessee	2
Kansas	3	Texas	5
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	1	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8:30 p. m., Tuesday, April 27. The Sections will meet on Wednesday, Thursday and Friday, April 28, 29 and 30, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON

Surgery, General and Abdominal	Pharmacology and Therapeutics
Ophthalmology	Preventive Medicine and Public Health
Diseases of Children	Urology.
Nervous and Mental Diseases	

CONVENING AT 2 P. M. THE SECTIONS ON

Practice of Medicine	Stomatology
Obstetrics, Gynecology and Abdominal Surgery	Dermatology
Laryngology, Otology and Rhinology	Orthopedic Surgery
Pathology and Physiology	Gastro-Enterology and Proctology.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, April 26, 27, 28 and 29, and from 8:30 a. m. to 12 noon, on Friday, April 30.

ALEXANDER LAMBERT, President.

HUBERT WORK, Speaker, House of Delegates.

ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA S. G. Gay, Selma. F. W. Wilkerson, Montgomery.	L. F. Woodward, Worcester. F. B. Lund, Boston. E. F. Cody, New Bedford.
ARKANSAS R. C. Dorr, Batesville. William R. Bathurst, Little Rock.	MICHIGAN A. W. Hornbogen, Marquette. F. C. Warnshuis, Grand Rapids. Guy Connor, Detroit. J. D. Brook, Grandville.
CALIFORNIA A. B. Spaulding, San Francisco. C. Van Zwahlenburg, Riverside. Victor Vecki, San Francisco.	MINNESOTA W. H. Magie, Duluth. J. W. Bell, Minneapolis.
COLORADO J. N. Hall, Denver.	MISSISSIPPI Willis Walley, Jackson.
CONNECTICUT John E. Lane, New Haven. Walter R. Steiner, Hartford.	MISSOURI W. J. Ferguson, Sedalia. A. R. McComas, Sturgeon. Franklin E. Murphy, Kansas City. R. M. Funkhouser, St. Louis.
DELAWARE P. W. Tomlinson, Wilmington.	MONTANA E. W. Spotswood, Missoula.
DISTRICT OF COLUMBIA William Gerry Morgan, Washington.	NEBRASKA Joseph M. Aikin, Omaha. LeRoy Crummer, Omaha.
FLORIDA John S. Helms, Tampa.	NEVADA M. A. Robison, Reno.
GEORGIA S. R. Roberts, Atlanta. H. H. Martin, Savannah.	NEW HAMPSHIRE D. E. Sullivan, Concord.
ILLINOIS R. J. Coultras, Mattoon. T. D. Doan, Scottville. E. B. Coolley, Danville. C. E. Humiston, Chicago. L. Hektoen, Chicago. C. W. Leigh, Chicago. J. H. Rice, Quincy. M. L. Harris, Chicago.	NEW JERSEY Frank J. Keller, Paterson. George E. Reading, Woodbury.
INDIANA Joseph R. Eastman, Indianapolis. George W. Spohn, Elkhart. Albert E. Bulson, Jr., Fort Wayne.	NEW MEXICO W. T. Joyner, Roswell.
IOWA John C. Rockafellow, Des Moines. M. N. Voldeng, Woodward. Wm. B. Small, Waterloo.	NEW YORK James W. Fleming, Brooklyn. Dwight H. Murray, Syracuse. Frederic E. Sondern, New York. George W. Kosmak, New York. Arthur J. Bedell, Albany. James F. Rooney, Albany. Thomas H. Halsted, Syracuse. George D. Stewart, New York. William F. Campbell, Brooklyn. E. Eliot Harris, New York.
KANSAS Charles S. Huffman, Topeka. W. S. Lindsay, Topeka. R. J. Morton, Green.	NORTH CAROLINA H. A. Royster, Raleigh. C. P. Ambler, Asheville.
KENTUCKY L. S. McMurtry, Louisville.	NORTH DAKOTA E. A. Pray, Valley City.
LOUISIANA W. H. Seemann, New Orleans. Clarence Pierson, Jackson.	OHIO J. H. J. Upham, Columbus. Ben R. McClellan, Xenia. C. D. Selby, Toledo. Rufus B. Hall, Cincinnati. George E. Follansbee, Cleveland. Granville Warburton, Zanesville.
MAINE Bertram L. Bryant, Bangor.	OKLAHOMA LeRoy Long, Oklahoma City. L. S. Willour, McAlester.
MARYLAND Thomas S. Cullen, Baltimore. Randolph Winslow, Baltimore.	OREGON W. T. Williamson, Portland.
MASSACHUSETTS J. B. Blake, Boston. H. G. Stetson, Greenfield.	

PENNSYLVANIA

Edw. B. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
David N. Dennis, Erie.
John M. Baldy, Philadelphia.
William F. Bacon, York.
George R. S. Corson, Pottsville.
Herbert B. Gibby, Wilkes-Barre.
George G. Harman, Huntingdon.
Wilmer Krusen, Philadelphia.

PORTO RICO

Jocinto Aviles, San Juan.

SOUTH CAROLINA

Edgar A. Hines, Seneca.

SOUTH DAKOTA

H. J. G. Koobs, Scotland.

TENNESSEE

E. T. Newell, Chattanooga.
L. A. Yarborough, Covington.

TEXAS

I. C. Chase, Fort Worth.
M. L. Graves, Galveston.
W. B. Russ, San Antonio.
W. W. Ralston, Houston.

UTAH

Joseph R. Morrell, Ogden.

WASHINGTON

D. E. McGillivray, Pt. Angeles.
S. E. Lambert, Spokane.

WEST VIRGINIA

Chester R. Ogden, Clarksburg.

WISCONSIN

Horace M. Brown, Milwaukee.
Rock Sleyster, Wauwatosa.
Charles H. Lemon, Milwaukee.

WYOMING

Earl Whedon, Sheridan.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE

Roger S. Morrison, Cincinnati.

SURGERY, GENERAL AND ABDOMINAL

Raymond P. Sullivan, Brooklyn.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Lewis S. McMurtry, Louisville, Ky.

OPHTHALMOLOGY

Lee Masten Francis, Buffalo.

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

John F. Barnhill, Indianapolis.

DISEASES OF CHILDREN

Isaac A. Abt, Chicago.

PHARMACOLOGY AND THERAPEUTICS

W. A. Bastedo, New York.

PATHOLOGY AND PHYSIOLOGY

E. R. LeCount, Chicago.

STOMATOLOGY

William C. Fisher, New York.

NERVOUS AND MENTAL DISEASES

Hugh T. Patrick, Chicago.

DERMATOLOGY

George M. MacKee, New York.

PREVENTIVE MEDICINE AND PUBLIC HEALTH

C. St. Clair Drake, Springfield, Ill.

UROLOGY

Edward L. Keyes, Jr., New York.

GASTRO-ENTEROLOGY AND PROCTOLOGY

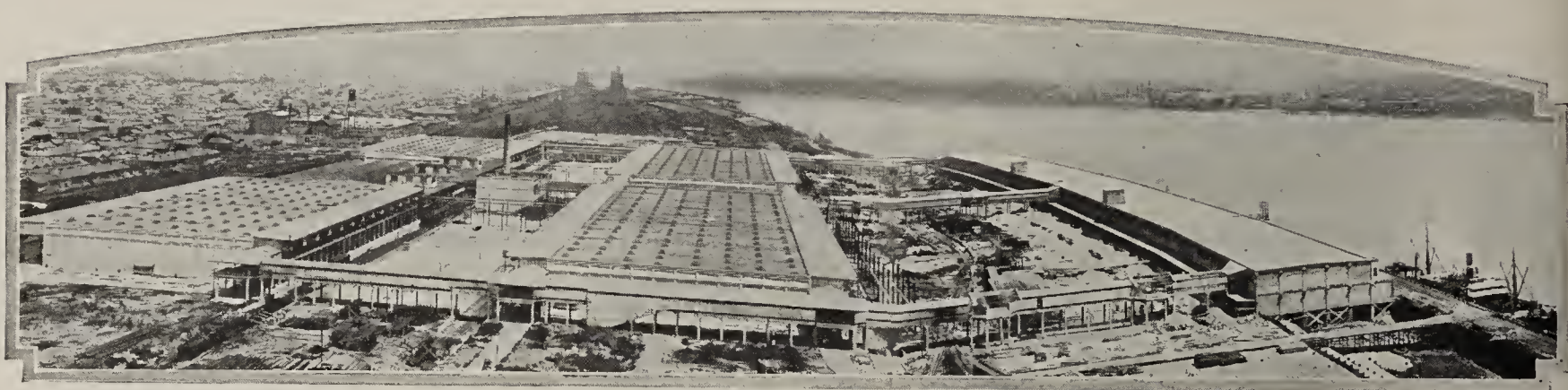
Alois B. Graham, Indianapolis.

ORTHOPEDIC SURGERY

John Ridlon, Chicago.

DELEGATES FROM THE UNITED STATES GOVERNMENT SERVICE

United States Army, F. F. Russell. United States Public Health
United States Navy, Frank E. Service.
McCullough.



THE WHARVES AT NEW ORLEANS

NEW ORLEANS—THE CRESCENT CITY

When the American Medical Association met in New Orleans in 1903, the city was just beginning to feel the good effects of that portion of its new drainage system which began operation in 1900. Today, with this system completed, it is one of the most healthful and attractive cities in the United States. The location, both climatically and commercially, is ideal. The winters are not severe, and while the summers are rather long, the temperature does not reach the excessive heights experienced in summer elsewhere. Sun strokes and heat prostrations are practically unknown. The foliage is such as to indicate that the climate is both temperate and tropical. An analysis of the temperature for the month of April during the last five years indicates a most equable climate:

HIGH, LOW AND MEAN TEMPERATURES, APRIL 20-30, FOR LAST FIVE YEARS

	1915			1916			1917			1918			1919		
April															
20	80	62	71	80	72	76	79	65	72	65	57	61	75	59	67
21	82	65	74	79	65	72	74	64	68	64	50	57	79	63	71
22	83	69	76	82	63	72	76	60	68	73	56	64	83	64	74
23	79	66	72	84	64	74	82	63	72	80	56	68	84	65	74
24	78	66	72	81	67	74	84	60	72	72	61	66	85	63	74
25	82	65	74	79	67	73	83	64	74	79	63	71	86	68	77
26	82	64	73	78	62	70	84	65	74	84	65	74	71	60	66
27	82	64	73	69	60	64	82	66	74	85	66	76	78	61	70
28	83	65	76	70	58	64	83	68	76	82	64	73	83	66	74
29	90	66	78	75	58	66	86	69	78	81	66	74	75	70	72
30	89	70	80	79	58	68	85	69	77	76	65	70	71	63	67

COMMERCE AND MUNICIPAL OWNERSHIP

Municipal ownership has probably been developed to a higher extent here than in any other city in the United States. Among the municipally owned enterprises are the wharves,

covered with steel sheds, Public Belt Railroad, public cotton warehouses, public grain elevators, waterworks, sewerage and drainage, and, in the course of construction, an inner harbor for the location of factories and shipbuilding plants. An enormous amount of money has been expended to make the city secure from inundation from both the river and from Lake Pontchartrain. Rat-proofing has practically been completed at a great expense, and the city has been placed in such physical condition that it will be impossible for any imported pestilence ever again to secure a foothold. Natural gas, which has been found in abundance within less than a hundred miles of New Orleans, will soon be introduced. Since the last meeting of the Association here, the natural resources of Louisiana have come into their own, and have proved to be of such a nature as to make Louisiana one of the richest mineral producing states in the country, particularly for salt, sulphur, oil and gas. Naturally, the timber interests of the state have increased along with other classes, and wonderful fishing and game resources have been developed. The state has been wise in having all of its natural resources under the control of what has proved to be an efficient conservation commission. Available to the visitor are the finest oysters in the world, to be had at any oyster stand or restaurant in the city, and to be eaten with absolute impunity.

SCHOOLS AND UNIVERSITIES

The two principal universities are Tulane and Loyola. Loyola has recently expanded its curriculum extensively, so that, in addition to the ordinary academic courses, it gives courses in some of the special sciences, and has recently established a graduate school of medicine; also certain research laboratories are under way.



TULANE UNIVERSITY BUILDINGS

1. Academic Department, Gibson Hall.

4. Refectory and Physics Buildings.

2. Richardson Chemistry Building.

5. Tilton Memorial Library.

3. Aerial View, Tulane Buildings and Campus.

6. Medical Department, Tulane Campus.

New Orleans has one of the best public school systems in the country, with a great many modern school buildings, both for white and for colored pupils.

TULANE UNIVERSITY

Tulane University of Louisiana during the last fifteen years has developed from a group of loosely coordinated colleges, with varying standards of admission and graduation, into a highly organized university of the first rank. Within this period the attendance has increased from 1,191 in the session of 1904-1905 to 2,500 in the session of 1919-1920; and if we add the summer school, which was begun in 1908, the attendance in 1919 will be 3,762.

Tulane University of Louisiana comprehends the college of Arts and Sciences, the College of Technology, the H. Sophie Newcomb Memorial College for Young Women, the Faculty of Graduate Studies, the College of Law, the College of Medicine, the College of Commerce and Business Administration, and the Summer School. The College of Medicine includes the Schools of Medicine, Pharmacy, Dentistry, and the Graduate School of Medicine (Polyclinic). The College of Technology includes the Schools of Mechanical and Electrical Engineering, Civil Engineering, Chemical Engineering, and Architecture. The H. Sophie Newcomb Memorial College includes, in addition to the usual college course, the Schools of Arts, Music and Household Economy.

During this period the increase in endowment has included only one considerable bequest, for the Newcomb College for Women. There have been within the same period eight buildings erected for educational purposes.

In the past ten years the College of Arts and Sciences has increased its attendance from 96 to 234; Technology, from 164 to 220; Newcomb, from 278 to 537; Law, from 59 to 90; Commerce, from 0 to 681. The

School of Medicine, after many variations in attendance due to the raising of standards and fees, and to the effect of the war, has increased its attendance from 355 in 1918-1919 to 416 in 1919-1920.

The College of Technology was organized in 1894. To June, 1919, there have been 440 graduates in technology. Of these, 124 became engineer officers in the late war (2 colonels; 3 lieutenant-colonels; 4 majors; 24 captains and 91 first and second lieutenants and ensigns).

The School of Medicine was established in 1834. To June, 1919, there have been 4,936 graduates. Of these, 578 were in military service in the late war (3 colonels; 11 lieutenant-colonels; 42 majors; 104 captains, and 418 first lieutenants). This school has solved problems in malaria, leprosy, hookworm, pellagra and beriberi, and cooperated in the investigation and eradication of yellow fever. Its students have been coordinated with the Louisiana State Board of Health in training for public health work.

The Tulane Hospital unit was the first base hospital fully organized in the South (mobilized, September, 1917).

During the war session from June 1, 1918, to June 1, 1919, Tulane trained 7,145 students, of whom nearly 5,000 were trained directly for war service.

HOSPITALS

The city has been noted for its true charity, and the most noteworthy of its charities has been the care of the sick. The

Charity Hospital, in the course of its fifty years' existence, has treated gratis, as bed patients, many times more than the present population of 435,000, including many patients from other states than Louisiana. The principal hospitals in the city are, first, naturally the Charity Hospital; then Touro Infirmary, which recently received \$600,000 to be expended in securing added facilities and space, both for their private and free clinic work; the Hotel Dieu; Eye, Ear, Nose and Throat Hospital; the Presbyterian Hospital; the French Hospital; the Illinois Central; Belvedere; the Flint-Goodridge (colored) and Providence (colored), besides a number of private sanatoriums; the City Hospital for Mental Diseases; the Isolation Hospital, and the Louisiana Retreat. Nearly all of these institutions are available for teaching purposes.

THE OLD FRENCH QUARTER

Naturally, with the increase of land values, many of the old buildings have had to give way to improvements. Still, the old French quarter, with its narrow streets and overhanging balconies ornamented with wonderful iron work, retains most of its charm and quaintness, and is a source of great interest and pleasure to the stranger. While ample provision will be made for trips to the various publicly owned institutions and river trips for viewing the harbor, and

while guides will be provided for visitors to the French quarter, the casual visitor may be interested to know that he may, for himself, approximately judge of the age of the buildings he is looking at by the character of the iron work of the balconies. The beautiful wrought iron work denotes that the building is colonial; the cast iron work that the building was constructed some time between colonial days and the outbreak of the Civil War, and all other ornamentation on the building indicates that it was erected after the close of the Civil War. The Civil War fixes the date for



JACKSON SQUARE, THE CABILDO AND CATHEDRAL

the cessation in the use of iron work for ornamental purposes, as all of the foundries at that time devoted their attention to the manufacture of munitions, and, after the war devoted their energies to the manufacture of sugar mills and other implements needed for the material prosperity of the state.

WATER SUPPLY

Prior to 1900, the soil of the city was saturated, always practically to the surface; and prior to 1908 there were no sewers. Vaults and cesspools existed on all premises, and the main reliance for a water supply was on rain water caught from the roof of the houses and stored in wooden cisterns, built on foundations well above ground level. There was a water works system, but not one twelfth of the premises of the city used it at all, and not half of the streets had water mains. Through these mains the natural Mississippi River water (and mud) was available to those who wanted it, but it had to be filtered for almost any use, and hardly constituted a water supply at all.

BEGINNING OF SANITATION

In 1895, the city of New Orleans really started the inauguration of her sanitary improvements by the development of general plans for an effective drainage system. Construction was started in 1897, and was sufficiently advanced by 1900 to begin operation. This at once entirely changed the conditions existing in the well built areas of the city.



THE OLD FRENCH QUARTERS

1 and 2. Old French Court Yards.

3. Dumaine Street, Old French Quarter.

4. Absinthe House.

5. Famous Old French Market.

In 1899, the sewerage and water board law was enacted and a tax and plan started for the development of these improvements also, and for the further development of the drainage system. The fund for these uses is a common fund, and the three systems are under a common management. On account of limitation of funds, and the times when they became available, it has been necessary to bring the three systems to their present stage of development gradually.

By 1909, the sewerage and water systems were fully ready to receive connections over the whole built-up area of the city. Since 1909, the drainage system has been greatly enlarged and extended, and the sewerage and water systems have been constantly extended. They have gradually been fully utilized by all of the people, without any legal steps to compel such use, except in the matter of the abolition of a few of the many original roof water cisterns which certain of the citizens wanted to retain for one purpose or another, but which the city desired to eliminate because of the difficulty of preventing the breeding in them of *stegomyia* mosquitoes, which in the possible event of the importation of a yellow fever case would favor the spread of this disease.

To this time, about \$32,000,000 has been expended on the construction of the sewerage, water and main drainage system, including the cost of water meters, which are furnished on every water connection, and the cost of water and sewerage connections from the mains to the property line. The systems today could not be duplicated for \$50,000,000; and only \$20,000,000 of 4 per cent. bonded indebtedness exists against them.

At present about 600 miles of streets are served with water and sewerage facilities and effective fire protection through fire hydrants at each street intersection, and about 93 per cent. of the premises of the city are connected with the sewers and 96 per cent. with the water works system.

SEWERAGE AND DRAINAGE

New Orleans lies between the Mississippi River and Lake Pontchartrain, which is a slightly brackish tidal lake. One third of the city has its surface elevation at or below mean tide level in the lake, another third has its surface elevation at or below high lake tides in Lake Pontchartrain, and since "tides" in Lake Pontchartrain are the product of prevailing winds acting on the Gulf of Mexico and may be high or low a week at a time and have a range of nearly 7 feet, it is obvious that anything at or below tide level in the lake, depending on a gravity outlet for drainage into the lake, would itself be just a part of the lake. The remaining third of the city is that portion along the bank of the Mississippi River which at various points is naturally from 2 to 8 feet above high tide level in Lake Pontchartrain, and, roughly speaking, from 13 to 7 feet below high water in the Mississippi River. The city, therefore, is protected by substantial earthen embankments, or levees, against inundation both from the lake behind it and from the river in front of it, and is under the necessity of pumping all of its storm water drainage which it discharges into the tidal waters to the rear or to the eastward, because this is the only practical method of getting rid of the vast volume of storm water which semitropical rains frequently furnish.

The sewage also has to be pumped, and because it would tend rapidly to create a nuisance, if discharged into our shallow tidal lakes, it is discharged against a greater lift, through cast iron force mains, into the Mississippi River, entering the river well under the low water surface, in a direct downstream current at three points along the lower city river

front. Sewage so discharged is at once disposed in the vast volume of muddy river water, and does not even appear at the surface.

In order to obtain effective drainage with rainfalls sometimes as much as $3\frac{1}{2}$ inches in an hour, 7 inches in five hours, or 9 inches in twelve hours, over an area of 30,000 acres, there are six major drainage pumping stations having capacities ranging from 1,700 cubic feet to 3,000 cubic feet a second, with individual pumping units up to 700 cubic feet a second for storm duty, and down to 40 cubic feet a second or less for constant duty pumping. The aggregate capacity of these storm drainage pumps is about 7,000,000,000 gallons a day. Some of the drainage is lifted four times, and most of it at least twice, before it is finally delivered into the tide level leveed outfall canals, the aggregate lift probably averaging about 18 feet. These drainage pumps are operated electrically from two power stations, owned by the sewerage and water board, which have a maximum capacity of about 12,000 horse power. These drainage pumps constitute the greatest and most economical aggregation of low lift pumping machinery that exists. Seven billion gallons of water is equal to a lake having an area of a square mile over a depth of 33 feet, or to a column of water 10 feet square passing a given point at a rate of more than $1\frac{1}{4}$ miles every minute. Most of the drainage pumps were designed especially by the mechanical engineer of the sewerage and water board to meet local requirements, and were built in accordance with these

designs, without any guarantee that they would even pump water at all. They are, in effect, siphons over a division wall between the low level drain from which they pump and the higher level drain into which they discharge. At the summit of these siphons, properly designed screw blades, operated by a motor through a horizontal shaft, impel the water forward after the pump has been primed by the exhaustion of the air from its case, accomplished by a vacuum pump.

This arrangement results in accessibility of all parts for maintenance and repairs, in the avoidance of gates and check gates and of great depths of excavation and foundation costs, and the simplification of the starting of the various units as they are needed. The greatly increased economy and efficiency which this type of pump and this arrangement have now demonstrated are fully recognized.

The main drains of the drainage system are called locally "covered and lined canals." They are built of concrete, reinforced with steel, and are often 25 feet wide and from 9 to 10 feet deep, with V-shaped bottoms to facilitate the movement of small or dry weather flows. These and all other drains, as well as the sewers in New Orleans, operate purely by gravity with good falls or slopes to the pumping stations, each station, by its performance, creating artificially a low outlet where none could exist otherwise. There is no reservoir capacity other than the drains or sewers in either case; as the water reaches each pumping station it must be lifted.

On the sewerage system there are seven intermediate lift pumping stations which pump the sewage from the low level gravity sewer, leading to them, into the higher level gravity sewer, leading away from them, through lifts of from 8 to 15 feet; and there are three final discharge sewage pumping stations which discharge the sewage, under pressure, through cast iron pipe lines into the river. The pumps at the latter stations make lifts of from 40 to 80 feet, depending on the level of the water in the river, and the friction in the long pressure mains through which they discharge.



THE CHARITY HOSPITAL

The seven intermediate lift sewage pumping stations are interesting, because they are operated without any screening of the sewage and without any attendants, the pumps being automatically started or stopped one at a time by float-operated switches actuated by the level of the sewage in the low level sewer. The pumps are located in dry wells, and set down deep enough to be self priming. One of the most difficult problems to be solved has been to design pumps that would operate satisfactorily under these conditions. People will throw rags and similar matter into the sewers, and rags so seriously obstruct the usual type of low lift pump that screening of the sewage alone will permit it to operate with reasonable efficiency; and screening calls for an attendant at each station all the time and for an objectionable screening



removal service. To avoid this, an entirely new type of centrifugal pump has been devised by the board's mechanical engineer, and installed at these stations. It is called a "trash pump," and is just that. These pumps at the New Orleans stations have 12-inch suction and discharge openings; and a 12-inch ball or a succession of 12-inch balls, or a few table cloths or napkins or old clothes or kitchen or toilet utensils, are all the same to these pumps; any trash that can get into them at all is bound to go through and has no effect to decrease their efficiency, which is high through a wide range of lifts.

The water supply of New Orleans is taken from the Mississippi River at the extreme upper end of the city. Mississippi River water is very muddy, averaging 650 parts per million of suspended matter, and rather hard, but not so bad as river waters generally are in number of bacteria, and especially in the number of *B. coli* indicative of pollution. The suspended matter in the river water, however, is mostly very finely divided clay, and is impossible to remove in any practicable time by plain subsidence.

TREATMENT OF WATER SUPPLY

The method of treatment at New Orleans is a continuous process: The raw water pumped from the river first passes through a grit chamber having a capacity of about one hour's supply; then it passes the chemical flow governing apparatus on its way to the mixing channels. This apparatus governs flows of solution of ferrous sulphate and of milk of lime which enter the main flow of water proportional to the flow of water. The lime is added at the point where the main flow of water enters the mixing channels, and the iron at the point about half way through the mixing channels. These channels are a series of passage ways which cause the water

to flow back and forth and up and down through a distance of about a mile, and which require about an hour of travel. This results in a perfect mixture of chemical solutions with the water and in perfect and uniform chemical reactions without any such violent agitation as would tend to break up flakelike hydrates, which act to entangle and bring together the suspended matter which the water contains. Passing out of the mixing channels, the water goes through settling basins of about seven hours' capacity, where the subsidence of the suspended matter is rapidly effected.

The use of lime as applied in New Orleans is not only to assist in coagulation of the suspended matter in the water but also for the softening of the water, the dissolved carbonates of lime and magnesia in the effluent being reduced always to about 40 parts per million.

After the water passes the settling basins it goes directly to the filters, which are of the so-called mechanical type, but are open gravity sand filters. The water passing to the filters usually does not carry more than 30 parts per million of suspended matter, and this is so effectually coagulated that in rapid passage through very coarse sand every particle of suspended matter and practically all bacteria are removed, the resulting effluent being clear, relatively soft, and of excellent sanitary quality.

After filtration, on its way to the pumps, which deliver it into the city distribution system, the water is given a treatment, proportional to the flow of water, of chlorin, roughly, about $1\frac{1}{2}$ pounds per million gallons, for sterilization. This general process has been in use since 1909, and has given most excellent results in every way. The New Orleans plant is among the first



THE PARKS OF NEW ORLEANS

1. City Park from Delgado Art Museum.
2. Tropical Road, City Park.
3. West End Park, Lake Pontchartrain.

of the larger plants of this character, many of which are now in operation, and it has fully met the hopes and expectations of those who planned it.

In this system the cleaning of the filters is effected by sending filtered water backward through them at a very rapid rate for a short period. The "wash water" used for this purpose, of course, has to be wasted. Usually an appreciable percentage of the water filtered has to be utilized for filter washing. The New Orleans plant has the exceptionally low record of only 0.5 per cent. of the water filtered required for filter washing.

The soil of New Orleans is all alluvial, composed of varying proportions of very fine sand and of soft or softer clay, with peaty strata frequently, and often with cypress stumps or logs in very large number. The construction and main-

tenance of sewers, drains, water mains and other underground structures, and of reservoirs, etc., under these soil conditions has itself been an interesting and often a difficult and expensive problem. Work under these conditions, particularly where resources were limited and the dollar had to be extended to cover the greatest possible results in service, is certain to carry some surprises and some grief.

The New Orleans water, sewerage and drainage systems, however, have from the day of their first tryout gone into service and given service continuously ever since. Clear, safe water under adequate pressure and up to the United States Public Health Service standard has been constantly available since Feb. 7, 1909, when the filters and purification systems were first tried for their intended use. Sewage removal from all premises from the first day of their connection with the sewers has been effective and continuous, and the storm water drainage system has never failed to go to the limit of its capacity in the prompt removal of accumulating storm flows.

The water consumers of New Orleans are all metered; but the water rates are so low that the small consumer, especially, is not sufficiently interested to prevent a good deal of needless waste, and the consumption per capita supplied has been gradually increasing for the last four or five years, having increased nearly 25 per cent. in that period.

EFFECT OF WATER SUPPLY ON MORTALITY RATE

The accompanying tabulation of local mortality statistics illustrates, probably better than anything else, the vital bearing of sanitary conditions on one question in which every one has a real interest, namely, the duration of the average human life in the community in which he lives, because it has a very close connection with the health, comfort, prosperity and probable length of life of his loved ones and of himself.

If the death rate of New Orleans, as proved in this tabulation, before either of these systems was put into effect, that is, from 1890 to 1899, was such that the average expectancy of life was only 36.7 years, and if, as one after another these systems have been put into use and brought gradually to their maximum usefulness, the general death rate has gradually reduced until in 1919 it was at that point which indicates an average expectancy of life of fifty-five years, it would seem that the foundation work without which this increase in life expectancy of eighteen years could not have possibly been obtained, is, from this point of view alone, worth its cost.

Calculated exactly in dollars, the average per capita cost paid either in taxes or water rates by the people of New Orleans for the sewerage, water and drainage systems for construction, maintenance and operation and interest to attain this result from 1895 to date has been about \$87, gradually increasing as more and more benefits to more and more people were provided, from about \$1 per annum per capita from 1895 to 1900, before any benefits were felt, to \$6.60 per capita per annum in 1919, when very nearly the whole population received the full benefit of all three systems.

According to the 1918 financial statistics of cities, compiled by the United States Census, cities of 300,000 or over of population collected from their people on an average, 79 per cent. per capita more for their water supply than New Orleans collected, and in net revenue available for expenditure for every form of municipal service, 73 per cent. more than New Orleans. In both of these items, New Orleans shows the

lowest per capita collections of any of the twenty-two cities of 300,000 population or over.

MORTALITY STATISTICS

Date	Death Rate Per 100,000 from		Per 1,000 All Causes	Corresponding Life Expectancy Based on Total Death Rate Years	Comment
	Malaria	Typhoid*			
1880-1889	156	21	28.6	35.0	No adequate drainage and vaults; cesspools, foul gutters and rain water cisterns were everywhere with mosquitoes abundant †
1890-1899	104	39	27.2	36.7	From 1900, drainage improvements were effective and increasing
1900-1909	26	38	22.6	44.2	Connections to sewers started in 1906 and to water mains in 1909, with gradual increasing utilization of both systems
1910-1919	7	21	20.4	49.0	93% of population served by sewers; 96% by water
1919	4	13	18.2‡	55.0	

* Typhoid in New Orleans appears never to have been water borne, but to have been due to importation and local communication through milk, food, etc., by insects or by carriers. An abundant supply of perfectly safe water with adequate facilities for cleansing and prompt removal of all infected material through the sewerage system are the only helpful influences which the sewerage or water system can contribute toward its further reduction. The increased typhoid from 1890 to 1909 was probably due to the gradual introduction of toilets draining to cesspools, which too frequently overflowed (illegally) into the old open street gutters to get rid of their surplus water.

† Since 1900, the decrease in the number of mosquitoes of all kinds has been marked and progressive as drainage has been extended and improved, as the sewers have acted to subdrain the soil, as rain water cisterns have gradually disappeared, and as open gutters have given place to pipe drains or been provided with outlet conditions which prevented standing water in them. Also, as a matter of great importance following the subsurface drainage, burials above ground are no longer necessary, and cellars can be dug and used in any part of the city, thus affording an enormous increase in property values through the increased space available.

‡ Of this 18.2, 1.75 was due to influenza exclusive of 100 additional due to pneumonia. It would appear, therefore, as though an average death rate of 18 per thousand is not too good to hope for in the early future, notwithstanding the too high mortality among the colored (one third of the population), and the large number of deaths in city hospitals of nonresident patients brought in from Louisiana and surrounding states. Better education and housing facilities for the colored and less well to do population generally should bring still further improvement.

VACATIONING AROUND NEW ORLEANS

On the shores of Lake Pontchartrain, easily accessible by electric car or automobile is West End, one of the delightful breathing spots which surround New Orleans. There is a great seawall, in back of which is a wide area of beautiful driveways, gardens and trees. Here, and also at Spanish Fort or Milneburg are excellent facilities for lounging and resting, for fishing, or other vacation delights.

Convenient also to the city are Waveland, Pass Christian, Gulfport, Long Beach and Ocean Springs—famous resorts whose names are so familiar as to conjure up at once thoughts of golf, tennis, bathing, fishing, boating, or the other pastimes of the convention vacationist.

New Orleans promises true Southern hospitality. Its facilities for instruction, for entertainment and for pleasure will be fully at the service of its guests.



SUGAR CANE READY FOR THE MILL



THE SANITARY FACILITIES OF NEW ORLEANS

1. Head House, Water Purification Station.
2. Filters, Water Purification Station.
3. Municipal Water Filtration Plant.
4. Exterior, one of large Drainage Stations.
5. Main Water Works Pumping Station and Power Stations.

TRANSPORTATION

Winter Tourist Rates Announced

The managers of the several passenger bureaus and traffic committees have advised that winter tourist fares will be in effect to New Orleans for the coming annual session of the American Medical Association. Tickets will be on sale at principal railroad centers up to April 30. They will be limited for return passage to May 30.

Round trip fares from Chicago, it is announced, will be \$51.03; from St. Louis, \$38.02; from Indianapolis, \$46.70; from Omaha (via Chicago), \$78.15, and (via St. Louis) \$58.50; from Louisville, Ky., \$40.35; from Cleveland, \$58.34; from Boston, \$83.94; from New York, \$73.14; from Washington, D. C., \$60.93; from Philadelphia, \$68.28; from Denver (via Chicago), \$87.70, (via St. Louis) \$74.05; from Portland, Ore., \$147.73; from San Francisco or Los Angeles, \$113.85. To all the foregoing fares, a war tax of 8 per cent. should be added. At a slight additional cost and in some instances for the same fare, diverse routes may be had from points from which tourists fares are quoted. The rates named above apply when going and returning by the same route.

These winter tourist rates are not in effect from points in certain Southern states. The following one way fares are announced: from El Paso, Texas, \$38.70; from Dallas, Texas, \$18.28; from Jackson, Tenn., \$13.27; from Augusta, Ga., \$19.17; from Birmingham, Ala., \$10.65. To these rates 8 per cent. war tax must also be added.

Consult Local Ticket Agent

Those who are planning to go to New Orleans should consult the local ticket agent in their home town in order to obtain full information regarding rates, time limits, extensions and stop-over privileges which may be had on the railroad tickets to New Orleans. It is advisable to make these inquiries at an early date as local ticket agents may have to ask for information desired, and except in the larger cities, it may be necessary to obtain a special form of ticket from some central ticket office. Neglecting to arrange for railroad tickets until just before the time for leaving home may make it necessary for the ticket agent to sell a full fare one way ticket since he may have neither the proper form nor the authority to sell these winter tourist excursion tickets. The importance of an early inquiry is emphasized.

Special Trains

Special trains from Chicago to New Orleans, to be known as the "American Medical Special" and the "Chicago Special," will be arranged to run over the Illinois Central Railroad Lines as sections of the regular trains—or special cars will be carried on these regular trains—as Pullman reservations warrant. There are three trains leaving Chicago daily for

New Orleans: at 8:45 a. m., at 12:30 p. m. and 6:15 p. m. These trains are scheduled to arrive in New Orleans, respectively, at 11 a. m., 11:15 a. m. and at 8:45 p. m. Pullman reservations can be made either through the railroad ticket office at your own home, or by addressing Mr. J. W. Stevenson, district passenger agent, Merchants Loan and Trust Building, 112 West Adams Street, Chicago. Members of the House of Delegates should plan to leave Chicago not later than 6:15 p. m., Saturday, April 24. Those who are interested chiefly in the meetings of the Scientific Assembly will reach New Orleans in ample time for the general opening meeting, which will be held on Tuesday evening, if they leave Chicago as late as 12:30 p. m., Monday, April 26.

Sleeping Cars to Be Parked

The R. & S. Tourist Company, 107 West Jackson Boulevard, Chicago, is arranging to run a special train leaving Chicago on Sunday, April 25, about noon, via the Illinois Central Railroad, and to arrive in New Orleans during the afternoon of Monday following. This train will return, leaving New Orleans about 7 p. m., April 30, and arriving in Chicago, Saturday evening, May 1. Arrangements will be made so that the cars will be parked in New Orleans at a convenient location. This will permit of the cars being used as sleeping quarters during the time of the annual session. The cost covering railroad fare, Pullman accommodations going and coming and during the days spent in New Orleans, is announced to be \$102.75 and up in accordance with the Pullman accommodations reserved. Particulars and definite information can be obtained by addressing the company. This use of Pullman sleeping cars by organized parties is commonly followed at the time of the Mardi Gras and other large gatherings at New Orleans.

Going to New Orleans by Boat

The *Comas*, one of the steamships of the Morgan Line, is announced to sail from New York, April 21, for New Orleans, and from New Orleans on the return trip on the morning of May 1. This boat can carry seventy-one first class passengers. In addition, there is space for thirty second class passengers. Particulars regarding time of sailing, rate of passage and other matters can be obtained by addressing Mr. A. J. Poston, general agent, Southern Pacific Lines, 165 Broadway, New York.

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., who has undertaken to arrange for a party to go by boat from Boston to New Orleans, advises that he is experiencing some difficulty in securing a first class ship for the trip. However, he has in prospect a 3,000 ton vessel and states that if practical rates can be secured, the prospects are that this boat will be filled to capacity when it leaves Norfolk.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Josephine Hutchinson Memorial Building, Canal Street, between Villere and Robertson streets. A committee of local physicians will assist those desiring to register. A branch post-office will be opened, and a bureau of information established in connection with the Registration Bureau. Here may be secured copies of the *Daily Bulletin*, which announces the names of visitors and other important convention material.

Every one who registers will be required to fill out completely the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the

filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster may occupy a considerable time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1920 dues are unpaid should present his filled in registration card with the amount of his Fel-

lowship dues (\$5) at one of the windows and marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than April 19. Any applications received later than April 19 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time so that he can use it in registering at the New Orleans Session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at the headquarters can be consulted after the close of the session, when any excess payment will be satisfactorily adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching New Orleans he may be entered as a Fellow at the meeting by the following procedure: He should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or

from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to *THE JOURNAL*, with his subscription paid for a term to or beyond Jan. 1, 1921, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1921, is required.

Those who will apply for Fellowship at New Orleans should provide themselves, before leaving their homes, with certificates of membership signed by the secretary of their state association certifying to their being members in good standing for 1920 in the state and county branches of the organization; a membership card for 1920 issued by the constituent association will be accepted. Failure to provide themselves with such a certificate will necessarily subject them to considerable delay in registering, if it does not preclude their being able to qualify for Fellowship at the time of the meeting. It will not only subject them to great annoyance, but will also be an imposition on other physicians desiring to register and attend the meetings of this session.



THE JOSEPHINE HUTCHINSON MEMORIAL BUILDING

Scientific Exhibit, Registration, Commercial Exhibit, Information Bureau and Postoffice in This Building
Meeting Place of the Sections on Stomatology, Dermatology, and Urology

HOTEL ACCOMMODATIONS

Dr. J. J. Wymer, 921 Canal St., New Orleans, Chairman of the Committee on Hotels, will handle promptly requests for reservations for lodgings. In writing to Dr. Wymer, he should be advised of the number who will be in the party, the time of arrival in New Orleans and how long the party will stay in that city, as well as the character of the lodgings desired. In addition to the available accommodations in the hotels, this committee has arranged to make available a large number of rooms in well appointed boarding houses as well as in private homes. Those who plan to attend the annual session are urged to make their reservations as promptly as possible. It is desirable that when New Orleans is reached, the party shall know exactly where they expect to be lodged. There will be an information bureau at each railroad station during the days of the session. These will be in charge of medical students from Tulane who will assist incoming Fellows to secure lodgings or direct them to the places where these are reserved.

POSTOFFICE

An Association Postoffice will be maintained in connection with the Registration Bureau in the Josephine Hutchinson Memorial Building. Guests are requested to order mail addressed to them "Care American Medical Association, Josephine Hutchinson Memorial Building, New Orleans, La.," or to their hotels, as preferred.

CLINICS IN NEW ORLEANS

The Local Committee on Arrangements reports that the medical profession of New Orleans is arranging a series of clinics to be conducted by members of the local profession on April 22 to 24, inclusive, and also on April 26 and 27 and May 1. These clinics will be open to Fellows of the Scientific Assembly from other states as well as to the members of the Louisiana State Medical Society, whose annual session is called for the week before the Association's session.

MEETING PLACES AND SECTION HEADQUARTERS

The following have been designated as general and section hotel headquarters, and as meeting places* for the New Orleans session—April 26 to 30:

HOUSE OF DELEGATES: *Orleans Parish Medical Society Building.*

PRACTICE OF MEDICINE: St. Charles. *Elks Hall.*

SURGERY, GENERAL AND ABDOMINAL: Grunewald. *Grunewald, Convention Hall.*

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Grunewald. *Grunewald, Convention Hall.*

OPHTHALMOLOGY: Monteleone. *Moose Hall.*

LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY: Monteleone. *Moose Hall.*

DISEASES OF CHILDREN: St. Charles. *Elks Hall.*

PHARMACOLOGY AND THERAPEUTICS: Planters. *Grunewald, Green Room.*

PATHOLOGY AND PHYSIOLOGY: Grunewald. *Grunewald, Green Room.*

STOMATOLOGY: Lafayette. *Hutchinson Memorial Building, Faculty Room.*

NERVOUS AND MENTAL DISEASES: Lafayette. *Charity Hospital Amphitheater.*

DERMATOLOGY: De Soto. *Hutchinson Memorial Building, Lower Amphitheater.*

PREVENTIVE MEDICINE AND PUBLIC HEALTH: De Soto. *Loyola Hall.*

UROLOGY: St. Charles. *Hutchinson Memorial Building, Lower Amphitheater.*

ORTHOPEDIC SURGERY: Grunewald. *Charity Hospital Amphitheater.*

GASTRO-ENTEROLOGY AND PROCTOLOGY: Lafayette. *Loyola Hall.*

GENERAL HEADQUARTERS: Grunewald.

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU AND BRANCH POSTOFFICE: Hutchinson Memorial Building.

* Meeting places in italics.



KEY TO MAP

1. Hutchinson Memorial Building.
2. Charity Hospital.
3. Loyola Hall.
4. Moose Hall.
5. Orleans Parish Medical Society Building.
6. Elks' Hall.
7. Ear, Nose and Throat Hospital.
8. Grunewald Hotel.
9. Planters Hotel.
10. Monteleone Hotel.
11. Cosmopolitan Hotel.
12. St. Charles Hotel.
13. Southland Hotel.
14. Osborne Hotel.
15. De Soto Hotel.
16. Lafayette Hotel.
17. The Shrine Mosque.
18. The Atheneum.

NONAFFILIATED ORGANIZATIONS

The following organizations have announced that they will hold meetings in New Orleans during the days immediately preceding those on which the Scientific Assembly of the American Medical Association will meet: Air Service Medical Association of the United States; American Radium Society; Association for Study of Internal Secretions; Association of American Teachers, Diseases of Children; Association of Military Surgeons of the United States; Louisiana State Medical Society; Medical Veterans of the World War, and the Radiological Society.

GUESTS FROM FOREIGN COUNTRIES

Among others, Sir Humphrey Davy Rolleston and Col. H. J. Waring of London; Drs. Norman Walker and A. H. Freeland Barbour of Edinburgh; Prof. Victor Morax, Paris; Prof. J. C. Connel, Kingston, and Alexander Primrose, Toronto, are expected to be in attendance at the New Orleans Session. It is anticipated there will also be a number of physicians from Mexico and South America. Accredited physicians from foreign countries will be registered as "invited guests" and may participate in the functions of the annual session.

ENTERTAINMENT

(NOTE.—The official badge will be required for admission to entertainments and other places to which entrance is granted to those in attendance on the annual session.)

The President's Ball

While there will be many and varied entertainments provided for amusement of the Fellows, and their wives, daughters and friends, an original and characteristic program has been perfected for an event to be known as the President's Ball. This will be a carnival ball with a number of tableaux representing medical subjects or interest, humor, and perhaps a little satire. The indications are that this ball will be fully as beautiful as any heretofore given, even in the halcyon days of prewar carnival revelry. It will be carried out in exact accordance with the historical procedure for such affairs. The scenery and settings will be specially painted and prepared to suit the theme. There will be the king with his royal court who will preside over the cast, limited to 150 of the most worthy subjects, all of them gorgeously costumed as will be befitting the characters they portray and the illustrious onlookers before whom they will have the honor of appearing. The king will have his queen and the dukes of his court, their maids, and after the completion of the tableaux they with the maskers will dance in a series until every one of the fair guests has been called out.

After this has been accomplished the maskers will gradually disappear, black coats will come on, and the dancing will continue. Dr. Amedee Granger, Chairman of the Committee on Entertainment, 921 Canal Street, requests that there be submitted to him the names of ladies who will be interested in taking part in the "Carnival Ball," in order that they may be informed concerning the unique features of this event and that they may be assigned "call out seats."

This form of entertainment is novel so far as the American Medical Association is concerned. It is essentially characteristic of the happiest life in the Crescent City. The ball will be given on the evening of April 28.

Fete Champetre

On April 29, a Fete Champetre will be given at the City Park and the Committee on Entertainment is doing all in its power to make this fete both entertaining and instructive.

Entertainment for Visiting Ladies

Trips are being arranged through the historical and beautiful sections of New Orleans for the visiting ladies. These will be personally conducted by members of the Louisiana Historical Society in the forenoon. In the afternoons there will be receptions and automobile rides.

AMERICAN MEDICAL GOLF TOURNAMENT

The Sixth Tournament of the American Medical Golf Association will be held at the New Orleans County Club, April 26, under the auspices of the Local Committee: Clyde Lynch, chairman; Larry DeBuys; John Elliott, Jr., secretary, 803 Audubon Building, New Orleans.

The events will take place both morning and afternoon. They consist of the Association championship, thirty-six holes gross, "Frisco" trophy; Association handicap, thirty-six holes, Detroit trophy, and choice score handicap, thirty-six holes, New Orleans trophy. By order of the 1919 meeting, the members of the Handicap Committee are: Charlton

Wallace, Eastern District, 11 East Forty-Eighth Street, New York; J. J. Coons, Central District, 122 East Broad Street, Columbus, Ohio, and Fred Bailey, Western District, 816 University Club Building, St. Louis.

Any Fellow of the American Medical Association in good standing, who has a degree of M.D., becomes automatically a member of the American Medical Golf Association, on acceptance of the by-laws and payment of the enrolment fee. The enrolment fee consists of \$2, payment of which confers life membership. A playing fee of \$1 is charged on entrance in the tournament.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the third floor of the Josephine Hutchinson Memorial Building of the Medical Department of Tulane University, on the north side of Canal Street, between Villere and Robertson Streets, about three blocks from the Grunewald Hotel. The exhibitors who have so far made application for space are as follows:

MEDICAL DEPARTMENT, U. S. ARMY, Washington, D. C.: Exhibit on Scientific War Material.

LOUISIANA STATE BOARD OF HEALTH, New Orleans: Educational Exhibit.

AMERICAN MEDICAL ASSOCIATION:

Council on Pharmacy and Chemistry.

Propaganda Department

Chemical Laboratory

Council on Medical Education

Council on Health and Public Instruction.

Exhibits showing the activities of the Association.

PRUDENTIAL LIFE INSURANCE COMPANY New York: Exhibit on Graphic Charts, Showing Statistics of Leprosy, and the Sanitary Progress of New Orleans.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York: Exhibit Showing the Activities of the Organization.

ASSOCIATION FOR THE PREVENTION AND RELIEF OF HEART DISEASE, New York: Exhibit of Charts and Folders Explaining Development of Work.

MAYO CLINIC, Rochester, Minn.: Exhibit of Charts and Photographs.

DR. MARTIN H. FISCHER, Cincinnati General Hospital, Cincinnati: Exhibit on Colloid Chemistry in the Analysis of

Various Problems in Physiology, Pathology and Pharmacology.

DR. VICTOR D. LESPINASSE, Chicago: Exhibit on Spermatogenesis and Sterility.

DR. ANGELO L. SORESI, New York: Scientific Exhibit—Specimens—Illustrations—Instruments.

DR. WILLIAM H. MERCUR, Pittsburgh: Exhibit on the Method of Classification and Indexing of Case Records and Reprints.

DR. ALFRED A. STRAUSS, Chicago. Exhibit on Stomach and Intestinal Surgery—Sterility—Muscle and Tendon Transplantation.

DR. CHARLES WINFIELD PERKINS, New York: Exhibit on Gunshot Injuries of the Long Bones, Showing Osteogenesis.

DR. JAMES T. CASE, Battle Creek Sanitarium, Battle Creek, Mich.: Exhibit on Diet and Nutrition.

DR. HENRY A. COTTON, New Jersey State Hospital, Trenton, N. J.: Exhibit on Medical and Surgical Work of the Institution.

In addition, scientific material presented by New Orleans institutions and members of the local profession will be shown in Professor Bass' private laboratory.

The amphitheater on the third floor will be used for moving pictures, lantern slides and roentgen-ray exhibits during the time of the meeting. A detailed program of the moving picture exhibit will be announced later, and a final program and complete list of exhibitors will appear in the official program.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING MEETING

SHRINERS' TEMPLE, ST. CHARLES AVENUE AND CLIO STREET
Tuesday, April 27—8:30 p. m.

Music.

Call to Order by the President, ALEXANDER LAMBERT, New York.

Invocation. Most Reverend J. W. SHAW, Archbishop of New Orleans.

Announcements, ALBERT E. FOSSIER, Chairman of the Local Committee of Arrangements.

Address of Welcome. HON. MARTIN BEHRMAN, Mayor, City of New Orleans.

Address of Welcome. President, Louisiana State Medical Society.

Address. HON. JOHN M. PARKER, Governor-Elect of Louisiana.

Music.

Introduction and Installation of President-Elect WILLIAM C. BRAISTED, U. S. Navy.

Address. WILLIAM C. BRAISTED.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program, nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, as well as lists of committees, programs of the General Meeting, lists of entertainments, map of New Orleans and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—JAMES S. McLESTER, Birmingham, Ala.

Vice Chairman—JOSEPH H. PRATT, Boston.

Secretary—G. CANBY ROBINSON, St. Louis.

Executive Committee—HENRY A. CHRISTIAN, Boston; LAWRENCE LITCHFIELD, Pittsburgh; WALTER L. BIERRING, Des Moines, Iowa.

(Stenographer—Dr. G. G. TAYLOR, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address.

JAMES S. McLESTER, Birmingham, Ala.

2. The Clinical Interpretation of Basal Metabolic Rate Estimations. HENRY S. PLUMMER, Rochester, Minn.

3. The Nature of Fever. WILLIAM D. SANSUM, Chicago.

4. Types and Treatment of Pellagra.

STEWART R. ROBERTS, Atlanta, Ga.

5. The End-Results of Focal Infections.

BRYCE W. FONTAINE, Memphis, Tenn.

6. Abscess of the Lung.

U. J. W. PETERS, Birmingham, Ala.

7. The Clinical Diagnosis of Obstruction of the Hepatic Veins. CHARLES F. HOOVER, Cleveland.

8. Phlebectasis of the Diaphragmatic Area and of the Lower Thoracic and Upper Abdominal Regions.

WILLIAM GERRY MORGAN, Washington, D. C.

Thursday, April 29—2 p. m.

9. An Address. SIR HUMPHREY DAVY ROLLESTON, London.

10. Oxycephaly: Its Occurrence in Negroes.

GEORGE DOCK, St. Louis.

11. Clinical Experience with a Standardized Dried Aqueous Extract of Digitalis. JOSEPH H. PRATT, Boston.

12. A Study of the Bile Pigments in Pernicious Anemia.

JOHN P. SCHNEIDER, Minneapolis.

13. Spondylitis and Abdominal Pain.

DOUGLAS VANDERHOOF, Richmond, Va.

14. The Influence of Quantitative Methods in the Advance of Clinical Medicine.

EUGENE S. KILGORE, San Francisco.

15. Frozen Sections from Two Cases of Aneurysm of the Thoracic Aorta.

GEORGE W. NORRIS and GEORGE FETTEROLF, Philadelphia.

Friday, April 30—2 p. m.

Election of Officers

16. Hints for the Diagnosis of Disease of the Gallbladder.

LEWELLYS F. BARKER, Baltimore.

17. Gout: A Clinical Study of 116 Cases.

CHARLES SPENCER WILLIAMSON, Chicago.

18. Renal Glycosuria. JAMES E. PAULLIN, Atlanta, Ga.

19. The Treatment of Diabetes Complicated by Pulmonary Tuberculosis.

NELSON W. JANNEY, Santa Barbara, Calif.

20. Arterial Hypertension Associated with Endocrine Dyscrasia.

WILLIAM ENGELBACH, St. Louis.

21. Syphilis of the Kidney.

LOYD THOMPSON, Hot Springs, Ark.

22. Angina Abdominalis and Other Abdominal Manifestations of Arteriosclerosis.

ALFRED STENGEL, Philadelphia.

23. The Effect of Tonsillectomy on the Recurrence of Acute Rheumatic Fever and Chorea in Children.

WILLIAM P. ST. LAWRENCE, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

Chairman—DEAN D. LEWIS, Chicago.

Vice Chairman—MALVERN B. CLOPTON, St. Louis.

Secretary—GEORGE P. MULLER, Philadelphia.

Executive Committee—WILLIAM D. HAGGARD, Nashville, Tenn.; E. STARR JUDD, Rochester, Minn.; JOHN T. BOTTOMLEY, Boston.

(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—9 a. m.

1. One Hundred Goiter Operations: Mistakes in Retrospect.

JAMES T. MASON, Seattle.

2. Diagnosis and Management of Intrathoracic Thyroid Growths (Lantern Demonstration).

FRANK H. LAHEY, Boston.

3. Advantages of Local Anesthesia in Thyroid Operations (Lantern Demonstration).

JOSEPH R. EASTMAN, Indianapolis.

4. Technic of Thyroidectomy (Lantern Demonstration).

WILLARD BARTLETT, St. Louis.

Discussion of papers 1, 2, 3 and 4 to be opened by HENRY S. PLUMMER, Rochester, Minn.; WILLIAM D. HAGGARD, Nashville, Tenn.; EMIL GOETSCH, Brooklyn, and EDWARD G. JONES, Atlanta, Ga.

5. Chronic Cystic Mastitis (Lantern Demonstration).

JOSEPH C. BLOODGOOD, Baltimore.

Discussion to be opened by WILLIAM C. MACCARTY, Rochester, Minn.

6. Brain Abscess. ALFRED W. ADSON, Rochester, Minn.

Discussion to be opened by HARVEY CUSHING, Boston, and ARTHUR C. STRACHAUER, Minneapolis.

7. Hemangioma and Lymphangioma: Their Response to the Injection of Boiling Water (Lantern Demonstration).

FRANCIS LE S. REDER, St. Louis.

Discussion to be opened by JOHN A. WYETH, New York; RUDOLPH MATAS, New Orleans, and CURTIS F. BURNAM, Baltimore.

Thursday, April 29—9 a. m.

8. Chairman's Address. DEAN D. LEWIS, Chicago.

9. Squamous-Cell Carcinoma of the Kidney.

ALEXANDER PRIMROSE, Toronto.

Discussion to be opened by ARTHUR D. BEVAN, Chicago.

10. Congenital Hypertrophic Pyloric Stenosis in Infants: Review of 175 Cases in Which the Fredet-Rammstedt Operation was Performed.

WILLIAM A. DOWNES, New York.

Discussion to be opened by DEAN D. LEWIS, Chicago.

11. Ulcer of the Jejunum Following Gastro-Enterostomy.
WALLACE I. TERRY, San Francisco.
Discussion to be opened by E. STARR JUDD, Rochester, Minn.
12. Surgery of Cancer of the Large Intestines.
ARTHUR D. BEVAN, Chicago.
13. Operation for Carcinoma of the Rectum.
GEORGE W. CRILE, Cleveland.
Discussion to be opened by DANIEL F. JONES, Boston.
14. Roentgenologic Experience with Pneumoperitoneum (Lantern Demonstration).
ARTHUR STEIN and WILLIAM H. STEWART, New York.
Discussion to be opened by WILLY MEYER, New York, and GEORGE E. PFAHLER, Philadelphia.
15. Ether Oil Colonic Anesthesia.
WALTER LATHROP, Hazleton, Pa.
Discussion to be opened by JAMES T. GWATHMEY, New York.

Friday, April 30—9 a. m.

Election of Officers

16. Report of Gunshot Wounds of the Chest.
ARTHUR M. SHIPLEY, Baltimore.
Discussion to be opened by JOHN L. YATES, Milwaukee, and JAMES T. GWATHMEY, New York.
17. Importance of the "Vital Capacity" in Thoracic Surgery (Lantern Demonstration).
EVARTS A. GRAHAM, St. Louis.
18. Prevention and Treatment of Pleurisy.
JOHN L. YATES, Milwaukee.
19. Observations on the Relative Value of the Various Operative Procedures Employed in Acute Empyema.
CARL EGGERS, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York; MARTIN B. TINKER, Ithaca, N. Y.; ARVINE E. MOZINGO, Indianapolis, and JAMES F. MITCHELL, Washington, D. C.
20. Fracture of the Femur: A Plea for a Better American Standard.
KELLOGG SPEED, Chicago.
Discussion to be opened by JOHN B. WALKER, New York.
21. Mobilization of Injured, Infected or Fractured Joints.
CLARENCE A. MCWILLIAMS, New York.
22. The Use of Bone and Fascia Grafts in the Reconstruction of Bones and Joints (Lantern Demonstration).
ADDISON G. BRENIZER, Charlotte, N. C.
23. Mechanic Stability of Fractures Following Operation (Motion Picture Demonstration).
PAUL B. MAGNUSON, Chicago.

**SECTION ON OBSTETRICS, GYNECOLOGY
AND ABDOMINAL SURGERY**

MEETS IN GRUNEWALD, CONVENTION HALL

OFFICERS OF SECTION

- Chairman—REUBEN PETERSON, Ann Arbor, Mich.
Vice Chairman—FRANCIS LE S. REDER, St. Louis.
Secretary—SIDNEY A. CHALFANT, Pittsburgh.
Executive Committee—HOWARD W. LONGYEAR, Detroit;
BROOKE M. ANSPACH, Philadelphia; THOMAS J. WATKINS, Chicago.
(Stenographer—Miss LIDIE C. ALEXANDER, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Future of Obstetrics and Gynecology as a Specialty.
REUBEN PETERSON, Ann Arbor, Mich.
2. Chronic Leukorrhea: Its Pathology and Treatment (Lantern Demonstration).
ARTHUR H. CURTIS, Chicago.
3. Conservation of the Menstrual Function.
WILLIAM J. MAYO, Rochester, Minn.
Discussion to be opened by C. JEFF MILLER, New Orleans.
4. Relation of Hyperplasia of the Endometrium to So-Called Functional Uterine Hemorrhage (Lantern Demonstration).
EMIL NOVAK, Baltimore.
5. A Plea for Total Hysterectomy in the Operative Treatment of Fibroid Tumors of the Uterus in Parous Women.
JOHN OSBORN POLAK, Brooklyn.
Discussion to be opened by EDWARD E. MONTGOMERY, Philadelphia.
6. Hernia of the Ovary.
WILLIAM W. GRANT, Denver.

7. Results of the Exposure of Animal Ovaries to the Rays of Radium (Lantern Demonstration).
JOHN M. MAURY, Memphis, Tenn.
Discussion to be opened by FRANCIS CARTER WOOD, New York.

Thursday, April 29—2 p. m.

8. The Sectional Anatomy of Labor (Lantern Demonstration).
A. H. FREELAND BARBOUR, Edinburgh.
9. A Consideration of Stillbirths and Neonatal Deaths in Their Relation to Obstetric Practice (Lantern Demonstration).
FRED L. ADAIR, Minneapolis.
Discussion to be opened by EDGAR J. HUENEKENS, Minneapolis, and N. SPROAT HEANEY, Chicago.
10. Abnormal Lactation (Lantern Demonstration).
MATHIAS J. SEIFERT, Chicago.
11. Intra-Uterine Insufflation of Oxygen (Artificial Pneumoperitoneum) for the Determination of Patency of the Fallopian Tubes in Cases of Sterility.
ISADOR C. RUBIN, New York.
Discussion to be opened by EDWARD REYNOLDS, Boston.
12. The Treatment of Obstinate Occipitoposterior Positions.
JOSEPH B. DELEE, Chicago.
Discussion to be opened by RALPH H. POMEROY, Brooklyn.
13. The Policy of Noninterference in the Treatment of Post-abortive and Puerperal Infections.
EDWARD L. KING, New Orleans.
14. The Management of Acute Appendicitis in the Later Weeks of Pregnancy. Report of Case Treated by Cesarean Section and Appendectomy.
JAMES M. MASON, Birmingham, Ala.
Discussion to be opened by NORBORNE PAGE COCKE, Birmingham, Ala.

Friday, April 30—2 p. m.

Election of Officers

15. Prolapse of the Urethra in the Female (Lantern Demonstration).
RICHARD R. SMITH, Grand Rapids, Mich.
Discussion to be opened by S. M. D. CLARK, New Orleans.
16. An Operation for Pruritus of the Vulva and Anus.
CARROLL W. ALLEN, New Orleans.
17. The So-Called Cases of Nephralgia.
DEWITT B. CASLER, Baltimore.
Discussion to be opened by JOHN T. GERAGHTY, Baltimore.
18. Primary Suture of the Renal Pelvis and Ureter After Removal of Stones.
LE GRAND GUERRY, Columbia, S. C.
Discussion to be opened by BENJAMIN A. THOMAS, Philadelphia.
19. Cysts of the Pancreas (Lantern Demonstration).
JOHN J. GILBRIDE, Philadelphia.
Discussion to be opened by ALBERT J. OCHSNER, Chicago.
20. An Improved Technic for Cholecystectomy Based on an Anatomic Study (Lantern Demonstration).
MOSES BEHREND, Philadelphia.
Discussion to be opened by JABEZ N. JACKSON, Kansas City, Mo., and ALFRED C. WOOD, Philadelphia.
21. Appendicitis Caused by Amebae Dysenteriae. Post-operative Perforation of an Amebic Ulcer of the Cecum (Lantern Demonstration).
EDGAR P. HOGAN, Birmingham, Ala.
Discussion to be opened by WILLIAM F. SHALLENBERGER, Atlanta, Ga.

SECTION ON OPHTHALMOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

- Chairman—ALLEN GREENWOOD, Boston.
Vice Chairman—NELSON M. BLACK, Milwaukee.
Secretary—GEORGE S. DERBY, Boston.
Executive Committee—WILLIAM ZENTMAYER, Philadelphia;
ALEXANDER DUANE, New York; CASSIUS D. WESCOTT, Chicago.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
ALLEN GREENWOOD, Boston.
2. Optic Nerve Disturbances in Diseases of the Posterior Nasal Sinuses.
JAMES BORDLEY, JR., Baltimore.
Discussion to be opened by GEORGE E. DE SCHWEINITZ, Philadelphia.

3. Optic Neuritis Associated with Disease of the Nasal Sinuses. EDWARD C. ELLETT, Memphis, Tenn.
Discussion to be opened by LEE M. FRANCIS, Buffalo.
4. Ocular Symptoms in Ophthalmic Goiter.
JOHN H. CLAIBORNE, New York.
Discussion to be opened by ALBERT E. BULSON, JR., Fort Wayne, Ind.
5. Mercurochrome-220. A Clinical Laboratory Report on Its Use in Ophthalmology.
WALTER B. LANCASTER, FRANCIS L. BURNETT and LOUIS H. GAUS, Boston.
Discussion to be opened by HUGH H. YOUNG, Baltimore.

Thursday, April 29—9 a. m.

DEMONSTRATION SESSION. EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

6. Address: Extraction of Cataract in Glaucoma.
VICTOR MORAX, Paris.
7. Thermophor Studies in Glaucoma.
WILLIAM E. SHAHAN and LAWRENCE POST, St. Louis.
Discussion to be opened by JOHN O. McREYNOLDS, Dallas, Texas.
8. Diagnosis of Chronic Intra-Ocular Tuberculosis.
HARRY H. STARK, El Paso, Texas.
Discussion to be opened by WILLIAM C. FINNOFF, Denver.
9. Ethylhydrocuprein in Diseases of the Eye.
ARTHUR J. BEDELL, Albany, N. Y.
Discussion to be opened by HARRY S. GRADLE, Chicago.
10. Communicating Vessels Between Retina and Choroid in Certain Cases of Chorioretinitis, with Remarks on a Fold of the Inner Limiting Membrane.
MARCUS FEINGOLD, New Orleans.
Discussion to be opened by EDWARD JACKSON, Denver.

Friday, April 30—9 a. m.

Election of Officers

Reports of Committees

11. Effect of Cold on the Temperature in the Orbit.
LUCIEN HOWE, Buffalo.
Discussion to be opened by ERASTUS E. HOLT, Portland, Maine.
12. Early Diagnosis of Pituitary Tumor with Ocular Phenomena. WILLIAM L. BENEDICT, Rochester, Minn.
Discussion to be opened by F. PHINIZY CALHOUN, Atlanta, Ga.
13. Four Cases of Sympathetic Ophthalmia with Reference to Treatment with Large Doses of Salicylate of Sodium. HERBERT MOULTON, Fort Smith, Ark.
Discussion to be opened by JAMES M. PATTON, Omaha.
14. A New Operation for the Relief of Dacryocystitis Through the Nasal Route.
MEYER WIENER and WILLIAM E. SAUER, St. Louis.
Discussion to be opened by WILLIAM H. WILDER, Chicago.
15. Restoration of the Margin of the Eyelid by a Free Graft from the Lower Part of the Eyebrow.
JOHN M. WHEELER, New York.
Discussion to be opened by NELSON M. BLACK, Milwaukee.

SECTION ON LARYNGOLOGY, OTOTOLOGY AND RHINOLOGY

MEETS IN MOOSE HALL

OFFICERS OF SECTION

Chairman—JOSEPH C. BECK, Chicago.
Vice Chairman—GEORGE M. COATES, Philadelphia.
Secretary—WILLIAM B. CHAMBERLIN, Cleveland.
Executive Committee—FRANCIS P. EMERSON, Boston; GREENFIELD SLUDER, St. Louis; LEE WALLACE DEAN, Iowa City.
(Stenographer—Miss F. E. DILLAN, Indianapolis)

Wednesday, April 28—2 p. m.

1. Chairman's Address. JOSEPH C. BECK, Chicago.
2. Plastic Surgery: Its Relation to the Otolaryngologist (Lantern Demonstration).
FERRIS N. SMITH, Grand Rapids, Mich.
3. Plastic Surgery of the Face.
MILLARD F. ARBUCKLE, East St. Louis, Ill.
4. Mixed Tumors of the Throat, Mouth and Face.
GORDON B. NEW, Rochester, Minn.
Discussion to be opened by LEE WALLACE DEAN, Iowa City.
5. Thyroid Surgery, Especially as Related to Laryngology.
JOHN F. BARNHILL, Indianapolis.
Discussion to be opened by GEORGE W. CRILE, Cleveland.

6. The Use and Possible Abuse of Radium in the Treatment of Malignant Tumors of the Nose and Throat.
ROBERT SONNENSCHNEIN, Chicago.
Discussion to be opened by WILLIAM L. CLARK, Philadelphia, and DUNBAR ROY, Atlanta, Ga.
7. Misleading Symptoms and Roentgen-Ray Findings in Suspected Mastoid Abscess.
RICHMOND MCKINNEY, Memphis, Tenn.
Discussion to be opened by SAMUEL IGLAUER, Cincinnati.

Thursday, April 29—2 p. m.

8. Present Status of Neuro-Otology from the Borderline Standpoint. JOSEPH D. HEITGER, Louisville, Ky.
Discussion to be opened by HAROLD I. LILLIE, Rochester, Minn.
9. Intracranial Lesions Involving the Auditory Vestibular Apparatus. EUGENE R. CARPENTER, Dallas, Texas.
Discussion to be opened by HARVEY CUSHING, Boston.
10. Neurolabyrinthitis Syphilitica.
GEORGE W. MACKENZIE, Philadelphia.
Discussion to be opened by GEORGE M. COATES, Philadelphia.
11. Clinical Manifestations of Infection of the Lateral Sinus.
FRANCIS P. EMERSON, Boston.
Discussion to be opened by WILLIAM E. SAUER, St. Louis.
12. Arthritis Deformans of the Larynx.
HENRY L. LYNNAH, New York.
Discussion to be opened by EMIL MAYER, New York.
13. The Indifference of the Laryngologist Toward Tuberculous Laryngitis and the Tuberculosis Problem.
WILLIAM V. MULLIN, Colorado Springs, Colo.
Discussion to be opened by JOHN B. McMURRAY, Washington, Pa.
14. The Diagnosis and Prognosis of Loss of Vision from Accessory Sinus Disease. LEON E. WHITE, Boston.
Discussion to be opened by HARRY H. STARK, El Paso, Texas, and HANAU W. LOEB, St. Louis.

Friday, April 30—2 p. m.

Election of Officers

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

Report of Committees

- Special Report on Local Anesthesia by the Committee on Therapeutic Research.
EMIL MAYER, New York, Chairman; ROSS HALL SKILLERN, Philadelphia, and ROBERT SONNENSCHNEIN, Chicago.
Discussion to be opened by RUDOLPH MATAS and CARROLL W. ALLEN, New Orleans.
15. Harelip and Cleft Palate. OWEN SMITH, Portland, Me.
Discussion to be opened by THOMAS E. CARMODY, Denver.
 16. New Method of Closing an Enlarged Tooth Root Opening into the Maxillary Antrum.
CULLEN F. WELTY, San Francisco.
Discussion to be opened by JOSEPH A. STUCKY, Lexington, Ky.
 17. Relative Value of Transillumination and Roentgenography in the Diagnosis of Disease of the Maxillary and Frontal Sinuses; with Description of an Orbitopalatal Route of Transilluminating the Maxillary Sinus (Lantern Demonstration).
HENRY H. BRIGGS, Asheville, N. C.
Discussion to be opened by J. WILKINSON JERVEY, Greenville, S. C.
 18. Nerve Blocking for Nasal Surgery.
ROBERT G. REAVES, Greensboro, N. C.
Discussion to be opened by HENRY H. MARTIN, Savannah, Ga.

SECTION ON DISEASES OF CHILDREN

MEETS IN ELKS' HALL

OFFICERS OF SECTION

Chairman—FRITZ B. TALBOT, Boston.
Vice Chairman—JULIUS H. HESS, Chicago.
Secretary—E. C. FLEISCHNER, San Francisco.
Executive Committee—JULIUS P. SEDGWICK, Minneapolis; LAURENCE R. DEBUYS, New Orleans; FRANKLIN P. GENGEBACH, Denver.
(Stenographer—Dr. G. G. TAYLOR)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Future of Pediatrics.
FRITZ B. TALBOT, Boston.
2. The Treatment of Indigestion in Children.
JOHN LOVETT MORSE, Boston.

3. The Treatment of Indigestion in Children from Six to Twelve Years of Age.
HARRY M. McCLANAHAN, Omaha.
4. The Relation of Acquired Food Dislikes of Childhood to the Diseases of Middle Life.
C. HILTON RICE, JR., Montgomery, Ala.
5. A Few Pertinent Questions on Maternal Feeding.
WILLIAM A. MULHERIN, Augusta, Ga.
6. How Pediatric Teaching of Nutrition May Affect the Nation's Welfare.
HENRY DWIGHT CHAPIN, New York.
7. Vegetable Fats in Infant Feeding.
GEORGE DOW SCOTT, New York.

Thursday, April 29—9 a. m.

8. Observations on Tumors of the Kidney in Children.
WILLIAM E. CARTER and LANGLEY PORTER, San Francisco.
9. Chronic Nephritis in Children.
LEWIS WEBB HILL, Boston.
10. Local Anesthesia in Surgery in Infancy and Childhood.
ROBERT E. FARR, Minneapolis.
11. Infantile Spinal Progressive Muscular Atrophy (Werdnig-Hoffmann).
EDGAR J. HUENEKENS, Minneapolis.
12. Human Heart with only Two Chambers (Cor Biloculare).
HARRY H. DONNALLY, Washington, D. C.
13. Acrodynia.
WILLIAM WESTON, Columbia, S. C.

Friday, April 30—9 a. m.

Election of Officers

14. The Temporary Teeth: Disorders Due to Their Neglect.
J. ROSS SNYDER, Birmingham, Ala.
15. The Coagulation Time of Blood in the New-Born with Special Reference to Cerebral Hemorrhage.
FREDERICK C. RODDA, Minneapolis.
16. Studies of the Effect of Diphtheria Toxin on the Heart.
HUGH McCULLOCH, St. Louis.
17. The Antiscorbutic Value of Proprietary Baby Foods.
JOSIAH J. MOORE, Chicago.
18. Intramuscular Injections of Blood as an Aid to Nutrition.
THOMAS D. PARKE, Birmingham, Ala.
19. Intubation of the Larynx: Analysis of 440 Cases in Private Practice
HENRY J. CARTIN, Johnstown, Pa.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN GRUNEWALD, GREEN ROOM

OFFICERS OF SECTION

Chairman—GEORGE W. MCCOY, Washington, D. C.
Vice Chairman—LEONARD G. ROWNTREE, Minneapolis.
Secretary—CARY EGGLESTON, New York.
Executive Committee—A. W. HEWLETT, San Francisco;
ARTHUR D. HIRSCHFELDER, Minneapolis; W. A. BASTEDO, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
GEORGE W. MCCOY, Washington, D. C.
2. The Actions of Some Homologues of Benzyl Alcohol.
ARTHUR D. HIRSCHFELDER, Minneapolis.
3. Some Observations on the Pharmacology of a Digitalis Body.
ROBERT A. HATCHER, New York.
4. Clinical Observations on the Absorption of Digitalis.
CARY EGGLESTON, New York.
5. Cancer Ameliorations and Cancer Immunity.
ARTHUR F. HOLDING, Madison, Wis.
6. The Treatment of Combined Diabetes and Nephritis.
FREDERICK M. ALLEN, J. W. MITCHELL and J. W. SHERRILL, New York.
7. Deficiencies in Our Methods of Treatment of Chronic Nephritis.
HENRY A. CHRISTIAN, Boston.
Discussion to be opened by LEWELLYS F. BARKER, Baltimore, and GEORGE DOCK, St. Louis.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND THERAPEUTICS AND ON DERMATOLOGY

Meeting Place—Hutchinson Memorial Building,
Lower Amphitheater

OLIVER S. ORMSBY, Chairman of Section on Dermatology,
Presiding.

CARY EGGLESTON, Secretary of Section on Pharmacology and Therapeutics, Officiating.

SYMPOSIUM ON ARSPHENAMIN

8. The Chemical Composition of Arspenamin and Neo-Arsphenamin and Its Relation to Toxicity (Lantern Demonstration).
GEORGE W. RAIZISS, Philadelphia.
9. The Pathology of Arspenamin and Neo-Arsphenamin Intoxication: An Experimental Study (Lantern Demonstration).
JOHN A. KOLMER and BALDUIN LUCKE, Philadelphia.
10. Some Salient Facts Regarding the Toxicity of Arspenamin and Neo-Arsphenamin.
GEORGE B. ROTH, Washington, D. C.
11. A Comparison of the Merits of Arspenamin and Neo-Arsphenamin: Laboratory and Clinical Studies (Lantern Demonstration).
JAY F. SCHAMBERG, Philadelphia.
12. Therapeutic Applications and Limitations of the Arspenamins.
JOHN H. STOKES, Rochester, Minn.
13. Effects of Arspenamin on Renal Function in Syphilitic Patients.
JOSEPH A. ELLIOTT, Charlotte, N. C.
14. The Use of Arspenamin in Nonsyphilitic Diseases.
HENRY J. NICHOLS and MATHEW A. REASONER, Washington, D. C.
Discussion of papers 8, 9, 10, 11, 12, 13 and 14 to be opened by WILLIAM A. PUSEY, Chicago, and WILLIAM H. GUY, Pittsburgh.

Friday, April 30—9 a. m.

Election of Officers

15. The Underlying Pathology of Arthritis and Rheumatoid Conditions as a Basis of Treatment.
RALPH PEMBERTON, Philadelphia.
16. Factors Affecting the Basal Metabolic Rate (Lantern Demonstration).
LEONARD G. ROWNTREE, ALBERT M. SNELL and FRANCES FORD, Minneapolis.
17. Clinical Observations on the Digitalis-Like Action of Squills.
PAUL D. WHITE, Boston.
18. The Management of the Circulation in Pneumonia.
HARLOW BROOKS and JOHN H. CARROLL, New York.
Discussion to be opened by JOSEPH A. CAPPS, Chicago.
19. Quantitative Studies in Chemotherapy (Lantern Demonstration).
CARL VOEGTLIN and HOMER W. SMITH, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN GRUNEWALD—GREEN ROOM

OFFICERS OF SECTION

Chairman—HOWARD T. KARSNER, Cleveland.
Secretary—JOSIAH J. MOORE, Chicago.
Executive Committee—JAMES EWING, New York; LOUIS B. WILSON, Rochester, Minn.; FRANCIS CARTER WOOD, New York.
(Stenographer—Miss MARGARET I. MALONEY, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: Teaching the Pathology of Function.
HOWARD T. KARSNER, Cleveland.
2. Increasing the Pathologist's Usefulness and Rewards.
BENJAMIN TAYLOR TERRY, Nashville, Tenn.
Discussion to be opened by JAMES EWING, New York; FRANCIS CARTER WOOD, New York, and WILLIAM C. MACCARTY, Rochester, Minn.
3. Experimental Pellagra in White Male Convicts.
JOSEPH GOLDBERGER and GEORGE A. WHEELER, Washington, D. C.
4. Review of the Recent Reports on Pellagra.
JAMES W. BABCOCK, Columbia, S. C.
5. The Pathology of Pellagra.
MARVIN L. GRAVES, Galveston, Texas.
Discussion of papers 3, 4 and 5 to be opened by MARTIN F. ENGMAN, St. Louis, and MARCUS HAASE, Memphis, Tenn.

6. Recent Advances in Clinical Blood Pressure Measurement.

CLYDE BROOKS and ALBERT M. BLEILE, Columbus, Ohio.

7. An Experimental Study of Acidosis Produced by Ether Anesthesia. WILLIAM S. CARTER, Galveston, Texas.

Thursday, April 29—2 p. m.

8. The Development of the Bactericidal Power of Whole Blood and of Antibodies in the Serum.
JAMES H. BLACK, Dallas, Texas.
9. Some Characteristics of Certain Epidemic Micro-Organisms.
DAVID J. DAVIS, Chicago.
10. The Toxic Substances Produced by Hemolytic Streptococci.
LUDVIG HEKTOEN, Chicago.
11. Penetration of the Intestine and Formation of Abdominal Abscess by Entameba Histolytica.
KENNETH M. LYNCH, Charleston, S. C.
12. Localization of Malarial Parasites in the Tissues.
CHARLES C. BASS, New Orleans.
13. A Mathematical Terminology for Neoplasia.
WILLIAM C. MACCARTY, Rochester, Minn.
14. Chronic Nephritis with Special Reference to the Interstitial Form.
LOUIS A. TURLEY, Norman, Okla.

Friday, April 30—2 p. m.

Election of Officers

15. Bacterial Vaccines: Their Uses and Abuses.
ADELBERT M. MOODY, Chicago.
16. The Wassermann Reaction: Prolonged Incubation in the Icebox Versus a Short Period over the Water Bath.
WARD T. BURDICK, Denver.
17. The Value of the Postmortem Wassermann Reaction.
F. STUART GRAVES, Louisville, Ky.
Discussion to be opened by EDWIN R. LECOUNT, Chicago.
18. Observations on the Quantitative Nature of Complement Fixation.
JOHN J. SEELMAN, Milwaukee.
Discussion to be opened by JOHN A. KOLMER, Philadelphia.
19. The Complement Fixation Reaction in Tuberculosis.
W. WARNER WATKINS and CLARENCE N. BOYNTON, Phoenix, Ariz.
20. Transplantation of the Kidney and Ovary.
I. CARLETON DEDERER, Bay City, Mich.
21. Inhalations of Carbon Dioxid in Combating Postoperative Shock.
YANDELL HENDERSON and HOWARD W. HAGGARD, New Haven, Conn., and RAYMOND C. COBURN, New York.

SECTION ON STOMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING,
FACULTY ROOM

OFFICERS OF SECTION

Chairman—VILRAY P. BLAIR, St. Louis.
Vice Chairman—HENRY S. DUNNING, New York.
Secretary—ARTHUR D. BLACK, Chicago.
Executive Committee—ARTHUR D. BLACK, Chicago; FREDERICK B. NOYES, Chicago; EUGENE S. TALBOT, Chicago.
(Stenographer—Mr. ARTHUR J. CHAPMAN, New Orleans)

Wednesday, April 28—2 p. m.

1. Chairman's Address. VILRAY P. BLAIR, St. Louis.
Discussion to be opened by G. V. I. BROWN, Milwaukee.
2. Emergency Splinting of Jaw Fractures: Intra-Oral Appliances.
LEO B. WINTER, New York.
3. Emergency Splinting of Jaw Fractures: Extra-Oral Appliances.
WILLIAM C. SPEAKMAN, Wilmington, Del.
4. Treatment of Fractures of the Angle and Ramus.
J. D. EBY, Philadelphia.
5. Gradual Reduction of Fractures of the Maxilla and Mandible.
A. L. MILLER, Fort McHenry, Md.
6. Treatment of Comminuted Fractures of the Mandible.
HERBERT A. POTTS, Chicago.
Discussion of papers 2, 3, 4, 5 and 6 to be opened by THOMAS L. GILMER, Chicago.

Thursday, April 29—2 p. m.

7. Epithelial Inlays versus Skin or Mucous Membrane Flaps for Replacing Lost Mucous Membrane in the Mouth.
GEORGE M. DORRANCE, Philadelphia.
8. Plastic Repair of Soft Tissue Injuries of the Face.
J. D. WHITHAM, Washington, D. C.
9. Final Report of War Cases of Comminuted Open Fractures of the Jaws and Those with Loss of Substance: Results of Bone Graft. ROBERT H. IVY, Philadelphia.
Discussion to be opened by M. I. SCHAMBERG, New York.
10. Adenoma of the Mucous Glands of the Mouth and Macrocheilia.
EDWARD H. HATTON, Chicago.
Discussion to be opened by FREDERICK B. MOOREHEAD, Chicago.
11. Surgical Treatment of Maxillary Sinusitis of Dental Origin.
HENRY S. DUNNING, New York.
Discussion to be opened by HERBERT A. POTTS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

12. Progress in Dental Education.
H. E. FRIESELL, Pittsburgh.
Discussion to be opened by EUGENE S. TALBOT, Chicago.
13. Dental Care of Children in Our Hospitals.
HAIDEE WEEKS GUTHRIE, New Orleans.
14. Training Public Schoolchildren in Mouth Hygiene.
A. C. FONES, Bridgeport, Conn.
15. Public Education in Mouth Hygiene.
OTTO U. KING, Chicago.
Discussion of papers 13, 14 and 15 to be opened by ARTHUR D. BLACK, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—ELMER E. SOUTHARD,* Boston.
*Deceased.
Vice Chairman—ARTHUR S. HAMILTON, Minneapolis.
Secretary—CHARLES W. HITCHCOCK, Detroit.
Executive Committee—BERNARD SACHS, New York; CHARLES EUGENE RIGGS, St. Paul; ARCHIBALD CHURCH, Chicago.
(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—9 a. m.

1. Chairman's Address.
ARTHUR S. HAMILTON, Minneapolis.
2. Reduction of Nervous Irritability and Excitement by Progressive Relaxation.
EDMUND JACOBSON, Chicago.
3. Influenza and Feeble-mindedness.
KARL A. MENNINGER, Topeka, Kan.
4. Conjugal Syphilis of the Nervous System.
ALFRED GORDON, Philadelphia.
5. Discussion of Therapeutic Agents in Chronic Nervous Diseases.
WILLIAM A. JONES, Minneapolis.
6. Congenital Facial Paralysis: Two Additional Cases.
FRANK R. FRY, St. Louis.
7. The Causes of Emotivity and Their Management.
TOM A. WILLIAMS, Washington, D. C.

Thursday, April 29—9 a. m.

8. A Theory of the Neuroses as Instinctive Reactions.
SIDNEY I. SCHWAB, St. Louis.
9. Prognosis of Traumatic Neurosis.
LOUIS A. MILLER, Toledo, Ohio.
10. Experiences with Luminal in Epilepsy.
JULIUS GRINKER, Chicago.
11. The Paraplegic Type of Multiple Sclerosis.
ARCHIBALD CHURCH, Chicago.
12. Endocrine Imbalance in the Feeble-minded.
OSCAR J. RAEDER, Boston.
13. The Amnesias in Head Injuries.
HAROLD N. MOYER, Chicago.
14. The Physiologic Significance of the Babinski Toe Response.
I. LEON MEYERS, Chicago.

Friday, April 30—9 a. m.

Election of Officers

15. Nervous and Mental Diseases: A Challenge to the Medical Profession.
FRANKWOOD E. WILLIAMS, New York.

16. Symptomatology of Spinal Cord Tumors with Illustrative Cases.
I. ABRAHAMSON and H. CLIMENKO, New York.
17. The Physician and the Neuropath.
CHARLES R. BALL, St. Paul.
18. Outline of a Scheme for Writing the Natural History of Syphilis.
SANGER BROWN, Chicago.
19. Measles: Brain Complications.
A. L. SKOOG, Kansas City, Mo.
20. The Relation of Worms to Epilepsy.
E. BATES BLOCK, Atlanta, Ga.
21. Encephalitis Lethargica.
EDWARD LIVINGSTON HUNT, New York.

SECTION ON DERMATOLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING,
LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—OLIVER S. ORMSBY, Chicago.
Vice Chairman—JOHN E. LANE, New Haven, Conn.
Secretary—WALTER J. HIGHMAN, New York.
Executive Committee—HENRY R. VARNEY, Detroit; HENRY H. HAZEN, Washington, D. C.; OTTO H. FOERSTER, Milwaukee.
(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—2 p. m.

1. Chairman's Address: A Valuable Method of Employing Arsphenamin in Syphilis.
OLIVER S. ORMSBY, Chicago.

SYMPOSIUM ON SYPHILIS

2. Polyneuritis Plus Dermatitis Exfoliativa Following Neo-Arsphenamin.
B. BARKER BEESON, Chicago.
3. Arsphenamin Dermatitis.
GEORGE M. OLSON, Minneapolis.
4. A Study of the Absorption of Mercury Injections by Means of the Roentgen Ray.
HAROLD N. COLE, Cleveland.
5. The Value of the Provocative Wassermann Test in the Diagnosis of Obscure Syphilis.
PAUL A. O'LEARY, Rochester, Minn.
6. Protein Sensitization in Eczema.
HOWARD FOX, New York, and J. EDGAR FISHER, Pittsburgh.
7. Infectious Eczematoid Dermatitis.
RICHARD L. SUTTON, Kansas City, Mo.
8. Eczema of the Vermilion Border of the Lips.
DOUGLASS W. MONTGOMERY and GEORGE D. CULVER, San Francisco.
9. Venipuncture as an Occasional Adjuvant in the Treatment of Certain Diseases of the Skin.
JEROME KINGSBURY and PAUL E. BECHET, New York.

Thursday, April 29—2 p. m.

JOINT MEETING OF SECTIONS ON PHARMACOLOGY AND
THERAPEUTICS AND ON DERMATOLOGY

SYMPOSIUM ON ARSPHENAMIN

For Program See Page 855

Friday, April 30—2 p. m.

Election of Officers

SYMPOSIUM ON NEW GROWTHS

17. A Clinical Study of Epitheliomas of the Lower Lip (Lantern Demonstration).
EVERETT S. LAIN, Oklahoma City.
18. Malignant Degeneration of Benign Dermatoses.
CHARLES M. WILLIAMS, New York.
19. Malignant Tumors of the Skin.
EARL D. CRUTCHFIELD, Galveston, Texas.
20. On Production of Tumors in the Absence of Parasites.
ERWIN F. SMITH, Washington, D. C.
21. The Treatment of Keloid and Hypertrophied Scars by Radiotherapy Alone or Combined with Excision.
GEORGE E. PFAHLER, Philadelphia.
Discussion of papers 17, 18, 19, 20 and 21 to be opened by NORMAN WALKER, Edinburgh.
22. Acidosis in Skin Diseases.
SAMUEL E. SWEITZER and HENRY E. MICHELSON, Minneapolis.

23. Lichen Spinulosus and Folliculitis Decalvans: A Clinical Combination.
FRANCIS E. SENEAR, Chicago.
24. The Association of Herpes Zoster and Varicella.
ERNEST L. MCEWEN, Chicago.
25. The Histogenesis of Molluscum Contagiosum (Lantern Demonstration).
LYLE B. KINGERY, Ann Arbor, Mich.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—JAMES A. HAYNE, Columbia, S. C.
Vice Chairman—J. D. MACLEAN, Harrisburg, Pa.
Secretary—CLARENCE D. SELBY, Toledo, Ohio.
Executive Committee—OTTO P. GEIER, Cincinnati; W. S. RANKIN, Raleigh, N. C.; CLARENCE ST. CLAIR DRAKE, Springfield, Ill.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—9 a. m.

1. Chairman's Address: The Rights of the Child.
JAMES A. HAYNE, Columbia, S. C.
2. What the American Red Cross Can Contribute to the General Health Program.
ERWIN A. PETERSON, Washington, D. C.
3. Mortality and Incidence of Leprosy Throughout the World.
FREDERICK L. HOFFMAN, Newark, N. J.
Discussion to be opened by ISADORE DYER, New Orleans.
4. Desirable Trend of National Health Policies.
BENJAMIN S. WARREN, Washington, D. C.
5. Minimum Standards of Organization for Municipal Health Departments.
CARROLL FOX, Boston.
6. Sanitation in Poland.
FRANCIS E. FRONCZAK, Buffalo.
7. The Training of Industrial Physicians.
J. A. WATKINS, Cincinnati.
Discussion to be opened by OTTO P. GEIER, Cincinnati.

Thursday, April 29—9 a. m.

8. The Carrier Question in Epidemic Meningitis and Diphtheria.
CHARLES M. ABBOTT, Alexandria, La.
9. Typhoid Reduction in South Carolina: Results in Counties with Health Organization.
LUTHER A. RISER, Columbia, S. C.
Discussion to be opened by KNOX E. MILLER, Raleigh, N. C.
10. Heart Disease as a Public Health Problem.
LEWIS A. CONNER, New York.
Discussion to be opened by ALEXANDER LAMBERT, New York.
11. Eradication of Malaria: A National Health Problem.
LUNSFORD D. FRICKS, Memphis, Tenn.
12. Trachoma: A Public Health Problem of the States (Lantern Demonstration).
JOHN McMULLEN, Louisville, Ky.
Discussion to be opened by ARTHUR T. MCCORMACK, Louisville, Ky., and ALLEN W. FREEMAN, Columbus, Ohio.
13. Industrial Epidemiology.
W. A. SAWYER, Rochester, N. Y.

Friday, April 30—9 a. m.

Election of Officers

14. The Work of the Department of Health of the Tennessee Coal, Iron and Railroad Company.
LLOYD NOLAND, Birmingham, Ala.
Discussion to be opened by CLYDE E. FORD, New York.
15. The Difficulties of Public Health Administration.
GROVER C. MCKINNEY, Lake Charles, La.
16. An Ambulatory Clinic.
RALPH N. GREENE, Jacksonville, Fla.
17. Lessons Taught by Measures for Control of Venereal Diseases and Suggestions for the Future.
CLAUDE C. PIERCE, Washington, D. C.
18. The Necessity for the Reporting of Venereal Disease by Physicians.
WILLIAM EDLER, New Orleans.
Discussion to be opened by OSCAR DOWLING, New Orleans.
19. The Differential Diagnosis of Conjunctival Folliculosis and Trachoma.
J. WILKINSON JERVEY, Greenville, S. C.
Discussion to be opened by HENRY DICKSON BRUNS, New Orleans, and THEODORE OERTEL, Augusta, Ga.

SECTION ON UROLOGY

MEETS IN HUTCHINSON MEMORIAL BUILDING,
LOWER AMPHITHEATER

OFFICERS OF SECTION

Chairman—WILLIAM E. LOWER, Cleveland.

Vice Chairman—RICHARD F. O'NEIL, Boston.

Secretary—E. O. SMITH, Chicago.

Executive Committee—HUGH CABOT, Ann Arbor, Mich.;
EDWARD L. KEYES, JR., New York; WILLIAM F. BRAASCH,
Rochester, Minn.

(Stenographer—Mrs. IRENE H. SNYDER, Chicago)

Wednesday, April 28—9 a. m.

1. Chairman's Address: Disposition of the Ureter in Surgical Conditions of the Bladder Involving the Ureteral Orifices. WILLIAM E. LOWER, Cleveland.
2. Results of Surgical Treatment of Tumors of the Bladder. E. STARR JUDD and WALTER E. SISTRUNK, Rochester, Minn.
3. Radium Treatment of Bladder Carcinoma. BENJAMIN S. BARRINGER, New York.
4. Bladder Tumors: Pathology and Radiumtherapy. JOHN T. GERAGHTY, Baltimore.
5. The Treatment of Bladder Tumors with Analysis of Cases. BENJAMIN A. THOMAS, Philadelphia. Discussion of papers 2, 3, 4 and 5 to be opened by LOUIS E. SCHMIDT, Chicago, EDWARD L. KEYES, New York, and HUGH CABOT, Ann Arbor, Mich.
6. Papillomatous Epithelioma of Kidney Pelvis. PERCY E. MCCOWN, Indianapolis. Discussion to be opened by E. STARR JUDD, Rochester, Minn., and WILLIAM E. LOWER, Cleveland.

Thursday, April 29—9 a. m.

7. Abdominal Pain in Diseases of the Kidney and Ureters. ARTHUR B. CECIL, Los Angeles. Discussion to be opened by ALFRED I. FOLSOM, Dallas, Texas.
8. Studies of Pyelitis in Infancy. HERMAN L. KRETSCHMER, Chicago. Discussion to be opened by WILLIAM C. QUINBY, Boston, and WILLIAM F. BRAASCH, Rochester, Minn.
9. Nephrectomy: Based on the Record of 250 Cases. ABRAHAM HYMAN and EDWIN BEER, New York. Discussion to be opened by ALEXANDER RANDALL, Philadelphia.
10. Ureteral Obstruction and Dilatation in the Male. ALBERT E. GOLDSTEIN, Baltimore. Discussion to be opened by BRANSFORD LEWIS, St. Louis, and JOHN G. KELLER, Toledo, Ohio.
11. Occluded Renal Tuberculosis (Lantern Demonstration). WILLIAM F. BRAASCH, Rochester, Minn. Discussion to be opened by JOSEPH HUME, New Orleans.
12. Developmental Factors in the Formation of Certain Vesical Diverticula (Lantern Demonstration). ERNEST M. WATSON, Buffalo. Discussion to be opened by OSWALD S. LOWSLEY, New York.
13. Diverticulum of the Bladder (Lantern Demonstration). FRANCIS M. MCCALLUM, Kansas City, Mo. Discussion to be opened by COURTNEY W. SHROPSHIRE, Birmingham, Ala.

Friday, April 30—9 a. m.

Election of Officers

14. Contraindications to Prostatectomy (Lantern Demonstration). JAMES A. GARDNER, Buffalo. Discussion to be opened by HUGH H. YOUNG, Baltimore.
15. Ulcer of the Bladder—Hunner Type. HARRY A. FOWLER, Washington, D. C. Discussion to be opened by GUY L. HUNNER, Baltimore.
16. Bladder Findings in Central Nervous System Diseases. JOHN R. CAULK, St. Louis. Discussion to be opened by BUDD C. CORBUS, Chicago, and HARRY W. PLAGGEMEYER, Detroit.
17. Urological and Venereal Idiosyncrasies in the Negro. GEORGE H. DAY, Louisville. Discussion to be opened by CARL L. WHEELER, Lexington, Ky.

18. Gonorrhea of the Lower Genito-Urinary Tract in Women, with Special Reference to the Glands of Bartholin. WILLIAM E. STEVENS and MAURICE HEPPNER, San Francisco.

Discussion to be opened by GEORGE G. SMITH, Boston, and RUFUS L. RIGDON, San Francisco.

19. Orchitis from Mumps: Conservation of the Testes by Incision of the Tunica Albuginea.

EDGAR G. BALLENGER, Atlanta, Ga.

Discussion to be opened by FRANCIS R. HAGNER, Washington, D. C.

20. Spermatogenesis in Relation to Childlessness (Lantern Demonstration).

VICTOR D. LESPINASSE, Chicago.

Discussion to be opened by MAX HUHNER, New York.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN CHARITY HOSPITAL, AMPHITHEATER

OFFICERS OF SECTION

Chairman—GEORGE W. HAWLEY, New York.

Vice Chairman—ROLAND HAMMOND, Providence, R. I.

Secretary—HENRY BASCOM THOMAS, Chicago.

Executive Committee—EDWIN W. RYERSON, Chicago; ALBERT H. FREIBERG, Cincinnati; EMIL S. GEIST, Minneapolis.

(Stenographer—Miss ADELAIDE FOLSOM, Ripon, Wis.)

Wednesday, April 28—2 p. m.

1. Orthopedic Conditions Directly Due to Sterilized Food in Infancy (Lantern Demonstration). FRANK E. PECKHAM, Providence, R. I. Discussion to be opened by MAURICE L. BLATT, Chicago, and EDWARD S. HATCH, New Orleans.
2. Operations for Repair of Bone Defects: Results Obtained at Letterman General Hospital (Lantern Demonstration). LEO ELOESSER, San Francisco. Discussion to be opened by J. PAUL JONES, Camden, Ala.
3. Results of Bone Graft at U. S. Army Hospital No. 3 (Lantern Demonstration). JOHN SPENCER DAVIS, Dallas, Texas, and JACOB J. SYBENGA, Pella, Iowa. Discussion to be opened by PAUL B. MAGNUSON, Chicago, and ERASMUS D. FENNER, New Orleans.

SYMPOSIUM ON TREATMENT OF INFANTILE PARALYSIS

4. Transverse Horizontal Section of the Tarsus in Paralytic Calcaneus and Flail Foot (Lantern Demonstration). DEFOREST P. WILLARD, Philadelphia.
5. Operative Treatment of Infantile Paralysis. ROBERT W. LOVETT, Boston.
6. Indications for and End-Results of Surgical Operations in Infantile Paralysis (Lantern Demonstration). H. WINNETT ORR, Lincoln, Neb.
7. Sling Suspension Method of Exercises in Infantile Paralysis (Lantern Demonstration). FRÉDÉRIC J. GAENSLEN, Milwaukee. Discussion of papers 4, 5, 6 and 7 to be opened by JOHN D. RIDLON, Chicago; FRANK D. DICKSON, Kansas City, Mo.; JAMES O. WALLACE, Pittsburgh; WILLIS K. WEST, Oklahoma City; ARTHUR STEINDLER, Iowa City; CLARENCE W. EAST, Springfield, Ill.; PHILIP D. WILSON, Boston, and HENRY B. THOMAS, Chicago.

Thursday, April 29—2 p. m.

8. Anterior Bow-Legs. WALLACE BLANCHARD, Chicago. Discussion to be opened by WILLIS C. CAMPBELL, Memphis, Tenn., and H. WINNETT ORR, Lincoln, Neb.
9. Chairman's Address: Constructive Versus Reconstructive Surgery of the Extremities. ROLAND HAMMOND, Providence, R. I.
10. Some of the Difficulties in the Diagnosis of Osteosarcoma (Lantern Demonstration). ROBERT B. COFIELD, Cincinnati. Discussion to be opened by DEAN D. LEWIS, Chicago, and FRÉDÉRIC J. GAENSLEN, Milwaukee.
11. Dislocation of the Carpal Semilunar Bone (Lantern Demonstration). WALTER G. STERN, Cleveland. Discussion to be opened by SAMUEL KLEINBERG, New York, and EDWARD S. HATCH, New Orleans.

12. Recurrent Dislocations and Allied Chronic Conditions of the Shoulder. T. TURNER THOMAS, Philadelphia. Discussion to be opened by WILLIAM J. MERRILL, Philadelphia; MELVIN S. HENDERSON, Rochester, Minn., and ALFRED C. WOOD, Philadelphia.

13. The Objective Symptoms of Foot Strain (Lantern Demonstration). ALBERT H. FREIBERG, Cincinnati. Discussion to be opened by JOHN L. PORTER, Chicago, and JOHN CARLING, Los Angeles.

14. Unstandardized Versus Standardized Splints. HORACE R. ALLEN, Indianapolis. Discussion to be opened by CLARENCE W. HOPKINS, Chicago.

Friday, April 30—2 p. m.

Election of Officers

15. Operative Treatment of Peripheral Nerve and Associated Bone Lesions in One Stage. JOHN O. BOWER, Philadelphia. Discussion to be opened by WILLIAM W. BARCOCK, CHARLES H. FRAZIER, Philadelphia, and HARRY HYLAND KERR, Washington, D. C.

SYMPOSIUM ON RESTORATION OF THE DISABLED

16. Restoration of the Disabled in War as Applied to Industrial Disability. ELLIOTT G. BRACKETT, Boston.

17. Reclamation Service for Workmen Permanently Handicapped in Industry. HARRY E. MOCK, Chicago.

18. Progress in the Care of Cripples.

CARROLL L. STOREY, Detroit. Discussion of papers 16, 17 and 18 to be opened by CLARENCE ST. CLAIR DRAKE, Springfield, Ill.; ALBERT H. FREIBERG, Cincinnati; JOHN T. O'FERRALL, New Orleans, FRANK G. MURPHY, Chicago, and FREDERICK C. KIDNER, Detroit.

19. Intra-Articular Fractures. ROBERT D. SCHROCK, Omaha. Discussion to be opened by PAUL A. McILHENNY, New Orleans; HENRY C. MARBLE, Boston; NATHANIEL ALLISON, St. Louis, and NORMAN KERR, Chicago.

20. The Occurrence and Causes of Functional Scoliosis in College Men.

WILLIAM L. ESTES, South Bethlehem, Pa. Discussion to be opened by ROBERT W. LOVETT, Boston, and EDWIN W. RYERSON, Chicago.

SECTION ON GASTRO-ENTEROLOGY
AND PROCTOLOGY

MEETS IN LOYOLA HALL

OFFICERS OF SECTION

Chairman—FRANK SMITHIES, Chicago.
Vice Chairman—LOUIS J. HIRSCHMAN, Detroit.
Secretary—HORACE W. SOPER, St. Louis.
Executive Committee—DWIGHT H. MURRAY, Syracuse, N. Y.; ANTHONY BASSLER, New York; WILLIAM M. BEACH, Pittsburgh.
(Stenographer—Mrs. M. C. REPP, Philadelphia)

Wednesday, April 28—2 p. m.

1. Chairman's Address: The Significance of Etiologic Factors in the Treatment of Peptic Ulcer.

FRANK SMITHIES, Chicago.

2. Principles of Gastric Analysis.

MARTIN E. REHFUSS, Philadelphia.

Discussion to be opened by ANTHONY BASSLER and G. A. FRIEDMAN, New York.

3. Fractional Gastric Analyses.

GEORGE REESE SATTERLEE, New York, and WALTER B. JENNINGS and HENRY A. COTTON, Trenton, N. J.

Discussion to be opened by BURRILL B. CROHN, New York; MARTIN E. REHFUSS, Philadelphia, and JOHN P. SAWYER, Cleveland.

4. The Differential Diagnosis of Amebiasis, Tuberculosis, Syphilis and Carcinoma as Manifested in the Rectum and Pelvic Colon.

J. RAWSON PENNINGTON, Chicago.

Discussion to be opened by CHARLES J. DRUECK, Chicago; CHARLES E. HYNDMAN, St. Louis, and HOLLAND H. DONALDSON, Pittsburgh.

5. Hemorrhoidectomy: Composite Operation.

EDWARD G. MARTIN, Detroit.

Discussion to be opened by LOUIS J. KROUSE, Cincinnati; JAMES A. DUNCAN, Toledo, Ohio, and GEORGE W. COMBS, Indianapolis.

6. Diverticula of the Small Intestines other than Meckel's Diverticulum. JAMES T. CASE, Battle Creek, Mich. Discussion to be opened by WILLIAM J. MAYO, Rochester, Minn., and DUDLEY D. ROBERTS, New York.

7. Hypotension Headache in Relation to Constipation.

ERNEST CLYDE FISHBAUGH, Los Angeles.

Discussion to be opened by ALBERT BERNHEIM, Philadelphia; JOHN D. DUNHAM, Columbus, Ohio, and ELSWORTH S. SMITH, St. Louis.

Thursday, April 29—2 p. m.

8. Further Studies on Gastric and Duodenal Ulcer.

A. C. IVY, Chicago.

Discussion to be opened by CHARLES H. NEILSON, St. Louis, and WALTER C. ALVAREZ, San Francisco.

9. Gastrojejunal Ulcer: Clinical Study of Eighty-Four Cases.

GEORGE B. EUSTERMAN, Rochester, Minn.

Discussion to be opened by JULIUS FRIEDENWALD, Baltimore; CHARLES H. MAYO, Rochester, Minn., and WILLARD BARTLETT, St. Louis.

10. Critical Review of 500 Cases of Gastric and Duodenal Ulcer.

ELMER L. EGGLESTON, Battle Creek, Mich.

Discussion to be opened by JAMES TAFT PILCHER, Brooklyn, and SIDNEY K. SIMON, New Orleans.

11. Specialization in the Medical and Surgical Treatment of Ulcer of the Stomach and Duodenum.

ANGELO L. SORESI, New York.

Discussion to be opened by CHARLES D. AARON, Detroit, and E. STARR JUDD, Rochester, Minn.

12. Insufficiency of the Cardia.

JOSEPH SAILER, Philadelphia.

Discussion to be opened by HARRY G. WALCOTT, Dallas, Texas; EDWARD H. SKINNER, Kansas City, Mo., and SEALE HARRIS, Birmingham, Ala.

13. Rectocolonic Therapy.

ALFRED J. ZOBEL, San Francisco.

Discussion to be opened by LOUIS J. HIRSCHMAN, Detroit; WILLIAM M. BEACH, Pittsburgh; DWIGHT H. MURRAY, Syracuse, N. Y., and J. RAWSON PENNINGTON, Chicago.

14. The Evidence in Favor of Water Drinking with Meals.

ELBRIDGE G. CUTLER, Boston.

Discussion to be opened by JOHN M. BELL, St. Joseph, Mo.; ERNEST ZUEBLIN, Cincinnati, and JOHN W. BELL, Minneapolis.

Friday, April 30—2 p. m.

Election of Officers

15. Mucous Colitis.

WILLIAM H. STAUFFER, St. Louis.

Discussion to be opened by J. DAWSON REEDER, Baltimore; JOHN M. FRICK, Toledo, Ohio, and J. COLES BRICK, Philadelphia.

16. Modification of Intestinal Flora.

J. RUSSELL VERBRYCKE, JR., Washington, D. C.

Discussion to be opened by WILLIAM GERRY MORGAN, Washington, D. C., and ANTHONY BASSLER, New York.

17. Arthritic Changes in the Spine and Their Relation to the Roentgenologic Study of the Gastro-Intestinal Tract.

WILLIAM S. NEWCOMET, Philadelphia.

Discussion to be opened by SHERWOOD MOORE, St. Louis; JAMES T. CASE, Battle Creek, Mich., and JOHN BRYANT, Boston.

18. What Is Being Done for the Insane by Means of Surgery.

JOHN W. DRAPER, New York.

Discussion to be opened by HENRY A. COTTON, Trenton, N. J., and JEROME M. LYNCH, New York.

19. The Roentgenology of the Appendix: The Significance of the Opaque Filling in Chronic Appendicitis.

EDWARD H. SKINNER, Kansas City, Mo.

Discussion to be opened by R. WALTER MILLS, St. Louis; GEORGE E. PFAHLER, Philadelphia, and MARSH PITZMAN, St. Louis.

20. Visualization of the Duodenum by Means of the Duodenal Tube.

ISRAEL D. PALEFSKI, New York.

Discussion to be opened by MAX EINHORN, New York, and CLEMENT R. JONES, Pittsburgh.

21. The Treatment of the Chronic Intestinal Invalid.

JOHN BRYANT, Boston.

Discussion to be opened by JEROME M. LYNCH and JOHN W. DRAPER, New York, and J. C. JOHNSON, Atlanta, Ga.

22. Diaphragmatic Hernia Diagnosed During Life.

M. MILTON PORTIS and SIDNEY A. PORTIS, Chicago.

Discussion to be opened by GEORGE E. PFAHLER, Philadelphia, and LEWIS GREGORY COLE and SEYMOUR BASCH, New York.

THE EXHIBITS—ALLONS!

"Allons," said Dr. Voolayvoo, as the discussion of the last paper of the first morning dwindled to a close, "let us depart quickly from here."

"Why the haste?" I asked.

"The exhibits, the exhibits, my friend. Do you not know that in them is enough of interest to occupy our full time all of this week? We must arrive there before the crowd. I know of no other feature of this magnificent gathering that offers more to the physician than these exhibits."

"You mean the free samples?" I queried.

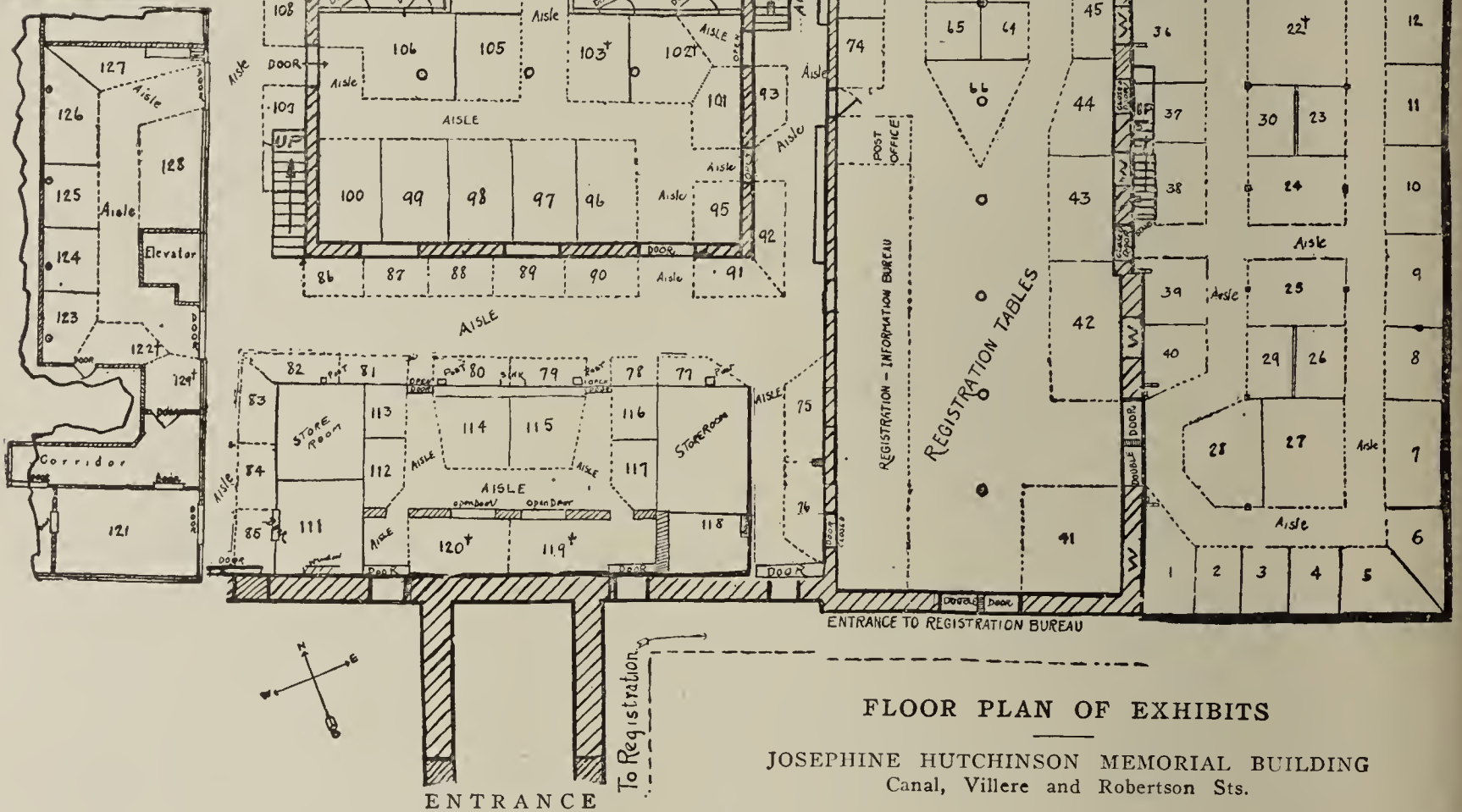
"Oh, non, non, vous ne-comprenez-pas," said Dr. Voolayvoo, witheringly, and I knew I had made a faux pas. "It is not the material things, valuable though they may be, but

rather the new ideas one finds at these commercial exhibits that make them of value."

"But, I really don't want to buy anything," said I weakly.

"Ma foi, that is not necessary," answered Voolayvoo.

"Perhaps you have been wrongly impressed by that word



FLOOR PLAN OF EXHIBITS

JOSEPHINE HUTCHINSON MEMORIAL BUILDING
Canal, Villere and Robertson Sts.

List of Exhibitors

	Space No.
Abbott Laboratories, The, Chicago, Hospital tent	
Allison Co., W. D.	85-111
Aloe Co., A. S.	68-69-70-71
American Surgical Specialty Co., Chicago	33
Anatomik Footwear Co., New York	99
Appleton & Co., D., New York	91-92
Armour & Co., Chicago	7
B. B. Culture Laboratory, Yonkers, N. Y.	2
Bard-Parker Co., New York	25
Baum Co., Inc., Wm. A., New York	95
Bausch & Lomb Optic. Co., Rochester, N. Y.	6
Becton-Dickinson Co., Rutherford, N. J.	20
Berger Bros. Co., New Haven, Conn.	23-30
Betz Co., Frank S., Hammond, Ind.	19-31-32
Blakiston's Son & Co., P., Philadelphia	43
Boehm Surgical Inst. Co., Rochester, N. Y.	127
Brady & Co., Geo. W., Chicago	8
Buzzell Flanders Co., Boston	112-113
Calco Chemical Co., The, New York	114
Campbell Electric Co., Lynn, Mass.	121
Chicago Medical Book Co., Chicago	45
Crain Publishing Co., Chicago	86
Cummings Chem. Co., W. L., Lansdowne, Pa.	77
Davis Co., F. A., Philadelphia	9
Dennison Mfg. Co., Framingham, Mass.	5
Dennos Products Co., Chicago	75
DeVilbiss Mfg. Co., The, Toledo	44
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Weder Mfg. Co., Philadelphia	46
Welch Grape Juice Co., The, Westfield N.Y.	52
Wilson & Wilson, Boston	83
Wood & Co., Wm., New York	48-49
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'commercial.' You must understand, my friend, that these exhibit gentlemen are here to serve us, to show us new ideas, new and better ways of doing things—and with all due respect to the intelligence of our noble profession, I may add—to help us."

"All right, let's go, then," I said.

WITHOUT RESERVATIONS

Dr. Voolayvoo was right. He seemed to be an "old timer" conventionist. I, being a novitiate, placed myself implicitly under his guidance. When we stepped into the Exhibit Hall I guess I looked like a child gazing at a Christmas tree—so many things, I simply stared. I was brought back to earth by the sound of my friend's voice. "Is it not wonderful," said he, "to see so much all in one unified exhibition arranged solely for the benefit of ourselves and our colleagues?"

"It sure is," I replied. "But, how in the world are we going to see it all?"

"Listen to me, my friend," said the Doctor, "we cannot see it all in one trip around. But we could ill afford to miss any one of these exhibits. Take my advice and concentrate on one exhibit at a time. And then you must come back tomorrow and each of the remaining days. Ah, voila, right before us is the Saunders exhibit."

"Say, I've been reading the announcements of those new Saunders books. Wonder if they have them here," I said.

BOOKS BOOKS BOOKS

They surely had—it was a regular bookstore. Warbasse's "Surgical Treatment," Burton-Opitz' "Textbook of Physiology," Mock's "Industrial Medicine and Surgery," the new "Mayo Clinic Volume," Dunton's "Reconstruction Therapy," and all the others were there. I could have camped at that exhibit alone for a good half day. But just across the aisle was another attractive book exhibit which I knew I must see—that of the Lippincott Company, and I also remembered some of the other book men who, too, would doubtless have attractive exhibits.

The Lippincott books were conveniently arranged for quick reference, and included a large line of practical medical, pharmaceutical and nursery texts. A courteous representative called our special attention to Buckley's "The Basis of Psychiatry," Sharp's long-wanted volume on "Brain Injuries," and Wilson and Potter's "Internal Medicine." Also, we could not deny ourselves the privilege of studying the splendid collection of fifty hand-colored Anatomical Charts from Pier-sol's "Human Anatomy."

CULTURE—THE B. B. KIND

Leaving the book exhibits, we stopped to examine the exhibit of the the B. B. Culture Laboratory. "This preparation I find very useful as a biological antiseptic for both internal and external uses," said Voolayvoo. "What, you have not yet tried it? Indeed, you must leave your name and address and have a complimentary bottle sent you."

"Happy thought," said I, "but now tell me who is the tall brunette gentleman in this next booth?"

"That, my friend, is Paul B. Hoeber. You have heard of "The American Journal of Roentgenology," the "Annals of Medical History" and the "Neurological Bulletin," n'est-ce-pas? Mr. Hoeber publishes these journals and is showing them here." We stopped and besides these different journals I found some very interesting books, one of which I had been wanting for some time—Mackenzie's "Symptoms and Their Interpretations." So I ordered a copy right then and there.

EVERYTHING BUT GOAT GLANDS

"Do you employ the animal derivatives such as corpus luteum, pituitary extract, thyroids, etc., in your practice?" asked my guide and conductor as we passed on. "If so, you must not fail to see this interesting exhibit by the Hollister-Wilson Laboratories." He was right. Not until then did I realize how exacting were the requirements for producing dependable animal derivatives. I was specially interested in the set of original specimens showing the different phases of production in this field.

Proceeding farther, we stopped at the Bausch & Lomb exhibit, Space 6, where trained, scientific men were demon-

strating physicians' microscopes, a new model microtome, ophthalmological apparatus and hemacytometers of B. & L. manufacture. This was an opportunity I welcomed, for I have been thinking for some time I ought to have a microscope. The B. & L. instrument appealed to me strongly.

In the next booth was the Armour exhibit—endocrine gland and organotherapeutic preparations.

"Ah, my friend, you must hear the story of how some of these products are made," said Dr. Voolayvoo. "It is really wonderful—fascinating. For one pound of their supra-renaline alone, the glands of 135,000 sheep are required." We spent a full half hour there.

A BIG SPHYG

At the Taylor Instrument Companies' Booth we saw a demonstration of their new Office Type Sphygmomanometer. This is an instrument worthy of every physician's attention. Some other very interesting instruments for home use were shown—particularly the Recording Hygrometer and Bath Thermometers in new patterns. Across the aisle we stopped to examine the new (8th) revised edition of Sajous' "Analytic Cyclopedia of Practical Medicine," shown by F. A. Davis Company. The handsome appearance of this eight-volume set appealed strongly to my guide's aesthetic sensibilities. We also got deeply interested in the new books displayed by this firm, particularly "Regional Anesthesia" by Sher-wood-Dunn.

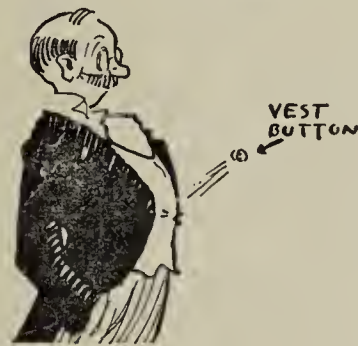
BETTER BELTS FOR BAGGY ABDOMENS

In Spaces 23 and 30 was an exhibit of Abdominal Supports which attracted our attention. This was the well known Spencer line, manufactured by Berger Brothers Company, and included abdominal belts (not corsets) for men and women, abdominal supporting corsets, sacro-iliac corsets and belts, maternity supports, etc. "You will note," said Dr. Voolayvoo, "that these supports are non-elastic and depend on correct design for comfort and efficiency." "Good idea," I thought.

Just then I noticed the Hanovia Chemical & Manufacturing Company's exhibit of the Alpine Sun Lamp and the Kromayer Lamp. I had never seen one of these in action, hence greatly appreciated the actual working demonstration by a competent representative. I found out that these lamps have a wide range of usefulness in applying quartz ultra-violet light for therapeutic purposes.

"Ah, sapristi, what clear, sharp X-ray negatives," enthused Dr. Voolayvoo, as his eye fell on the Eastman Kodak Company's exhibit, "and made on films, too, which are so convenient, so easy to preserve." I readily agreed with him and before leaving, jotted down in my note book the words, "Dupli-Tized Films—Eastman."

NICE LITTLE DISPLAY I'VE
GOT FIXED UP HERE: OUGHT
TO STOP MOST OF THEM
I GUESS!



THE X-RAY BEGINS TO PENETRATE

Very smoothly our attention switched to the neighboring exhibit, Spaces 12 and 13, for it was X-Ray machines—the new Kelley-Koett Unit and several other X-Ray specialties shown for the first time. I carried away one of their descriptive booklets. The demonstration of the K. K. Unit, together with those of Eastman negatives, had set up a powerful thinking within me.

Across the aisle was another X-Ray exhibit—The Patterson Screen Company with their Fluoroscopic and Intensifying Screens. Their screens for double screen work have been giving wonderful results, I understand. They had a new catalog on screens and their care. I was glad to get a copy.

MR. FISCHER ENTHUSES

This section seemed to be a veritable X-Ray stronghold. For the very next exhibits to catch our eye were those of the H. G. Fischer & Company and Thompson Plaster Company. I had seen a full page announcement in THE JOURNAL OF THE A. M. A. regarding the Fischer Universal Machine, and that had whetted my desire to see an actual demonstration. Here I saw it and readily understood why it is called "Universal." Mr. Fischer was quite enthusiastic over their new building, too. Said it would enable them to turn out a greater quantity of machines and give better service than ever before. The Thompson Plaster Company had several models, from their portable C up to the big Type F machine which does all kinds of X-Ray work and furnishes

practically every modality that the electrotherapeutist could desire. The idea of an X-Ray equipment all my own, was indeed growing on me. More catalogs.

"But, come, come, my friend. The time is passing," Dr. Voolayvoo reminded me. "Here is the Becton, Dickinson & Company's exhibit of thermometers, Luer syringes, Yale needles, Ace bandages and Asepto plungerless syringes. And

WONDER THO IF IT WOULDN'T BE
BETTER TO PUT THE WICKER CHAIR
OVER IN THIS CORNER, AND HAVE
THAT SIGN CROSSWISE, INSTEAD
OF LIKE ALL
THE OTHERS!



improved, too. Oh, c'est étonnant, how progressive these people are."

Adjacent in Spaces 16 and 17 was a veritable treat for the Eye, Ear, Nose and Throat men—the exhibit of E. B. Meyrowitz Co. Of particular interest were the Braun Snaretome, the Braun Adenotome, a non-luminous Rheostat and a pneumatic Test Type Cabinet with perfect illumination.

WE DO THE BETZ BOOTHS

Next we saw the large and complete display of the Frank S. Betz Company. Previous to that, I had a good catalog acquaintance with the Betz Co., but here were the goods themselves—instruments, apparatus, surgical merchandise, hospital furniture, electrical apparatus—and even a large line of pharmaceutical products. They told me that their line is limited only by the maximum demands of the profession. I believe it, for they seem to have everything a physician needs. Prices reasonable, too.

"See what a splendid set of electrically lighted instruments," said Dr. Voolayvoo, pointing to the Electro-Diagnoset set of the American Surgical Specialty Company across the aisle. We watched the demonstration. It is really remarkable the help one can have from these instruments in tonsillectomies and all other official operations or examinations. They can be used in the office, hospital or home.

In the corner space nearby, was the H. A. Metz Laboratories exhibit of Arsphenamine, Neoarsphenamine, Anesthesin, Novocain, Holocain and Pyramidon. This exhibit was of great practical value, because laboratory men were in constant attendance to demonstrate procedures for making solutions of Arsphenamine and Neoarsphenamine.

Going down the aisle, we stopped at Spaces 34, 35 and 36 to visit the Victor Exhibit of X-Ray and Electro Medical apparatus. Again I got to thinking about an equipment all my own. The high quality of materials and fine workmanship evident in the Victor apparatus impressed me very favorably. Just before leaving, Dr. Voolayvoo and myself were rewarded with a pleasant little surprise, especially prepared for Victor visitors. I also asked them to send me a catalog.

BACK, BACK TO BALTIMORE

"Ah, here is the Hynson, Westcott & Dunning exhibit," said my colleague as we started on. "We must see their products, particularly the new germicide Mercurochrome-220 soluble which seems so promising and their Benzyl Benzoate, the non-narcotic antispasmodic." Time was well spent, and I received some valuable information.

"What is this?" I asked, as I saw some steel wafer-like objects lying on a table.

"Those are detachable blades for the Bard-Parker Knife, the safety razor idea applied to the operating knife," said Dr. Voolayvoo. We stopped and the idea seemed so sensible that I ordered a set of the knives and blades, yet wondered why someone hadn't thought of it long ago.

"Do you know," asked Dr. Voolayvoo, "that the Radium Company of Colorado is now producing over one thousand milligrams of radium element per month? Here is their exhibit." The representative showed us various applicators of the latest and most approved types, and explained that the company has recently established service stations in several cities. Time well spent.

In Spaces 27 and 28 was the Squibb Exhibit. It seemed as if they were prepared to furnish any drug, chemical or biologic the physician might need. Their demonstration of the blood clotting powers of Thromboplastin impressed me in particular. "That's something I don't want to forget," said I to my companion, and asked the representative to let me have a sample and descriptive literature.

HORLICK'S THE ORIGINAL

"Ah, here are our old friends, the Horlick's Malted Milk Company," said my colleague as we approached Booths 39

and 40. This exhibit showed "Horlick's Malted Milk" in powder and tablet form; also, Horlick's Food and Horlick's Diastoid. Representatives were busy distributing literature and answering inquiries concerning the various uses of these well known products.

Just then a thought flashed into my mind, and almost convulsively I grasped at my coat pocket.

"What is it, my friend? What is it?" asked my guide somewhat excitedly. "This is it," said I, drawing forth a post card written to my wife on arrival at New Orleans, but still unmailed.

"Ah, that is easily taken care of," said Voolayvoo, "right over here is the Convention post office where your belated missive can be dispatched immediately." That done, we turned to the Oxford University Press exhibit. This had an educational feature in its display of old and rare bibles, religious books and ancient works on medicine. But to me their most interesting and practical features were the famous "Oxford Loose-Leaf Medicine" and the "Oxford Loose-Leaf Surgery." Dozens of standard as well as new works were there, too.

"Sh—sh—", I heard in a nearby booth.

"Ah, that reminds me, we must see De Vilbiss Atomers demonstrated," said Dr. Voolayvoo. "What is an Atomer?" I asked. "An Atomer," answered my colleague, "is a De Vilbiss spray." After seeing these atomizing devices demonstrated, I could readily understand why they merit a name all their own—Atomers.

Next door to the Atomers was Blakiston's book exhibit. I liked the atmosphere and spirit of this exhibit. Their representative made me feel perfectly at home, and I found that we had quite a bit in common. Some of the new books he told me about were quite closely related to my everyday problems.

HOW HEYDEN DOES IT

"Ah, here, my friend, is something 'instructive,'" said Dr. Voolayvoo, as he noticed the Heyden Chemical display of frames showing the products entering into the manufacture of well known medicinal chemicals such as Salicylic acid, Salol, etc. We studied with great interest this part of the exhibit as well as the display of fine chemicals for medicinal and technical use.

Across the aisle was a great showing of instruments by V. Mueller & Co., for general surgery and for specialists

in the different branches such as eye, ear, nose and throat; genito-urinary and obstetrics. Mr. Mueller was giving a most interesting explanation of some new instruments discovered in use abroad on a recent trip by a member of the firm.

Adjoining was another instrument exhibit—that of F. A. Hardy & Company. This was certainly an interesting spot for the Eye, Ear, Nose and Throat surgeons. Mr. Wilhelm, Mr. Frenzel and Mr. Rooney were busy indeed, but not too busy to be courteous.

In the next space we found out some new facts about Mellins Food. As we left, Dr. Voolayvoo said, "How fair and how reasonable are those Mellins people. They present the facts about their preparation and without unduly urging their side of the question, leave the physician to form his own opinion relative to the usefulness of Mellins Food in infant feeding. That is fine, fine indeed."

"But come, we have not yet examined these books in the William Wood & Company exhibit," my conductor said. This proved to be a delightful half hour, for there we found a complete line of medical and surgical books, including the latest works on Medicine, Surgery, Industrial Hygiene, Tropical Medicine, War Repair Work, etc.

Nearby was a demonstration of a little device that interested me keenly—the De Lyte Surgeon. Voolayvoo told me that its manufacturers, the Weder Mfg. Co., had exhibited each year for the last five years and that conventionists always seemed to appreciate greatly the opportunity to see this splendid little contrivance for diagnostic work.

"Do you know Mr. Maltbie?" asked Voolayvoo, as we turned about. "I think not," I answered, and he took me to the Maltbie Company exhibit. Mr. Maltbie was there extending a warm welcome to his old friends, and making lots of new ones. I became much interested in Calcreose

THE A.M.A. PEOPLE CERTAINLY HAVE
THINGS WELL ARRANGED HERE.
BUT THIS LOCATION DOESN'T LOOK
AS GOOD AS ON PAPER, AND THE SPACE
IS FULLY TWO INCHES LONGER THAN
I PAID FOR—
I MUST
SEE
BRAUN.



because it permits a very heavy creosote medication but is free from the characteristic nauseating effects. "I prescribe it wherever creosote is indicated," said my colleague.

DOWN WHERE THE WELCH'S FLOWED

"Ah, mon ami, voila," exclaimed Dr. Voolayvoo, as he looked across the aisle, "here it is at last."

I looked up, and right before us was the Welch Grape Juice Booth, with lots of Welch's on tap. "I will tell the world that that is one fine drink," said Voolayvoo, as he imbibed. "It refreshes us here in full health and strength; think how pleasing it must also be to the sick or convalescent." Grapelade, a pure grape spread, seemed to be another Welch "comer."

"Hello, what have we here?" I asked as my eye fell upon a display of baby clothing.

"That, my friend, is the Vanta line of garments for infants," said Voolayvoo. "You wonder that they are exhibited here? Do you not realize that we medical men can be of great assistance to mothers by showing them the better way to

dress their babies? The Earnshaw Knitting Company have developed unique and original ideas in infant dressing that physicians should know about. With their Vanta garments, the baby is dressed from top to toe without one single pin or button, or once turning him over." Voolayvoo was right. I was glad indeed to have Mr. Earnshaw tell me he would send me a sample Vanta Abdominal Binder.

EMANATIONS OF RADIUM FACTS

Next to this booth was the Radium Chemical Company's exhibit. They were displaying new applicators, screens and other paraphernalia for therapeutic application of radium. But the most interesting thing to me was the fifteen-minute talk I had with a member of the company's technical staff. After all, radium isn't such a mysterious subject, and with the service of this company, its use by physicians is greatly simplified and facilitated.

Occupying Spaces 68, 69, 70 and 71 was the A. S. Aloe Company exhibit. With the liberal terms this firm offers, there really is no reason why any doctor should deny himself the usefulness of any desirable instrument, apparatus or piece of equipment. Aloe will furnish it on easy rental purchase plan.

In the adjoining spaces was another St. Louis exhibitor, the C. V. Mosby Company, with a complete line of medical, surgical and nursing publications. I had already seen a good many new books, but Bartlett's "After Treatment," Hertzler's "Peritoneum," Hazen's "Syphilis," and Warfield's "Arteriosclerosis and Hypertension" were too attractive and interesting to pass up. So we did ourselves full justice by taking plenty of time for the Mosby book exhibit.

IN A TENT, BUT NO SIDE SHOW

"Suppose we step out and smoke a bit," I suggested at this point. "Bonne idée," agreed my guide. Coming back toward the building, we noticed a tent pitched on the lawn. In it was the exhibit of the Abbott Laboratories. We were glad indeed to visit this exhibit. They were showing motion pictures every hour, demonstrating the clinical uses of their Dichloramine-T, Cholestyrene-Parresine, the wax dressing for burns, and Parresined Lace Mesh Dressing. After an hour here we stepped back into the exhibit building.

BOONS FOR BABIES

Entering by a different door, we saw the exhibit of the Dry Milk Company in Space 76. "Do you know," said Dr. Voolayvoo, "that dry milk has become quite a factor in the feeding of infants and invalids?" We stopped, examined the preparation and received some very interesting information. A striking demonstration was that showing the curd of dry milk in comparison with that of liquid milk. Sterling Brand Milk Sugar was also on display here.

"And right here," said Voolayvoo, "is Dennon's Food, the whole wheat milk modifier. It has been on the market for about fifteen years now, and has won a well merited place in infant feeding. You must see this exhibit." The Dennon's booth was modest in its decorations, but Dr. Voolayvoo and

I both carried away a neat souvenir gift as we left, and a good impression of the "whole wheat milk modifier."

Turning the corner, we noticed in space number 77 an interesting display of Radium Applicators and Radium Needles by the W. L. Cummings Chemical Company. Special features here were the new and approved radium applicators for treatment of uterine and bladder conditions.

Adjoining this booth was an exhibit of the Dr. Beachler Standard Sphygmomanometer by the Reliable and Efficient Mfg. Co. This is a mercurial instrument and is so simple, so easy to operate, and is so convenient that I ordered one. It is small and compact enough to carry in one's pocket or bag.

WHERE DOCTORS MEET DOCTORS

"By the way, are you familiar with the Calco pharmaceutical products?" asked Voolayvoo. "This company has been very well received by the profession." Drs. F. Elbert Davis, B. A. Oliver and J. H. Seibert were in charge, and we listened with interest to the facts they presented about Cinchophen, Albutannin, Acetannin, Chloramine, Dichloramine-T, and other Calco products.

Halting me at the Marshalltown Laboratories booth, Dr. Voolayvoo exclaimed, "Ah, here is something fine—a transparent, flexible, waterproof tissue that will not adhere to a wound." I took down the name "Cellosilk" and noted, too, that it comes in an impervious form, and in a perforated form for dressing wounds requiring air and drainage.

FIRST AID FOR THE NEO-NATI

"Say, here is something we must not pass up," said I as I glimpsed a Lungmotor demonstration. We stayed here for some time, and I found out, somewhat to my surprise, that over 6,000 Lungmotors are now in service in hospitals, municipalities, and industrial plants. "Voila la petite," exclaimed Voolayvoo, pointing to the New-Born Infant Lungmotor. "That is a device that every obstetrician should have as a necessary part of his equipment," he added. I remembered a bad case of asphyxia-neonatorum that I had recently had, and lest I should forget, took with me a descriptive circular.

Next, we stopped at the booth of the Foregger Company, and saw a demonstration of the No. 66 "Gwathmey" anesthesia outfit. They were showing some of the very latest developments in anesthesia appliances and our time here was well spent.

Over at the Buzzell-Flanders Company booth, we found out some new things about sutures and ligatures. For years this firm has prepared all of Dr. Henry O. Marcy's Kangaroo Tendon under his direct supervision, and I was glad indeed to see this tendon and have its advantages told me. They are also headquarters for surgeons' needles and hypodermic needles. I'm going to keep them in mind.

THE X-RAY IDEA PENETRATES DEEPER

At the Southworth Company's exhibit, my mind again reverted to the thought of an X-Ray machine all my own, for here were some authoritative and practical books on roentgenology, "X-Ray Examination of the Alimentary Tract," by Dr. James T. Case; and "X-Ray Examination of the Chest for Pulmonary Tuberculosis," by Dr. Kennon Dunham. A number of other helpful and instructive books were displayed, among them being "Pediatrics" by Dunn, and "Rational Therapy" by Lerch.

MEETING THE SOUTHERN EXHIBITORS

"Now let us step in here and see a real New Orleans Exhibit," said Voolayvoo. He pointed out the booth of the McDermott Surgical Instrument Co. Being at home, this firm was able to have one of the most complete exhibits at the meeting. There were surgical instruments, the most modern makes of operating tables, hospital furniture and also specialties such as the Cave-McDermott Ether Outfits, Lynch Suspension Outfits and Matas Jaw Splints. A full force of representatives were on hand, and with characteristic Southern courtesy and hospitality took great pains to see that we got the most out of their exhibit.

Down the aisle, in Booth 107, we came across another interesting exhibit of surgical instruments. This was by Lawrence Everhart of Atlanta, Ga. His Pacquelin Cautery and American made Killman Dilator seemed to be very popu-

WHADDYE KNOW ABOUT SQUIBB'S
THE WHOLE SHOW AT THAT!!
THERE'S AT LEAST ONE OTHER
VERY IMPORTANT ACT RIGHT
HERE IN
SPACE
NUMBER
UMPSTEEN!



WHAT'S THAT?
EXHIBITS OPENED?
--AND HERE'S A DOCTOR
MAKING STRAIGHT
AT ME!



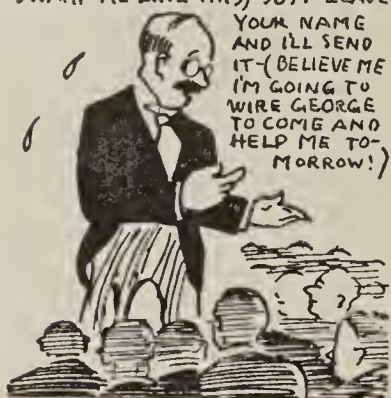
lar, and well they might be, for he was selling them at the popular price of \$35.00 each.

"I take it that you are interested in matters pertaining to hospital work, yes? Then we must step back here to Space 86 and talk with Mr. Crain of 'Hospital Management,'" said my guide. The suggestion was good, and we found the Crain Publishing Company were performing a real service to Conventionists by showing them how to keep better posted on hospital matters. I was presented with a copy of the April issue of "Hospital Management," and found it so good that I subscribed for a year before leaving.

TO KEEP AMERICANS DRY

"Sapristi, what is the gentleman doing?" exclaimed my friend Voolayvoo, pointing to the booth of the Waterproof Fabric Company. We stopped and watched. Here was a

YES, DOCTOR, (HOLY SMOKES WHAT A CROWD) THIS IS OUR LATEST MODEL—(I DIDN'T THINK THEY'D SWAMP ME LIKE THIS)—JUST LEAVE



pan of water boiling. Sagging into it was a piece of thin, white fabric. The gentleman struck a match, laid it burning on the fabric, and much to our surprise, it continued to burn quite undisturbed by the boiling water beneath. The fabric is called Sani-Dri, and I found out that surgeons' aprons made of it are available.

Adjoining this booth was the Pulvula Chemical Company's exhibit. This was very attractive and the unique demonstrations were commanding the interest and attention of many of my colleagues. No wonder, the

way those medicated powder ointments resist moisture was indeed convincing. Before leaving, I jotted down in my note book "Dolomol Dry Dressing" and "Pulvula Powder."

Just at the doorway to the next room, we found the exhibit of D. Appleton & Company. They were showing the new medical books of this season and last year as well as new revisions of many of the standard editions now famous throughout the world. A novel and interesting feature of their display was an historical exhibit presenting manuscripts, rare first editions, autographed letters, etc. Really, it does one good to get into the spirit of these great publishing houses by learning something of their history.

THAT LOOSE-LEAF IDEA AGAIN

"Ah, here is the Nelson Loose-Leaf Medicine," said my guide, as we stepped into the next room, "a complete system of Living Medicine by Leading Medical Authorities of the world." A representative showed us in a very interesting way the service this system gives the doctor, and how it is kept continually up-to-date by the loose leaf device, and supplemented by abstracts, special articles and by the services of the Research Bureau. I liked it very much.

In the next booth, Space Number 98, the Takamine Laboratory representatives were exhibiting Arsaminol and Neoarsaminol. I was greatly impressed with the great care taken in testing these products. According to regulations, they are tested at the Takamine Laboratories and by the U. S. Public Health Service, and "to make assurance doubly sure", each lot is tested clinically by a recognized authority.

In the next booth were "Anatomik" shoes, displayed in a number of different styles. There were specialties particularly suited to the requirements of the Southern trade. The manufacturers have been very successful in producing "attractive" footwear for prevention and relief of foot troubles. "They have, as it were, sugar coated the pill of wearing orthopedic footwear," commented Dr. Voolayvoo, as we turned to the exhibit of E. Leitz, Inc. Here was a variety of fine apparatus now of Leitz manufacture, but formerly imported. Voolayvoo called my attention especially to the new "Elei" Colorimeter, a modified Duboscq.

THE BOOTH BLANCHE

"Ah, how beautiful, how appropriate," exclaimed Dr. Voolayvoo, as he noticed the Mead Johnson & Company booth—all pure white, decorations, tables, chairs and everything. It seemed particularly fit as a setting for the display of their infant diet materials, which are now so well known by members of the profession. I'm glad I visited the 'white' booth."

"Now," said my guide, "we have not much more time." It was true. For in addition to the exhibits already mentioned we had tarried at the booths of the Boehm Surgical Instrument Co.; had looked over the X-Ray supplies of the George W. Brady Co.; had seen a demonstration of one of the Campbell X-Ray Units; had examined the tissue dressings and bandages of the Dennison Mfg. Co.; had talked with a General Electric representative about their new X-Ray tube; had seen the Jaekh Mfg. Co. compressed air cabinets and the Sanborn Blood Pressure Outfits demonstrated; had purchased some iridio-platinum needles from Mr. Wilson of Wilson & Wilson; had looked over the Practical Medical Series of the Year Book Publishers; and had carefully studied the anatomy and physiology of a Sealy mattress. And every exhibit had netted us some new ideas.

"Yes it has been one big day," said Voolayvoo, "but we must see the Sorensen Exhibit here in Spaces 102-103." Representatives were showing the different models of Sorensen Tankless Air Compressors. "Are they not a great improvement and convenience?" asked my friend. "Indeed so," I replied and asked the representative to send me literature. Another interesting feature here was a Specialist's chair, this being its first appearance on the market.

MEASURED ANESTHESIA—WHY NOT?

"Here, too, my friend, you must see the famous Connell Gas Oxygen Apparatus—the machine with the meters," said Voolayvoo, pointing to the Scientific Apparatus Company booth. "Meters," I said, "good idea, charge 'em so much per thousand."

"Ah, no, my friend, you are facetious," rejoined Dr. Voolayvoo, "and this is a serious matter. We measure with great exactitude our dosages of liquids, solids or powders—why not of Nitrous Oxide, Oxygen or Ether?" After seeing the machine demonstrated and noting the ease with which one may keep tab on the amount of gas being delivered, I felt like apologizing to my good colleague for my facetious remark. He was looking at his watch.

THOROLY CONVINCED BY "THORO"

"Just one thing before we go," he said, "over here is a treat I have reserved for you until the last." He led me to the exhibit of the Thoro Corporation. I understood. This was Thoro—the new, hygienic skin cleanser that I knew so many physicians, dentists and other particular people are now using. "See the handsome white enamel holder, and here is the powder itself," said Voolayvoo, "so pure and cleanly." In the adjoining washroom I had my first "Thoro" washup, but not my last, I assure you. For on the way out, I ordered two Thoro Holders, and a supply of Thoro Powder for my office and home.

We started toward the elevator. A great crowd was there. I heard the bell ringing at regular intervals, buzz—buzz—buzz, it continued on and on. I thought it strange to ring an elevator bell like that, I became confused. Someone punched me in the ribs—then another punch—and all the time that confounded bell buzzing—I felt strange—"Voolayvoo, Voolayvoo, where are you," I called—another unmerciful punch in the ribs and I jumped violently.

"—for heaven's sake," a familiar feminine voice was saying, "why don't you go down and answer that midnight call? That phone's been ringing for the last five minutes."

"Yes, my dear," I answered, composing my variegated emotions as best I could, "it's surely 'fierce' to be called out like this, but after all, being a doctor has some compensations, at least."



The End of a Perfect Day.

The above dream is guaranteed to be correct in its details, if advance information regarding the New Orleans exhibits is to be depended on. Not all firms were able to supply such information, but it can be taken for granted that every exhibit will be worthy of the conventionist's close and careful study.

WILL C. BRAUN,
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LETHARGIC ENCEPHALITIS

HISTORY, PATHOLOGIC AND CLINICAL FEATURES, AND
EPIDEMIOLOGY IN BRIEF*

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NEW YORK

It is of more than ordinary interest that within the last dozen years at least two epidemic diseases, affecting chiefly the central nervous system, have prevailed widely in Europe and America. The first is poliomyelitis, which since 1907 has passed through several phases in the United States and culminated in the outbreak of unparalleled severity, centering in New York State, in 1916. The second is lethargic encephalitis, apparently only recently introduced in and already widely distributed through this country. It is highly desirable that the main facts known about the latter disease should be given publicity; and it may well be that the experience, often of tragic nature, gained with poliomyelitis, may serve us in dealing more effectively with the encephalitis peril. Hence, by way of introduction, I shall sketch the recent history of poliomyelitis.

POLIOMYELITIS

The occurrence of poliomyelitis in America and generally in Europe beginning in 1907 followed, it now appears, the severe epidemics of Norway and Sweden, which reached a first climax in 1905. Indeed, poliomyelitis became so widespread after 1905 that it may be regarded as having become pandemic. Besides Europe and the United States, South America, Australasia and the far eastern countries all were involved. Poliomyelitis, it is true, had been mildly epidemic in the United States before 1907; but the most severe of the earlier outbreaks were inconspicuous as compared with the later ones, both as regards the number of persons affected and the territory invaded. Thus, the severe Vermont epidemic of 1894 included 130 cases; and it is worth noting that no extension into distant territory followed in its wake.

It is customary to ascribe to Wickman, who studied the Swedish epidemic of 1905, and gave to the world in 1907 his remarkable book on epidemic poliomyelitis,¹ the first account of the so-called abortive cases of poliomyelitis. But Caverly, who studied the Vermont outbreak,² clearly described cases which did not go on to frank paralysis, but terminated in prompt recovery after symptoms which seemed to presage the onset of paralysis. As these "imperfect" or nonparalytic

instances arose along with the frankly paralytic cases, it seemed to Caverly that they belonged in the same category with the latter. This conception is now abundantly justified. And it is due to Wickman that the abortive type of cases of epidemic poliomyelitis is so widely recognized. The epidemiologic significance of the abortive cases is considerable, since many are ambulatory and most are invalided for a few days at most; they thus furnish a ready means of distributing freely the inciting microbic agent or virus of poliomyelitis in their surroundings. From the public health point of view, the abortive and ambulatory cases of poliomyelitis are more dangerous than the frankly paralytic, since by the very nature of the circumstances the latter are restricted in their contact with healthy persons.

We may think that the forerunners of these epidemics of poliomyelitis were imported into the United States about 1906 or 1907; that the cases of the disease or carriers of the virus first had merely local distribution, but that gradually the conditions favoring a wider spread of the disease became more extensively developed; that thus the more numerous and severer outbreaks arose; until finally, conditions in certain localities having become highly favorable, the terrific explosion with its thousands of paralyzed patients occurred in 1916, since which time the disease, while still present, has reverted to a relatively quiescent state.

The medical profession in general in the United States in 1907 was not informed and ready to deal with the epidemic of poliomyelitis. Practically none of the profession had had previous experience with the disease except in its rare sporadic form, which at first seemed improbably connected etiologically with the epidemic affection. Few physicians knew of the succession of outbreaks, small and large, that for many years had been going on in Norway and Sweden. When, therefore, the epidemic appeared in the United States, there was inevitable confusion of diagnosis, lack of understanding of the infectious nature of the disease and the degree of its communicability, uncertainty as to the public health policy to be pursued, and, finally, in places an undue harshness in the endeavor to curtail its ravages.

Gradually a deeper knowledge of the disease by the profession at large has removed many of these disabilities, and a wider understanding of its atypical forms is rendering feasible the early and more complete institution of those protective public health measures with which hope of better control of epidemics is inseparably connected.

LETHARGIC ENCEPHALITIS—HISTORICAL

With this introduction, I shall now consider certain historical points regarding lethargic encephalitis. It

* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Wickman, I.: Beiträge zur Kenntnis der Heine-Medinschen Krankheit, Berlin, 1907.

2. Caverly, C. S.: Med. Rec. 46: 673, 1894.

appears that the first cases of that disease recognized in the United States occurred in the winter of 1918-1919. In contradistinction to epidemic poliomyelitis, there is no reason to suppose that this epidemic affection of the central nervous system ever before existed in America. This point is an important one. At present the disease seems to be widely distributed, as cases have been reported from many states.

It is possible to trace the cases of lethargic, or epidemic encephalitis, now arising in this country, to an outbreak which occurred in Vienna and neighboring parts of Austria in the winter of 1916.³ Because of war conditions, knowledge of this unusual disease did not at once reach western Europe and the United States; but nevertheless cases of the disease occurred in England and France in the early months of 1918, and in America about one year later.

Both in Austria and in England, in which countries the first cases were observed, respectively, in eastern and western Europe, the disease was first mistakenly attributed to food intoxications. In Austria the early cases were ascribed to sausage poisoning, in England to botulism arising from various foods.⁴

This error is not perhaps as remarkable as might at first sight appear. In the first place, both countries were laboring under unprecedented conditions of food shortage, Austria because of the blockade, England because of the submarine. Moreover, because of this shortage, preserved foods were employed on a scale never before equaled, and, of course, waste and refuse were reduced to a minimum. Furthermore, an early symptom of this encephalitis is third nerve paralysis—giving rise to diplopia, ptosis, etc.—which happens also to be an early symptom in certain forms of food poisoning and notably in botulism.

Ultimately, in both countries the notion of food origin became untenable, and the disease was recognized as arising independently of diet and other usual conditions of life, and came to be viewed as probably of microbic origin and of communicable nature.

PATHOLOGIC

The first fatal cases, which occurred in Vienna, supplied on histologic study a physical basis for the symptoms observed during life; and the first English and French cases similarly examined microscopically showed lesions identical with those described for the Austrian cases. In due time the anatomic study of cases arising in the United States and still other countries showed close agreement with the others, and now a histologic basis of the pathology of the disease, of remarkable concordance, has been provided. On this basis we may now regard lethargic encephalitis as representing a definite pathologic as well as clinical complex, and to consider it as a distinct disease.

The histologic changes or lesions of lethargic encephalitis may be both extensive and profound. Those so far described as confined to the central nervous system affect particularly the brain and especially the gray matter at the base of that organ. While, indeed, any part of the gray matter may be involved, and lesions are found in the cortex and in the cerebellum, the structures particularly affected are those about the third ventricle, the aqueduct of Sylvius, the lateral ventricle and optic thalamus, and the pons and medulla. The spinal cord is variably involved. In

general, it may be stated that the severity of the cerebral lesions diminishes from before backward; the upper or cervical cord often shows changes; but it is still to be determined how often and to what extent the cord as a whole is affected.

The lesions themselves consist of cellular aggregations about the blood vessels, cellular infiltrations in the nerve tissues themselves, small, often microscopic hemorrhages, and an outpouring of plasma or lymph into the tissue interstices (edema). The cellular accumulations and invasions are chiefly mononuclear in nature (lymphocytes, plasma cells, polyblasts); polymorphonuclear cells are also encountered, but are relatively inconspicuous. The lesions themselves occur in nodular and in diffuse forms; and those of the tissues are at times clearly associated with the vascular affections and at other times are so extensive as not to be brought into relation with particular vascular involvements. The paralyses of the ocular, facial and other muscles which sometimes occur arise, with rare exceptions, from the cellular and other invasions of the nuclei of the corresponding nerves.

CLINICAL

The clinical phenomena or symptoms of lethargic encephalitis are referable to the lesions of the central nervous organs or the pathologic process, as sketched. It is perhaps too early in the study of the disease to set up hard and fast clinical varieties or types. However, attempts at classification have already been made. One of the most comprehensive is that of MacNalty,⁵ which is reproduced here, as it is suggestive and may prove useful in practice. MacNalty distinguishes six groups of cases: (1) cases with general symptoms and without localizing signs; (2) cases with third nerve paralysis and general disturbance in the function of the central nervous system; (3) cases with facial paralysis and general disturbance in the function of the central nervous system; (4) cases with spinal manifestations and general disturbance in the function of the central nervous system; (5) cases with polyneuritic manifestations and general disturbance in the function of the central nervous system, and (6) cases with mild or transient manifestations (so-called "abortive" cases). To these should be added cases of paralysis of other motor cranial nerves than the third and fifth, such as those of deglutition and respiration.

Probably there is an incubation and prodromal period which precedes the onset of the striking subjective and objective symptoms of the disease; but thus far these have not been defined. Hence the so-called onset of the disease is usually described as sudden or acute. The latter is, indeed, so striking that the patient is able often to tell the precise hour of a particular day on which he fell ill. Actually the striking symptoms often develop more slowly than in poliomyelitis.

The initial symptoms are described as chills, lassitude and general malaise, headache and general pains, nausea and anorexia, associated often with the common symptoms of upper respiratory catarrhal affections. Fever is an irregular manifestation. It may be present at onset or may appear only later. The temperature range tends not to be high—from 101 to 102—but it sometimes swings to 103 or 104. As the symptoms develop there arise lethargy or drowsiness, vertigo, tinnitus, muscular weakness, blurred or misty vision, diplopia, photophobia, tremors and twitchings, ataxia, delirium, irritability, restlessness, mental depression and other

3. Von Economo, C.: *Die Encephalitis Lethargica*, Vienna, 1918.

4. Report of an Enquiry into an Obscure Disease, *Encephalitis Lethargica*, Report to the Local Government Board, No. 121, London, 1918.

5. MacNalty, A. S. (Footnote 4) p. 12.

alterations, difficulty in articulation and in swallowing, stiffness of neck and spasticity of other muscles, sweating, hiccup, etc. Among the earliest symptoms to arrest the attention of the patient and the physician are diplopia and ptosis with varying degrees of lethargy. But still other paralyses (e. g., facial) may appear, and the lethargy may arise independently of all localizing nervous signs.

The outstanding feature of the disease is the lethargy, which is progressive in character and present in the great majority of cases (80 per cent.?). It may appear suddenly, but usually is gradual in onset. The patient becomes apathetic and dull, appears dazed or stupid, the hours of sleep become prolonged, and he is hard to wake in the morning. Moreover, he may fall asleep at odd hours—while engaged at work or at meal-time. The lethargy may deepen into stupor or even into coma. Its duration is variable—a week, a month or even longer—up to four months. Even after long periods, recovery may still follow. During the lethargy, there may be lack of facial expression (masklike features). The usual state is one suggesting profound sleep, from which the patient can be aroused by loud speaking, prodding, etc., to partake of food or answer questions. But cases in which marked restlessness and even mania have been present followed by lethargy have been noted.

Symptoms referable to irritations of the meninges appear. Usually they are slight, and while sometimes arousing suspicion of acute meningitis, that condition is excluded by lumbar puncture and examination of the cerebrospinal fluid. The fluid tends to be under somewhat increased pressure, but clear. The number of cells is slightly increased (very rarely 100 per cubic millimeter), and the globulin content little and sometimes not at all excessive. The cells, which range usually around 10 to 20 per cubic millimeter, consist partly of mononuclear and partly of polymorphonuclear leukocytes. In addition, the important point of the rare presence of Kernig's sign should be mentioned.

The occurrence of paralyses of the face muscles has been mentioned. Paralysis of the extremities is rare: wrist drop has been noted in at least one instance. But a far more common symptom is rigidity or spasticity, chiefly of the extremities, which in a few cases has been observed to extend to the spinal and even the facial muscles, making a picture suggestive of paralysis agitans. This spasticity of the extremities is ascribable to involvement in the encephalitic process of the lenticular nucleus and the corpus striatum.

The duration of the stupor is very variable; it may last a few days, for weeks or even for months, and recovery still take place. The return to clear mentality is usually gradual; muscular power also tends to return slowly, and general convalescence tends to be prolonged. In paralytic examples of the disease, rapid, complete or partial clearing of the palsies has been noted.

The number of cases of undoubted lethargic encephalitis thus far reported is too small to indicate the age periods of greatest incidence. For the present it may be stated that the disease occurs at all ages, namely, from a few months to advanced years (over 70 years). Likewise, it appears as if the two sexes were about equally attacked.

The fatalities reported range from 20 to 35 or 40 per cent. Probably the higher mortalities refer to groups of the severer cases of the disease. Since knowledge of the disease is still very restricted and

diagnosis still in its beginnings, probably many cases of lighter affection are overlooked or given other names and interpretations, thus making it impossible at present to arrive at an accurate estimation of the prognosis and mortality. At best, however, the disease is to be regarded as serious, whether from the point of view of long duration from onset to restoration to health, or of fatality. The chief immediate causes of death reported have been intercurrent pneumonia and paralysis of the respiratory center in the medulla.

Present indications are that the degree of communicability of lethargic encephalitis or susceptibility to the disease is low, possibly equaling that of epidemic poliomyelitis as observed in ordinary times. The seasonal incidence seems to be midwinter, in that respect resembling epidemic meningitis and differing widely from epidemic poliomyelitis, which prevails usually in midsummer and early autumn.

Explanations of the lethargic state have been offered. A toxic origin is, of course, possible. It seems more likely, however, in view of the nature and distribution of the lesions, that its source is rather a mechanical one. It is known that the sensory stimuli from the special and other senses pass by way of the thalamus to the cerebral cortex.⁶ Since, therefore, the thalamus is so commonly the seat of the cellular infiltrative lesions described, it would appear that the stimuli are interrupted in that organ on the way to the cortex, whence a kind of sleep supervenes. The obstruction to the stimuli is not absolute, since the patient can be aroused by increasing their intensity (as by loud speaking, prodding, etc.)

EPIDEMIOLOGIC

It is now sufficiently obvious why the popular name of "sleeping sickness" has been applied to this malady. The disease is, of course, wholly distinct from African sleeping sickness, which is a trypanosomal infection carried from person to person by means of an insect vector—the tsetse fly.

When an apparently new disease arises, it is always important to inquire whether the particular set of symptoms that are taken to characterize it has been observed and recorded before.

In the present instance there are two significant records which may easily refer to a similar and possibly identical disease. The first one dates from 1712 and refers to an outbreak of so-called sleeping sickness centering about Tübingen in Germany. The second record dates from 1890 and deals with a rather puzzling malady called *nona*, which is described rather in the lay than the medical literature of the time and seems to have prevailed in the territory bounded by Austria, Italy and Switzerland. In respect to neither instance, however, do the records contain the minuter data which would admit of a certain identification of the disease described with the encephalitic malady we are considering.

One circumstance is, however, significantly suggestive. The location of the 1890 affection "*nona*,"⁷ which was characterized by somnolence, stupor and coma, coincides roughly at least with that of the first cases reported in the present epidemic. The question may, therefore, well be raised whether the endemic home of this epidemic variety of encephalitis may not be that corner of southeastern Europe overlapping the three countries mentioned. If this should prove to be prob-

6. Head, H., and Holmes, G.: *Brain* 34: 102, 1911-1912.

7. The etymology of this term is not known. It has been suggested that it is merely a corruption of the term "coma."

able, the next questions to arise would relate to the circumstances under which the disease slumbered on in ordinary times, and to the conditions that favored a greater activity and a wider spread about the year 1916.

To deal with the first one will require particular and intensive studies carried out with the especial object in view to disclose hidden cases in the region originally affected. An answer can in the meantime be hazarded to the second question. The depressing effects of war, acting by way of hunger, cold, migrations of populations, and general insanitation, might initiate the conditions through which a low endemic might well be converted into a higher epidemic incidence of the disease.

In effect, a similar set of depressing and favoring conditions may be supplied by a highly debilitating and destructive epidemic, such as the periodic waves of pandemic influenza which recur from time to time. In this manner may possibly be explained the coincidence of the Tübingen epidemic of 1712, also called sleeping sickness, and of the "nona" of 1890 with epidemic influenza, just as the wider distribution of the encephalitic malady and the influenza epidemics of 1918 and of 1920 may be similarly associated. In other words, what the depressing circumstances of the war did for Austria-Hungary in 1916, the pandemic of influenza may have done for the rest of the world in 1918 and subsequently, namely, prepare the soil, as it were, for the growth in number of cases and for increase in intensity and capacity for spread of an infectious nervous disease ordinarily narrowly localized and moderately benign.

This relationship of lethargic encephalitis to the epidemic of influenza has, indeed, led to a discussion as to whether the former is not merely a sequel—early or late—attending a certain, if only small number, of cases of epidemic influenza.

Regarded merely chronologically, the question thus presents itself: In 1916, when the first cases of encephalitis appeared or at least were recognized in Austria, the epidemic of influenza which prevailed later, in 1918, had not yet been noted. In the instances of England, France, the United States and some other countries, the epidemic influenza and cases of lethargic encephalitis were more or less coincidental. Since influenza varies so much in degree of severity, it is of little moment to debate whether or not victims of the encephalitis had previously suffered from influenza.

On the other hand, there is no recognized numerical relationship between the extent of influenza and the number of cases arising, or at least identified, of the encephalitis. It is, of course, true that encephalitis has long been recognized as one of the sequels of epidemic influenza. Indeed, in the etiology of encephalitis, influenza occupies a prominent place; but in no other pandemic of influenza has this remarkable association of encephalitis occurred with certainty. Little weight can be given the supposed coincidence of influenza and the "sleeping sickness" of 1712; and it is highly improbable that the semimysterious affection, "nona," which dates from 1890, should have taken its origin from the influenza epidemic in southeastern Europe at that period and the association not have been observed elsewhere in Europe or even in America at the same time as a concomitant of the influenza epidemic, which raged with great intensity in those countries. Moreover, the occasional cases of encephalitis definitely observed to follow attacks of influenza have presented a more hemorrhagic character, and some-

times have been attended by Pfeiffer bacilli in the nervous tissues and meninges, which is not the case in the lethargic disease we are now considering.

Finally, should the reported experimental transmission of the encephalitis to animals be confirmed, a further distinction from the influenzal variety will have been established. Therefore, the outbreak of lethargic encephalitis either antedated (Austria) the pandemic of influenza of 1918, or (in other countries) the two diseases more or less overlapped, that is, although probably quite by accident, they prevailed concurrently. It is desirable, for the time being at least, to regard them as independent diseases.

The history of lethargic encephalitis indicates its infectious and also its communicable nature, but thus far single rather than multiple cases have been observed in family and other intimate groups of persons. However, two cases in a family have very rarely been noted; and in one instance an institutional outbreak has been reported in which among twenty-one inmates of a girls' home twelve cases arose, with five deaths.⁸ Whether more accurate means of diagnosis, through which the nonlocalizing or "abortive" and the frankly paralytic lethargic cases would be more certainly associated and thus lead to a general revision of present views regarding multiple cases, can only be surmised. Obviously, in the interest of knowledge as well as of the prevention of the disease, close attention to this point is desirable.

It is now a matter of great importance to determine the precise nature or etiology of lethargic encephalitis. Many unsuccessful attempts have been made to communicate the disease to monkeys and other animals through the inoculation of nervous tissues showing the particular lesions, in the manner so readily and successfully employed in monkeys for poliomyelitis. This circumstance alone would serve to distinguish this epidemic encephalitis from epidemic poliomyelitis. But in two or three instances, what are stated to be successful transmissions of the disease to animals have been reported.

Von Wiesner⁹ of Vienna inoculated a monkey subdurally with nervous tissue from a fatal case of von Economo's. This animal quickly became severely sick and died in about forty-eight hours. At necropsy a meningo-encephalitis was found, and from the lesions a diplostreptococcus was cultivated. While von Wiesner regarded this experiment as successful, further investigation has indicated that the infection with the bacteria was an accidental and secondary process, and the diplostreptococcus is not etiologically related to lethargic encephalitis.

Loewe, Hirshfeld and Strauss¹⁰ inoculated rabbits and monkeys with filtered extracts of the nasopharynx of cases of the encephalitis and, also, with filtered nasopharyngeal washings, and have induced a meningo-encephalitis in those animals. Apparently they did not succeed in infecting those animals by inoculating the affected nerve tissues themselves. They also believe that they have cultivated a minute organism, resembling the globoid bodies of poliomyelitis, which they think may be the inciting microbic agent of the disease. Discrepancies exist between the positive results of these authors and the many failures of others with similar inoculations which only greater experience can clear up.

8. Forty-Eighth Annual Report of the Local Government Board, 1918-1919, Medical Supplement, London, 1919, p. 76.

9. Von Wiesner, R.: Wien. klin. Wchnschr. **30**: 933, 1917.

10. Loewe, Leo; Hirshfeld, Samuel, and Strauss, Israel: J. Infect. Dis. **25**: 377 (Nov.) 1919.

Finally, McIntosh,⁸ of the London Hospital, announced that a monkey inoculated with the material from the fatal cases in the home for girls, already referred to, presented lethargic symptoms and tremors and died. The brain on examination is said to have shown lesions similar to those found in human cases of lethargic encephalitis.

CONCLUSION

The foregoing account represents, in brief, the present state of our knowledge of the interesting and important disease—lethargic or epidemic encephalitis. Obviously, that knowledge is still very imperfect. It is still too soon to say whether or not we are now at the threshold of the clearing up, by way of animal experiment, of the etiology and mode of communication of this menacing disease, as was accomplished so recently, and also by animal experiment, in the case of poliomyelitis. It is to be sincerely hoped that we are. But at this moment, and while waiting for the ultimate and convincing experimental results, one need entertain no doubt of the infectious and communicable nature of lethargic encephalitis.

The belief that lethargic encephalitis is a communicable disease imposes certain responsibilities on the medical profession to limit its spread. The outstanding obligation is perhaps the close study of suspected cases in order to determine their real nature, meanwhile holding them under such conditions of isolation as is usual with this class of diseases. Then every effort should be made to determine the existence of, and to detect and control the ambulant or abortive cases, having in mind that they may be more significant than the frankly lethargic and paralytic ones from the public health point of view. Since the nasopharyngeal secretions have become suspected of harboring the inciting microbic agent, adequate measures of controlling the distribution of those secretions into the surroundings of patients should be carried out. It is self-evident that the physician should invite the cooperation of pathologist and bacteriologist in attacking the unsolved problems presented by this unusual disease. It is to be hoped, indeed, that the disease may not secure a permanent lodgment in the country; on a wider knowledge of its occurrence and a deeper understanding of its nature, which the studies of the immediate future may yield, much, therefore, may depend.

CHYLOUS ASCITES DUE TO CARCINOMA OF THE STOMACH

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The case here described is considered interesting enough to deserve a brief report.

REPORT OF CASE

History.—B. J. B., white man, farmer, with a negative family history in regard to malignant disease as far as known, with a brother, however, who was insane and a father who was alcoholic, had had measles, mumps and whooping cough early in life, had used alcohol to some extent, and at 16 years of age had suffered from insolation and had been called "queer" afterward. At 42 he had been kicked in the forehead by a colt, after which his peculiarities had gradually become more pronounced until he finally became more or less violent and, Oct. 28, 1907, at the age of 64, was committed as insane to the Traverse City State Hospital. His condition was regarded as a case of dementia praecox of many years' standing.

Physical Examination.—This was essentially negative except for a few hyaline casts in the urine and slight thickening of the radial arteries.

Clinical Course.—In July, 1915, it was observed that the patient, then 72 years of age, was becoming pale and thin, and that his skin was becoming slightly yellow. August 5, the urine showed a trace of glucose and a few casts; the left pupil was greater than the right and reacted to

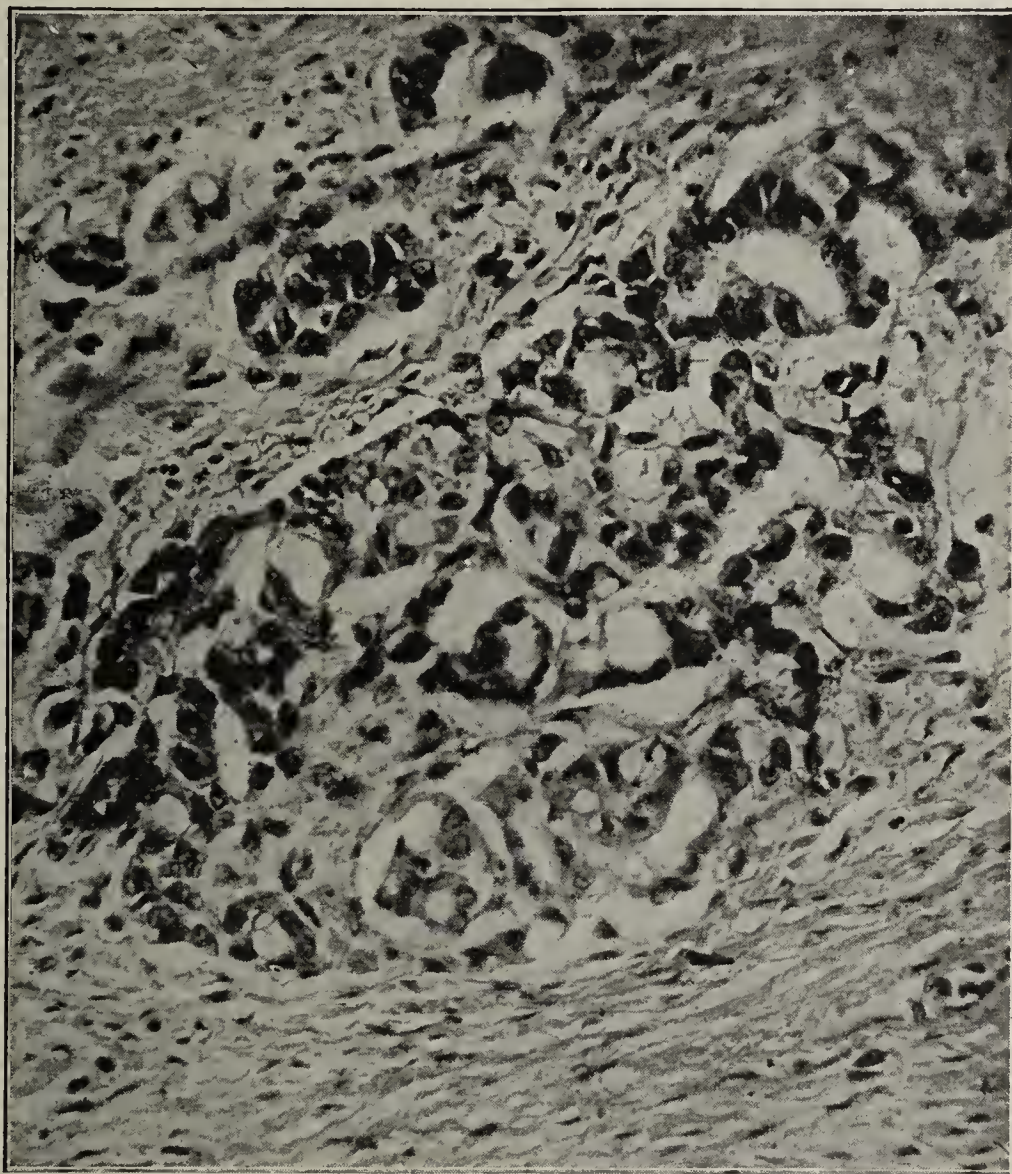


Fig. 1.—Section of stomach under high power: mass of cancer cells infiltrating muscular layers. Photomicrograph by Dr. W. P. Stowe.

light better than the right. The knee jerks were very active and equal. August 6, examination of the blood revealed 65 per cent. hemoglobin and 2,912,000 red cells per cubic millimeter which showed a certain amount of variation in size and shape. August 20, after the patient had been kept in bed and given liquor potassii arsenitis (Fowler's solution), the hemoglobin had increased to 80 per cent. and the red cells to 3,832,000.

In September, the patient began to have trouble with his stomach; he vomited more or less, and at times had difficulty in retaining solid food. The improvement under Fowler's solution did not persist, so its use was discontinued. September 28, examination of the heart was negative; the pulse was 118 and of fair tension. On percussion, the lungs showed dulness. Fine crackling râles were heard in the right supraclavicular space, and there were scattered squeaking râles in the lungs. October 14, the blood showed 60 per cent. hemoglobin and 4,800,000 red cells; and the blood smear showed 82 per cent. of polymorphonuclears, 16 per cent. mononuclears,

1 per cent. eosinophils and 1 per cent. mast cells. There was still considerable variation in the size of the red cells. By December 3, the patient had become more emaciated and still had a yellowish hue. Examination of the chest then revealed a few râles in the apexes and diminished resonance at the right apex. On the left side of the neck just above the clavicular space, five or six firm, nontender glands could be felt and seen; the inguinal glands seemed prominent, probably on account of emaciation. The patient grew progressively worse, continued to have trouble with his stomach, and retained nourishment poorly. No blood was ever observed in the vomitus or in the stools, which were always a normal color. Jan. 24, 1916, there was slight dulness at the base of the right lung with a few scattered râles there. The legs and thighs were tender; the left leg was somewhat edematous. At that time, the blood showed 25 per cent. hemoglobin and 3,116,000 red cells; white count revealed 6,700 cells, with 57 per cent. of polymorphonuclears; the red cells were somewhat irregular in shape, but no nucleated red cells were found. The skin became a deeper yellow after this, and a slight puffiness appeared around the eyes. The patient died, Feb. 9, 1916.

Necropsy Findings.—Two and one-half hours after the death of the patient, Dr. F. C. Mayne and I performed the necropsy. The body was slightly built and showed marked emaciation. The thorax was slightly emphysematous and the abdomen was somewhat distended. There was a small trophic ulcer over the right trochanter and another over the sacrum. The skin was slightly atrophic and yellowish brown. The superficial veins of the abdomen were dilated, more so on the left than on the right. The muscles were small and atrophic. There was only a slight amount of rigor mortis. There was a slight amount of edema in the lower extremities, especially in the left.

The abdominal cavity contained no free gas, but it did contain a milky fluid, evidently chyle. This was not measured, but was estimated to be several hundred cubic centimeters. The stomach was large and distended with a large amount of fluid contents. A small, hard mass could be felt at the pylorus. There were adhesions extending from the gallbladder to the duodenum. The omentum was normal, containing very little fat. The intestine was normal in outside appearance and to palpation. At the pyloric end of the stomach, just inside the sphincter, there was a thickening of the stomach wall over an area about 3 cm. in diameter with a depression in the center and a raised hypertrophic border. The head of the pancreas seemed larger and harder than normal. The liver was rather small, and did not extend down to the costal margin. Scattered over its surface were several raised yellow areas ranging from 2 to 20 mm. in diameter. On section the inside of the liver showed these areas also. At the hilum were a number of enlarged lymph

glands. The mesentery contained only a little fat, but when it was cut, a milky fluid like that in the peritoneal cavity oozed out from dilated lymphatics. There were many enlarged mesenteric lymph glands, especially in the upper part of the abdomen. The kidneys and suprarenals were not especially remarkable in gross appearance. The spleen was about one-third the normal size, hard and lobulated and rather grayish-brown. The appendix was small and slightly adherent to the cecum.

The thorax contained a few hundred cubic centimeters of clear yellowish fluid in the pleural cavities. The thymus was absent. The pericardium was normal, and there was no excess of pericardial fluid. The heart was small and flabby. The heart valves appeared normal. The heart muscle was yellowish red. The right lung was strongly adherent at the apex and side and in the back. There were adhesions at the apex and at the base and front of the left lung. The latter adhesions were so dense that it was necessary to cut

them. There were numerous calcified lymph glands at the hilum of each lung. The aorta showed only a small amount of arteriosclerosis. The thoracic duct was dilated and filled throughout with a milky fluid. There were a number of enlarged glands along the duct in the mediastinum. Just before the duct emptied into the left subclavian vein, it was pressed on by a mass of enlarged supraclavicular lymph glands, evidently causing stasis.

The brain was removed and, after being hardened in toto in formaldehyd, was sent to the state psychopathic hospital at Ann Arbor for examination. The report of Dr. A. M. Barrett was, "Slight leptomenigitis and cystic accumulations over the convexity."

Microscopic Examination.—The mass at the pyloric end of the stomach was found to be scirrhus adenocarcinoma infiltrating the muscle layers. Several portions of the lung

were examined. One portion showed a hemorrhagic infarct with atelectasis about it; another portion showed a purulent exudate in the bronchi with scar tissue around them, some completely thrombosed blood vessels, and some blood vessels with thickened walls; and another showed small metastases consisting of carcinoma cells. Various enlarged lymph glands were examined and found to contain metastases. The yellowish areas in the liver when examined microscopically were found to be metastases. On section, the pancreas showed a certain amount of general atrophy and a number of small areas of recent hemorrhage. Some of these showed also abundant polymorphonuclear leukocytes. There were also, largely in the connective tissue, a few small areas of infiltration with small round cells. The spleen showed a thickened, dense capsule with dense trabeculae, and the walls of its blood vessels were dense and hyaline. There was a hypoplasia of the lymphoid elements. Sections of kidney showed an increased amount of connective tissue in the



Fig. 2.—Section of liver under high power: edge of metastasis with adjacent liver cells, which have been distorted by pressure. Photomicrograph by Dr. W. P. Stowe.

cortex as well as in the medulla. There were a good many casts, the blood vessels were more or less hyalinized, and the glomeruli were somewhat shrunken. The heart showed probably an increase in connective tissue around the blood vessels.

COMMENT

The conditions found at necropsy were not anticipated during life, although carcinoma of the stomach was strongly suspected. The finding of chyle free in the thoracic cavity, or in the abdominal cavity, or in both, is quite uncommon.

Two articles on this subject have appeared in THE JOURNAL; the first, by Outland and Clendening,¹ and the second, by Tuley and Graves.² These articles are recommended to any one especially interested in this subject.

Outland and Clendening reported a case of chylous ascites and chylothorax due to carcinoma of the stomach. They referred to articles by Wallis and Schölberg,³ who had collected reports of 176 cases (including three of their own) of chylous and chyloform ascites. I have not been able to consult these references, but, if I understand it correctly, in sixty of these cases there was also chylothorax. Seventeen of the 176 cases were due to carcinoma of the stomach, and in three of these seventeen, the chylous fluid was found in the thorax as well as in the abdomen. Outland and Clendening collected reports of eleven more cases, of which one was due to malignant cysts in the pelvis and one to Hodgkin's disease. The others are ascribed to trauma, cirrhosis of the liver, appendicitis, nephritis, tuberculous peritonitis and heart and liver diseases.

Tuley and Graves report a case of chylothorax, chylous ascites and lymphosarcoma. They quote Sale⁴ as reviewing forty-two cases. The causes of these cases were given as new growths or tuberculous lymph glands in nine cases, thrombosis of the left subclavian vein, four cases, and secondary growths in the thoracic duct itself, nine cases. Other causes given were perforating lymphangitis, aneurysm of the duct itself, thrombosis of the duct, operation for removal of cervical glands, mitral disease, filariae, and inflammatory thickening of the mesentery.

I have not made a thorough review of the literature, but I have found the following articles since the publication of the two articles to which I have just referred. Lewin⁵ reported a case of chylothorax due to lymphosarcoma of the mesentery with metastases in various glands and in the thoracic duct. A case of traumatic chylothorax was reported by Derganz⁶ in 1915. Pisek⁷ reported a case of chylothorax in an infant aged about 2 months. The milky fluid was found on aspiration, and the infant recovered. Bonorino Udaondo and Castex⁸ reported five cases of milky ascites, some due to cancer of the stomach, and others to tuberculous peritonitis or other chronic processes.

It seems that malignant disease can be given as the cause of this condition in at least 10 per cent. of the cases. Outland and Clendening were unable to find the thoracic duct in their case, and they are inclined to

doubt the reports in which it is said to have been found dilated. In our own case, there was no difficulty in demonstrating the dilated duct.

SUMMARY

In a case of chylous ascites in a man, aged 72, the feature of special interest clinically was the appearance of enlarged glands in the left side of the neck a few weeks before death. Necropsy revealed milky fluid in the abdominal cavity, cancer of the stomach and metastases in the liver, lungs, mediastinal glands and the glands in the left side of the neck. The thoracic duct was dilated. Of the cases which have been reported with chylous fluid either in the thorax or abdominal cavity, or both, at least 10 per cent. have been due to malignant disease.

POLYPOID ADENOMA OF THE
STOMACH

REMOVAL BY GASTROTOMY

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The frequency of cancer of the stomach is so very much greater than that of other gastric tumors that the benign neoplasms of this origin receive little attention in the diagnostic consideration of doubtful cases. Aside from their rarity, the accurate diagnosis of these benign tumors is rarely possible. Textbooks on medicine, and even the special works on diseases of the stomach, as a rule give scant attention to this group of tumors. Perhaps the most interesting neoplasms of this type are the adenomas.

The first undoubted case of adenoma of the stomach was that reported by Cruveilhier,¹ although earlier description of somewhat doubtful cases had been given by Morgagni and Lieutaud. Brissaud's excellent study² was based on the specimen from the case reported by Cruveilhier, which is preserved in the Dupuytren museum. One of the best modern articles on the subject is that of Menetrier.³ Among other excellent contributions are those of Hayem,⁴ Verse,⁵ Michel,⁶ Napp,⁷ Finney and Friedenwald,⁸ and Hauser.⁹

TYPES OF GASTRIC ADENOMA

A number of types of gastric adenoma have been described. Three groups may be recognized:

1. Polypoid adenoma, either single or multiple (*les polyadénomes polypeux*). In this type, the interior of the stomach presents one or more polypoid growths springing from the mucosa. As many as 300 have been reported in one case.

2. The so-called polyadenoma *en nappe* of Menetrier. This is characterized by involvement of large areas of stomach wall, measuring perhaps as much as

1. Outland, J. H., and Clendening, Logan: Chylous Ascites, J. A. M. A. **66**:1833 (June 10) 1916.
2. Tuley, H. E., and Graves, Stuart: Chylothorax, Chylous Ascites and Lymphosarcoma, J. A. M. A. **66**:1844 (June 10) 1916.
3. Wallis, R. L. M., and Schölberg, H. G.: Quart. J. Med. **3**:301, 1909-1910; **4**:153, 1910-1911.
4. Sale, L.: Interstate M. J. **29**:50 (Jan.) 1912.
5. Lewin, P.: Am. J. M. Sc. **152**:71 (July) 1916.
6. Derganz, F.: Wien. klin. Wchnschr. **28**:1320 (Dec. 2) 1915.
7. Pisek, G. R.: Chylothorax in an Infant, J. A. M. A. **69**:310 (July 28) 1917.
8. Bonorino Udaondo, C., and Castex, M. R.: Rev. Assn. méd. argent. **26**:58 (Jan.-Feb.) 1917.

1. Cruveilhier: Traité d'anatomie pathologique, 1849, Tome 2, Livraison 30, p. 2.
2. Brissaud: Arch. gén. de méd. **2**:257, 1885.
3. Menetrier: Arch. f. Physiol., 1888.
4. Hayem: Presse méd. **2**:53, 1897.
5. Verse: Arb. a. d. path. Inst. zu Leipzig, 1908.
6. Michel: Thèse de Montpellier, 1907.
7. Napp: Inaug. Diss., Freiburg, 1900.
8. Finney, J. M. T., and Friedenwald, J.: Am. J. M. Sc. **154**:683 (Nov.) 1917.
9. Hauser: Deutsch. Arch. f. klin. Med. **55**:429, 1895.

10 or 12 cm. in diameter. In this way large plaques are produced, rather than isolated polypoid outgrowths.

3. The adenoma of the Brunner gland type, which was first described by Hayem in 1897. The point of distinction in this variety is that the gland tissue of the tumor, even though the latter be located in the stomach itself, is of the type of the Brunner glands which are found normally in the duodenum. This is the rarest of the three forms.

ETIOLOGY AND COURSE

Little of a definite nature is known concerning the etiology of this disease. It is, however, commonly believed to be most frequently the result of a chronic gastric catarrh. Napp believes that it is especially apt to be associated with the atrophic forms of chronic gastritis. While adenomas of the stomach may apparently remain for years and may cause no serious symptoms, it is generally conceded that they have a strong tendency to adenocarcinomatous degeneration.

CLINICAL SYMPTOMS

The disease is essentially one of advanced life, most of the reported cases having been observed in persons beyond the age of 50.

Perhaps the most extensive studies of the disease have emanated from pathologic institutes and have been based on specimens found at necropsy in patients who have died of other diseases. This is indicative of the infrequency with which the clinical diagnosis is made, for there are no distinctive symptoms. The usual manifestations of a chronic gastritis may be associated with severe epigastric pain, more particularly in the case of pedunculated growths, which may even cause pyloric obstruction. The specimen in the Dupuytren museum is said by Michel to show a polyp 10 cm. long which had partially traversed the pylorus, which it blocked. In the more marked cases of gastric polyposis, the roentgen ray may be of value in diagnosis.

SINGLE POLYPOID ADENOMA

The case which formed the incentive for the present summary was of the type of single polypoid adenoma. The size of tumors of this kind varies between wide limits. The largest one recorded is, no doubt, that of Chaput,¹⁰ which was as large as a fetal head at term. It was pedunculated and its surface showed no ulceration. Although reported as an adenoma, a suspicion is expressed by Hayem and Lion¹¹ that this tumor was really an epithelioma. There seems to be no special site of predilection of these growths, although they are perhaps more common in the pyloric region. Their consistency is rather firm, the cut surface often being dry and at times almost lardaceous.

Microscopically, these tumors are formed chiefly of the overgrown glandular tissue of the gastric mucosa. The glands themselves are commonly of the pyloric type and are lined by cylindric epithelial cells, which are sharply marked off from the basement membrane. The nuclei are placed close to the latter, and goblet cells are numerous. A greater or less degree of cystic distention of the glands is common, and may be so marked as to give a honeycombed appearance to the cut surface of the tumor. The interglandular substance is a dense connective tissue, often showing moderate round-cell and leukocytic infiltration. The glandular tissue shows no tendency, in benign growths, to penetrate beyond the muscularis mucosae, a point emphasized by Napp.

SURGERY

Little need be said concerning the surgery of these growths in the rare instances in which they are discovered, for the surgery involved in their removal is in itself comparatively simple.

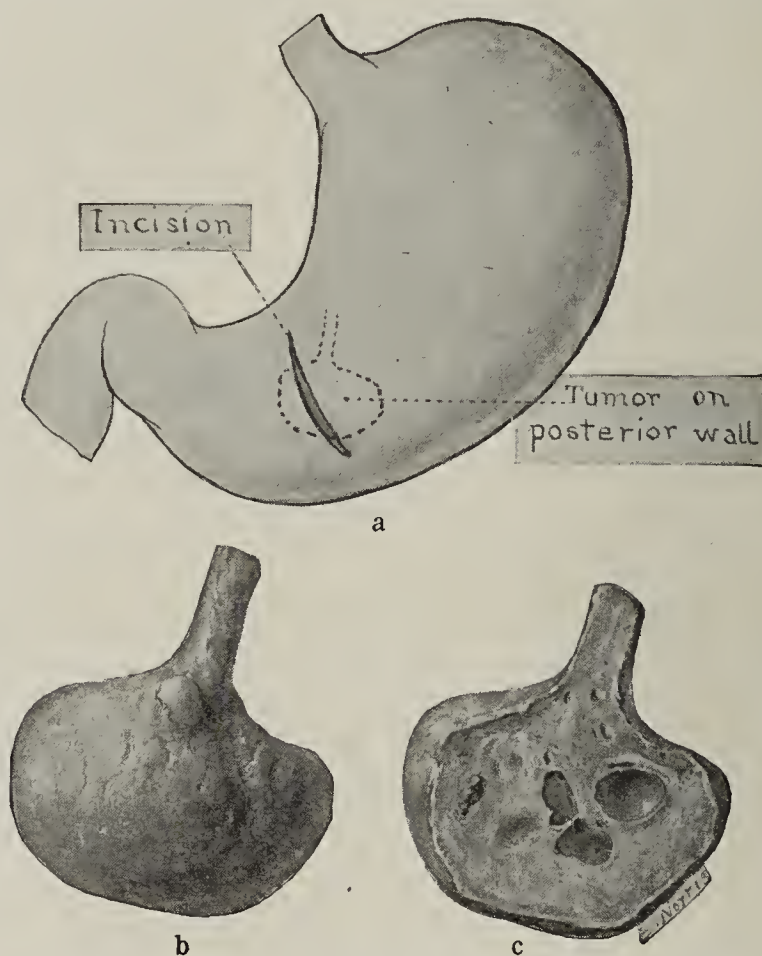
In Chaput's case, already referred to, the large tumor which was found was removed by gastrotomy, as was done in the case of the much smaller growth in my own patient, as is described below. The same procedure was carried out in the case of Gibson¹² and also in that of Blake.¹³ Both of these resembled my own in every way, so far as may be judged from the very brief and incomplete reports made in the course of a discussion at a meeting of the New York Surgical Society. The case of Lange, referred to by Hayem and Lion,¹¹ was one of the *en nappe* type, necessitating partial gastrotomy. These cases were all successful.

REPORT OF CASE

History.—E. B., a married woman, aged 45, seen in consultation with Dr. Benjamin O.

McCleary, August 10, with nothing of significance in her family history, having enjoyed good health up to about four or five years before with the exception of infrequent attacks of tonsillitis, for the past four or five years had suffered with a gnawing pain in the epigastrium, occurring, usually, immediately after eating. There was also a great deal of eructation, but no vomiting.

Seven weeks before I saw her, the patient had been taken with a severe attack of pain in the right hypochondrium, associated with marked tenderness and some rigidity over this region. Morphine was necessary to control this pain, which Dr. McCleary felt was due to a cholecystitis. This attack had lasted for a number of hours and then subsided. Since then, the patient had continued to suffer with stomach symptoms, as noted above. The day that Dr. McCleary and I saw her she had suffered, early in the morning, an attack almost exactly similar to the one just described. The general condition was good, although there was some tendency to prostration. Vomiting had occurred once or twice. The pain over the gallbladder region was described as agonizing,



Polypoid adenoma of the stomach: a, tumor on posterior wall of stomach, and incision for its removal; b, gross appearance of tumor, with pedicle; c, cut surface of growth, showing cystlike gland spaces.

10. Chaput: Bull. Soc. anat. de Paris 70: 534, 1895.

11. Hayem and Lion: Traité de médecine, Brouardel, Gilbert and Thoinot, 1913, p. 413.

12. Gibson, C. L.: Ann. Surg. 45: 130, 1907.

13. Blake, J. A.: Ann. Surg. 45: 130, 1907.

and tenderness was definitely localized over this point. I concurred with Dr. McCleary in the diagnosis of cholecystitis and advised operation.

Operation and Results.—Aug. 14, 1919, the usual right rectus incision was made over the gallbladder. The gallbladder was found to be tightly distended and very thick walled. It did not, however, contain stones. Before the gallbladder was opened, it was considered advisable to explore the stomach and duodenum. There was no induration or other evidence of ulcer in either the pylorus or duodenum. Within the cavity of the stomach, however, some distance from the pylorus, could be felt a hard globular mass, about the size of a small walnut, which could be moved about very freely. Careful palpation revealed what seemed to be a thin, cordlike pedicle. The stomach was opened, as indicated at *a* in the accompanying illustration, and the tumor easily delivered into the incision. It was about 3 cm. in diameter and was attached by a pedicle 2 cm. long and about 0.5 cm. wide to a point on the posterior wall just below the lesser curvature of the stomach, somewhat closer to the pyloric than to the cardiac orifice (*a*). The tumor was removed by ligation of its pedicle and severing with the electrocautery. The gallbladder, being obviously diseased, was drained in the usual manner.

The patient made an uninterrupted recovery and is now enjoying good health.

Pathologic Report.—The tumor was almost globular in shape, measuring about 3 cm. in diameter, the attached pedicle being 2 cm. in length and about 0.5 cm. in diameter. The surface showed a slight tendency to lobulation in places (*b*). For the most part it was quite smooth, although there were several small areas of erosion. The tumor, on being cut into, was found to be quite dense and dry, being apparently made up, for the most part, of connective tissue. The latter, however, was studded with numerous cystlike spaces, evidently dilated glands of varying size. This is well shown at *c*. The gland tissue had no tendency to extend beyond the muscularis mucosae.

Microscopically, the lining epithelium was found to be of the usual columnar type, containing many goblet cells. In many places, however, it was eroded. Beneath the epithelial surface, and especially in the areas of erosion, there was marked injection of the blood vessels, with marked infiltration of leukocytes and small round cells. The gland tissue beneath the surface was arranged rather irregularly. In places the gland acini were rather closely packed, their outline being regular and the lining epithelium being similar to that found on the surface. Between the glands in these areas there was also much inflammatory infiltration. In other parts the glands were enormously dilated, forming cysts of considerable size, the largest being about 1 cm. In no part of the tumor was there any transformation of the epithelium which might suggest malignancy, nor was the gland pattern malignant in type. The tumor was apparently a benign pedunculated adenoma.

26 East Preston Street.

Factors Essential to Recovery from Tuberculosis.—Two things more frequently than any others work against the recovery of persons who have tuberculosis. One is that in so many cases of tuberculosis the true nature of the disease is not recognized while it is in the early stage, when it is much more easily cured than it would be later. The other is that many persons refuse to believe that they have tuberculosis until the evidence is so plain that the diagnosis of the physician is no longer needed.—*Bull. Maine State Dept. of Health*, October, 1919.

POLYDACTYLISM AND THE PHENOMENON OF REGENERATION

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Cases of polydactylism have been recorded since early times. Annandale¹ sees in Chaldean illustrations evidences of cases of supernumerary digits. Illustrations of double hands on each arm may find their origin in genuine cases of polydactylism. Beginning with the seventeenth century on down to the present, more or less authoritative cases multiply the records.

Many of the recorded cases¹ are extremely interesting. Forster sketches a hand with nine fingers and a foot with nine toes. Voight records an instance of thirteen fingers on each hand and twelve toes on each foot, making a total of fifty digits. Saviard, in 1687, reported the case of an infant with forty digits, ten to each member. It is not evident from the reports whether or not, in any of the foregoing, the extra digits constituted well developed organs. Meckel, however, offers a case in which a man possessed twelve fully developed fingers and toes. Scherer records the case

of a girl baby, normally formed, with seven fingers on each hand, all united and bearing clawlike nails. On each foot there was a double hallux and five other digits, some of which were webbed.

HEREDITARY CHARACTER

According to Davenport² polydactyl traits appear to be inherited in nearly typical fashion, as indicated by the pedigree of a family cited by Lucas. Reaumer traces the influence of heredity in the Kelleia family

of Malta through five generations. The trait is especially persistent in consanguineous marriages, illustrated by the family of Foldi in an Arabian tribe. In this stock, all acknowledged offspring possess twenty-four digits. An infant born with the normal number of digits is recognized as a product of adultery and is immediately sacrificed. The inhabitants of the village of Eycaux, France, have similarly perpetuated the anomaly in that the village was isolated by its inaccessible location in a mountainous region.

This anomalous phenomenon is not confined to man alone; apes, dogs, fowls and other lower animals possess it. The reported cloven-hoofed horses of Alexander and Caesar are suggestive cases of this trait.

REPORT OF CASE

History.—An Alabama negro boy, aged nearly 21, who, up to the time of his induction into the service of the army, had been employed as a section hand, attracted the attention of the psychologists at Camp Sherman because of his failure to negotiate successfully the Beta examination (for illiterates). The presence of the supernumerary digits was detected during the progress of a special individual examination.

1. Gould, G. M., and Pyle, W. L.: *Anomalies and Curiosities of Medicine*, Philadelphia, W. B. Saunders, 1897.

2. Davenport, C. B.: *Heredity in Relation to Eugenics*, New York, Henry Holt & Co., 1915.

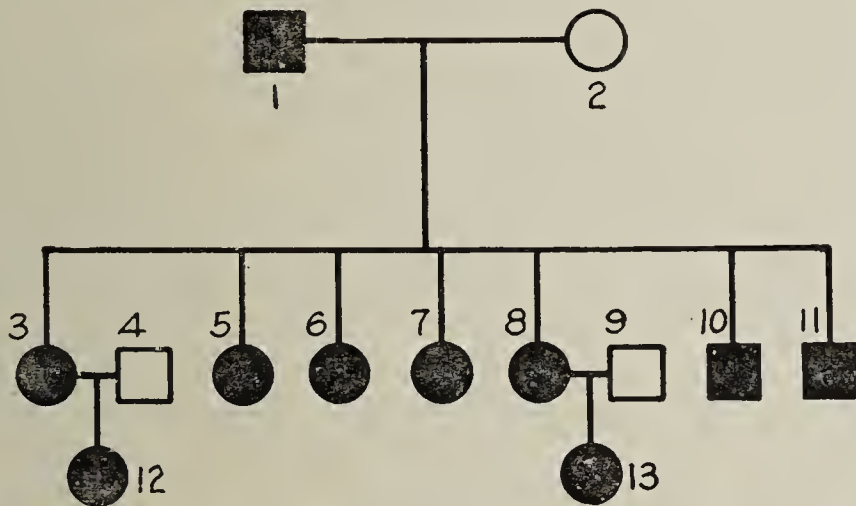


Fig. 1. Pedigree of polydactylism: Shaded symbols represent affected persons; surplusage of digits limited to the hands, and never more than one extra digit on each.

A rather small but well-formed sixth digit was found on each hand at the knuckle of the little finger. Both digits were attached at the sides in the same relative position, the upper part of the attachment being on a level with the joint, while the lower point of attachment was about 1 inch distant, along the outer edge of the metacarpal bone. The two digits were exactly the same size and were identical in all other particulars. There was no bone and a very low degree of sensitivity. They were incapable of voluntary movements. Markings peculiar to the last phalangeal point were present, as were also small finger nails proportionate to the size of the digits. In all of these respects the two digits were symmetrical throughout. The identity was unvarying as to skin color and contour.

Family History.—The determiners of the polydactyl trait were not carried on the maternal side; the subject remembered seeing the deformity definitely only in the case of his father, his brothers, sisters and the children of his oldest and youngest sisters. He was very certain of these three generations, and appeared to remember having seen these "rooster's spurs" on his grandfather and one of his uncles. Two brothers, five sisters and two children of two of the sisters continue the peculiarity; eleven descendants, including the father and himself, carry the determiners of this trait.

Regeneration.—The subject reported that his father had the supernumerary digits removed, and that since then it has been necessary to trim them off, as they grow continuously. This fact is strongly indicative of the phenomenon of regeneration of parts, characteristic of lower forms of life—the regeneration of a lost leg in a crab, for example. We may find here some support for the view that in the fertilized ovum is found an aggregation of diversified materials known as formative stuffs, each of which is deterministically specific in the direction of structure. Speculation as to the bearing of this phenomenon on the theory of epigenesis versus that of evolution is left to the cell specialist for indulgence. Whether the entire digit would be regenerated if permitted to grow is, so far as I am aware, unknown.³

Health History of the Subject.—He reported that he had had but few of the diseases of childhood. He confessed promiscuity and acknowledged having had gonorrhea and bubo, once each. He was not a drug addict, nor did he use tobacco or alcohol. There were present prognathism, receding forehead and narrow skull usually found in the negro; but no unusual stigmas were found save the existence of supernumerary digits.

Mental Ratings of the Subject.—The range of information of the subject was extremely limited, since he had never attended school and could neither read nor write. Mental ratings were obtained by means of the short performance scale and the short Yerkes-Bridges point scale. In the former examination the subject did well in the ship, manikin and feature profile tests, fairly well in the digit symbol test and on the mazes, but very poorly in the remainder of the examination. The result obtained by the short point scale method are regarded as the more reliable, and these indicate a mental age of 10.3 years.

The subject of this report was recommended for general military service.

3. Unfortunately I was unable to confirm by direct observation the reported phenomenon, which, if correct, is most unusual and must be regarded with extreme skepticism unless confirmed by other investigators.

FOCAL INFECTION AND ITS RELATION TO OBSTETRICS

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Given a focus of infection in a pregnant woman, there are certain well-known possibilities. A focus of infection means a colony of pathogenic bacteria within the tissues of the body in the process of active multiplication. This colony of bacteria is kept alive by the destruction or digestion of the neighboring tissues of the body, and there is a by-product of this growth known as bacterial toxin which is known to be antagonistic to the proper functioning of the body cells. Any such colony may be the point from which

bacteria may migrate into the blood stream and thus be scattered to different parts of the body, to cause disease in organs remote from the original focus. It is generally believed that such migration is of only occasional occurrence, whereas the absorption of the bacterial toxins into the blood stream is to a certain degree always present. I do not believe that focal infection is the only etiologic factor in the several complications of pregnancy which are here discussed. It does, however, have a tremendous influence on obstetrics; many complications, hitherto obscure as to etiology, can be attributed to the presence of a focus of infection. From a prophylactic standpoint, every obstetrician should study his patients to ascertain whether any such focus is present, and have it removed before it does harm.

The reader should interpret the term "focus of infection" as meaning exactly what it says, regardless of the location. I emphasize the teeth simply because I believe that they harbor these foci more commonly than do the tonsils, sinuses, ears, etc., and that they are actually of greater potential danger than the others. The roentgen ray has demonstrated that a high percentage of "saved teeth" have abscess formation at the ends of the roots. An

abscess at the end of a crowned or pivot tooth is a different thing from a decayed tooth. In the first case the abscess must necessarily drain into the blood stream; in a decayed tooth there may be some drainage into the mouth and some into the blood stream. The former is therefore the more dangerous.

My subject naturally divides itself into two parts: (1) those complications which may be the result of a temporary bacteremia or septic embolus, and (2) those complications which may be the result of the presence of the toxins of chronic sepsis in the blood of a pregnant woman.

BREAST ABSCESS

It is impossible to produce conclusive evidence that any given breast abscess was due to a septic embolus

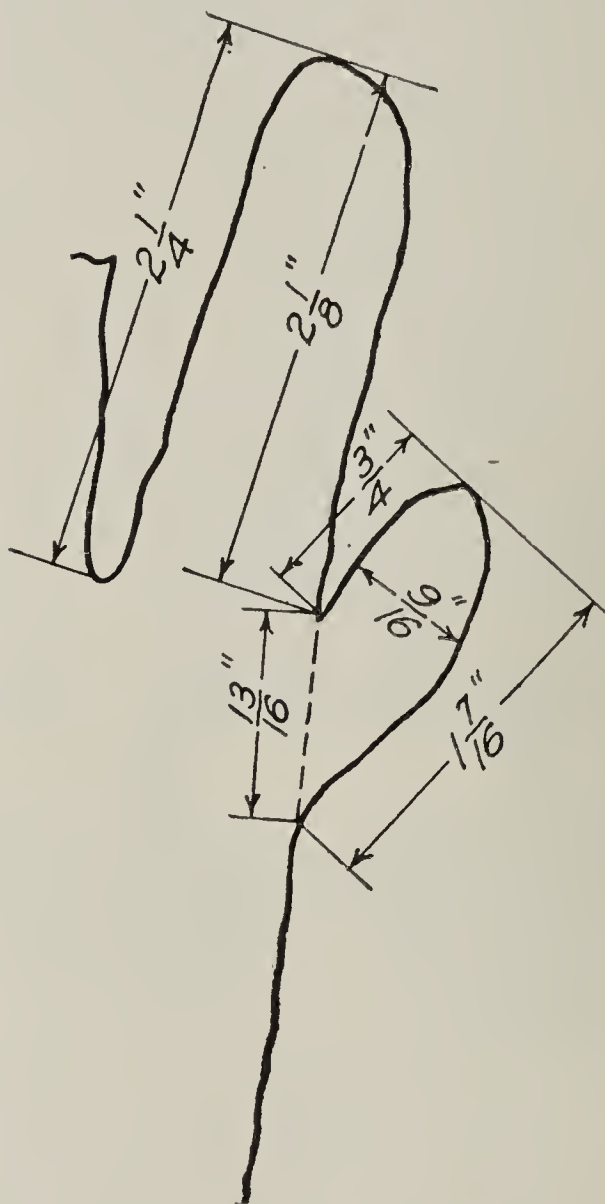


Fig. 2.—Size of little finger and digit, relative position of supernumerary digit, and place of attachment; left hand, palm upturned.

which had freed itself from a focus of infection elsewhere. However, it has undoubtedly been a common experience of many to observe a breast abscess develop most mysteriously without sore or cracked nipples and in the presence of painstaking care of the nipples. In one patient¹ a breast abscess developed fourteen days after delivery, although the baby died, and the breasts, which had not been used, had had careful treatment. In this case and in others I have been able to demonstrate a focus of infection elsewhere.

Breast abscess is much less common than that syndrome of symptoms classified as plugged duct or threatened breast abscess. It has been my experience to find most of these cases associated with a demonstrable focus of infection. I believe that they are for the most part actual infectious processes, and that the term "threatened abscess" is the correct one.

When we take into consideration how frequently the mother's milk becomes affected, with resulting illness of the baby due to these threatened abscesses, we must realize the far-reaching effect of an infected tooth, which may be the cause of illness in the baby through lack of proper breast milk or through nursing milk with bacteria contained therein.

I was called to see a breast-fed baby which was not gaining properly, crying a great deal, and showing little pustules on its head and body. I found that the mother had had two recent attacks of "threatened breast abscess." A roentgen-ray examination of the teeth revealed several apical abscesses. The milk remained so poor that I was forced to have the baby weaned.

Pyelitis is another complication of pregnancy which can frequently arise from a focus of infection. That pyelitis is known to be a more frequent complication of pregnancy than formerly can well be explained on the recent increase in the number of undrained foci of infection which have resulted from dental practices.

Certain obstetric patients, few in number, to be sure, have been known to die of puerperal sepsis in spite of careful aseptic treatment.² The causation has always remained a mystery; but if a focus of infection can be demonstrated in such a case, would it not be more reasonable to regard this as the cause than to assume that bacteria in the vagina should suddenly assume virulence sufficient to be fatal?

Women have died of pulmonary embolus before delivery. Thrombus formation implies infection in or around a blood vessel. If this occurs in an otherwise apparently healthy person, where does the infection enter? With a focus of infection demonstrable it is apparent that, on the principle of a temporary pyemia, it may be the primary cause.

One principle which may have a bearing has been established: bacteria injected into the blood stream of an animal, otherwise aseptically wounded, have a tendency to appear in and infect the aseptic wound or weakened part. It is also true that tissue in the process of production has a weak resistance to infection. If, therefore, bacteria in the blood stream reach the placenta, it is not improbable that they may cause inflammation in the villous membrane. The sluggishness of the blood stream at this point is a factor which tends to improve the opportunity for such a process.

It is my belief that a very large proportion of the uninduced miscarriages are due primarily to this cause. If the inflammation is sufficient in amount, it would result in rupture of the villous membrane with the formation of a hematoma, which in time may separate the placental tissue from the uterine surface sufficiently to cause internal, concealed hemorrhage or external hemorrhage, according to the location of the inflammatory process in the placenta.

Threatened miscarriage may be the result, or, if the hemorrhage is sufficient to terminate the pregnancy, a miscarriage is the result. I have been able to demonstrate foci of infection in a high percentage of those cases of miscarriage which have been in my charge.

So far as recent teaching has gone, *Spirochaeta pallida* has been granted the exclusive privilege of passing the villous membrane and infecting the fetus. Syphilis has stood out as the one disease which is clearly inheritable, the fetus actually containing the active infective agent. Why should the spirochete enjoy this exclusive privilege? There is evidence accumulating that this is not so, however, and once it is proved that other bacteria pass the villous membrane, then a focus of infection capable of throwing bacteria into the maternal blood stream becomes a danger and a menace to the life and welfare of the fetus.

Hydramnios, so frequently associated with the malformed and macerated fetus and with toxemia of pregnancy, is probably a secondary result of the same infective process.

Nearly every baby which in my experience has developed hemorrhage of the new-born has come from a mother in whom I have been able to demonstrate foci of infection in the teeth; and a high percentage of such mothers have shown some signs of toxemia during their pregnancy.

Pustular eruptions are fairly frequent in children not more than 48 hours old. Such cases of this as have come under my observation have been associated with foci of infection in the mother. Likewise, pustular eruptions are not infrequent sequelae to threatened breast abscesses.

If it can be proved, therefore, that the bacteremia originating from a focus of infection can result in inflammation of the placental tissue or villous membrane, a great many of the tragedies of obstetrics, hitherto unexplainable, can be given a reasonable etiology.

COMPLICATIONS OF PREGNANCY FROM TOXINS OF CHRONIC SEPSIS

Every focus of active bacteria within the body produces a by-product—toxin—which, in sufficient concentration is antagonistic to the proper functioning of the body cells. Disease is the outward manifestation of the effects of this toxin in the body.

The fact that a few days elapse before symptoms become apparent following infection is proof that toxins in lesser degrees of concentration are present in the system, doing damage gradually, and that the symptoms which declare the disease may be said to be the cumulative effect of low concentration of toxin, or the effect of the increase in the amounts of toxin to the point of causing symptoms. It must be a fact that these toxins in lesser degrees of concentration are injurious and will produce results in time, just as the lesser degrees of lead poisoning produce symptoms after the lapse of time.

1. Talbot, J. E.: A Theory on the Etiology of Toxemia of Pregnancy With or Without Convulsions, *Surg. Gynec. & Obst.* 28: 165-174 (Feb.) 1919.

2. The Prevention of Puerperal Sepsis, editorial, *Boston M. & S. J.* 170: 104 (July 18) 1918.

It would be a reasonable conclusion, therefore, that any focus of chronic sepsis must be a hindrance in some degree to the proper functioning of the body processes. By taking up those symptoms which manifest themselves as the result of high concentrations of bacterial toxin in the blood and working backward, we may thereby pick out those organs of the body which are undergoing damage during the prodromal stage of a disease. The situation is probably similar to the wear on the bearing of a machine. The signs of this wear do not appear until there is sufficient injury to cause wobbling or a break in the bearing. It is fair to assume, therefore, that if the kidney or the liver are the usual organs injured in a given disease, these organs are without doubt hindered in their proper functioning by these toxins when in low concentrations.

The fact that the urine of a severely sick person shows evidence of acute kidney irritation suggests that toxins of various types are damaging the kidney parenchyma. It is equally true that certain bacteria have a special tendency to cause damage to the kidney—witness the frequency with which scarlet fever is followed by kidney injury. This injury is generally not an immediate result, but a late result of the disease. In our endeavor to find the primary cause of the kidney inefficiency in toxemia of pregnancy and eclampsia, it seems significant that a streptococcus is so frequently associated with the scarlet fever lesions in the throat, and that the streptococcus is perhaps the most common type of bacteria in tooth root abscesses and chronic tonsillar abscesses.

Dr. James L. Huntington³ has reported the case of a primipara who on her first visit showed a blood pressure of 150, which returned to normal only to rise again three months later. This rise was soon followed by a severe attack of abdominal pain and the appearance of jaundice and blindness. This was followed by external hemorrhage. The systolic blood pressure was 170. The diagnosis of detached placenta was made and verified by an abdominal operation, at which time a cesarean section was performed. A catheter specimen of urine showed a large trace of albumin. Forty-eight hours after the operation the patient died, a temperature of 103 occurring within twenty-four hours after the operation. The liver showed much destruction, and a streptococcus was recovered from the peritoneal fluid.

If this patient had recovered, the case would have passed as a severe toxemia of pregnancy accompanied by complete detachment of the placenta. The rise of temperature so soon after operation suggests strongly that the source of infection, which turned out to be a streptococcus, was in the system before the operation. I believe it was the activity of this streptococcus which was the cause of the condition. The elevation of the blood pressure three months before probably denoted the activity of this bacterium in some undetermined focus of infection. In such a case we are dealing with the fulminating type, the ordinary case of toxemia being of the same nature but of lesser degree of intensity.

La Vake,⁴ who believes in the infectious basis of toxemia of pregnancy and eclampsia, quotes the work of Warnekros, who obtained eighteen positive blood cul-

tures out of twenty-five taken antepartum in toxemia cases. The streptococcus group is prominent in the kinds of bacteria recovered by him. This evidence forms a basis for my belief that some of the bacteria of the streptococcus group may have a specific power to injure the kidney function and kidney parenchyma.

The metabolic processes of a pregnant woman are much in excess of the normal. This increase in activity must incur a corresponding increase in the metabolic waste products that must be excreted. In order to prevent a backing up of these waste products in the system, the kidney reserve power must be called into play. If, however, the kidney function is hindered by the presence of the toxins of chronic sepsis in the blood stream, it is reasonable to assume that there may be a time when the hindering effect of these toxins may be sufficient to cause a failure on the part of the kidneys to eliminate properly the increasing amount of waste products from the developing pregnancy. We are, therefore, in a situation similar to that of a city with the outlet of the sewer partially plugged. The remaining outlet might be sufficient to take care of the sewage of the city, if it were not a growing city; but the increase in the amount of sewage to be removed soon overwhelms the impeded outlet until there is backing up, with resulting damage coming, not from the reduced outlet, but from the unre-moved sewage itself. We do not have to assume any special poison resulting from the developing pregnancy, for we know that excretory products retained in the system are injurious to that system. The symptoms which go to make up the disease of toxemia of pregnancy are, I believe, due to the retained waste products of the normal physiologic metabolism. The reported work of Slemons⁵ shows, likewise, a retention of nitrogenous waste products in the blood of toxemic and eclamptic patients.

That a large proportion of uninduced miscarriages are due primarily to foci of infection is shown: first, by the frequency with which miscarriage appears in the obstetric history of toxic or eclamptic patients; secondly, by the frequency with which antepartum hemorrhage, by which I mean hemorrhage coming on after conception, is associated with toxemic or eclamptic patients, and thirdly, by the frequency with which infarcts in the placenta are found on the edge of the placenta, frequently showing an indentation in the circular outline of the placenta which strongly suggests an injury at that point which stopped the growth of the placenta in that direction.

These three observations can be successfully correlated if we assume that there is a primary focus of infection in the system. If the infarct can be interpreted as a point of damaged placenta with nature's healing process superimposed, and if we assume that that damage was primarily caused either by the lodgment of a small embolus of bacteria or by the toxins of sepsis in the blood stream, it is not at all difficult to understand why these three observations are associated. It is also plain that it is not impossible to have miscarriages, antepartum hemorrhage and infarcts in the placenta without other toxic symptoms.

Suppose that there is a septic embolus in the blood stream of the pregnant woman, and that this embolus reaches the placenta. The sluggishness of the blood stream in this organ would improve its opportunity

3. Huntington, J. L.: Certain Causes of Bleeding During Pregnancy: Their Significance and Treatment, *Interstate M. J.* **24**: 1161 (Dec.) 1917.

4. La Vake, R. T.: Infectious Theory of Preeclamptic Toxemia and Eclampsia, *Journal-Lancet* **36**: 600 (Oct. 15) 1916.

5. Slemons, J. M.: Analysis of the Blood in Eclampsia and Allied Intoxications, *Am. J. Obst.* **77**: 797 (May) 1918.

for finding lodgment in the villous membranes. This inflammatory process, if located near the edge of the placenta, would cause swelling and local thrombosis in the placental tissue. If this swelling is sufficient, it is possible that there may result a local hematoma, which is in reality a small area of internal, concealed hemorrhage. Should this hematoma be large enough to cause a rupture between the edge of the placenta and the uterus, there would be an external hemorrhage which would make its appearance in the vagina only when it was sufficient to dissect its way downward between the chorion and the uterine wall to the external os. Thus, we might have numerous infarcts formed without any external hemorrhage. Likewise, we might have numerous infarcts formed without any accompanying evidence of toxemia of pregnancy.

If this injury to the placenta is in the middle of the placenta, an infarct may form without symptoms unless the injury is sufficient to dissect sufficient of the placental tissue to terminate the life of the fetus. In such a case the miscarriage may not result for weeks after the injury.

The following case is an example of this kind:

A woman, aged 39, who had a bad upper left wisdom tooth and several devitalized teeth, had been pregnant three times. The first pregnancy went to full term and was said to be associated with uremic poisoning and the puerperium complicated by pyelitis. The second pregnancy resulted in a miscarriage at two months associated with edema. The third pregnancy resulted in a miscarriage at five months, followed by several months of anemia.

A fourth pregnancy resulted in a miscarriage at four months. Before this miscarriage occurred she reported to me that she had had a sudden onset of severe pain in the right lower quadrant which had lasted about three days, but was almost gone at the time she reported to me. No further symptoms occurred until she began to bleed profusely, one month later. The vagina was packed and the patient taken to the hospital. When the pack was removed, the placenta came away with the membranes intact. The whole center of the placenta was destroyed and showed signs of old hemorrhage.

The pain which the patient experienced the month before was probably caused by an area of internal concealed hemorrhage in the middle of the placenta. This patient had what was in all probability a toxemia with her first baby; none of her subsequent pregnancies have been sufficiently long to develop real toxemic signs. This case also represents an example of the association of miscarriage with toxemia of pregnancy.

Antepartum hemorrhage due to premature detachment, partial or complete, has long been recognized as a common accompaniment of toxemia of pregnancy. I believe that this phenomenon is due primarily to an injury done the placenta either by a local infectious process or by the toxins of sepsis in the blood stream, followed by a hematoma which may dissect the whole or a part of the placenta away from the uterine surface. Dr. Huntington's case, cited above, is a good example of this in its worst form.

A case recently reported by Cornell and Earle⁶ of Chicago demonstrates exactly this *modus operandi* of a miscarriage:

A multipara, aged 36, in her sixth pregnancy, had some bleeding at the end of the second month. An examination gave reason to believe that an extra-uterine pregnancy was

present. Accordingly, the abdomen was opened and it was found that the patient had a bicornate uterus; in the right horn was a fibroid, in the left, a pregnancy. It was decided that hysterectomy was the best procedure, and the specimen was removed in toto.

This set of circumstances, that is, the removal of a uterus following so closely on a threatened miscarriage, is therefore exactly what could be desired in order to get a proper examination of the placental tissue following this threatened miscarriage.

The pathologic report is most complete:

The only abnormal feature of this placenta is the abundance of necrotic areas in the decidua adjoining the intervillous space. The margin of these areas is densely infiltrated with leukocytes. . . . They show profound necrosis centrally, there may be some hemorrhage, and there is always a margin densely infiltrated with polymorphonuclear leukocytes. . . . One small area . . . showed . . . a villous with edematous stroma. These observations point to a beginning abscess formation with spreading of the infection to the ovum. Slides stained with Gram's stain afford some inconclusive evidence of the presence of gram-positive cocci, but the histological appearance of the necrotic areas points clearly to their infectious origin.

Where did this infection come from? Besides mentioning that the patient had very bad teeth and some enlarged cervicallymph glands, the report tells of an acute infection, a "cold," which had lasted three weeks, and that the bleeding followed soon after this infection. The enlarged lymph glands in the neck might have become enlarged as a result of infection either in the teeth or in the tonsil. In all probability it was the infection in the tonsil which was the focus which threw off bacteria into the blood stream. I do not believe that the bad teeth can be thrown out of this case as a possible source of infection, unless the patient had other evidence of chronic disease of the tonsils. In her history she has stated that her first baby died of vomiting blood and her third pregnancy was a miscarriage. I would, therefore, read into her history a story of chronic infection either in her tonsil or in her teeth, antedating her first pregnancy. The incidence of a hemorrhagic baby associated with a later miscarriage, when viewed from the light of other experiences, forms an entity which justifies this supposition. If this is the true explanation of partial or complete detachment of the placenta, there is no reason for seeking another to explain the miscarriages which so frequently occur in the history of toxemic patients, or in patients who have a miscarriage without a demonstrable cause.

The three cases of pernicious vomiting of pregnancy which have come under my observation during my service at Memorial Hospital were so striking that I have classified this complication of pregnancy among the others attributed to the effects of chronic sepsis. In two of the cases observed, the mouth was full of carious teeth, the gums markedly inflamed and full of pus.

In one of these cases, twelve extractions of those teeth which were flush with the gums were made in the hope that the supply of toxins might be decreased sufficiently to improve the condition. In forty-eight hours the pulse had risen from 100 to 120 without marked improvement in the vomiting, and it was compulsory to terminate the two and a half months' pregnancy.

In the second case the patient was in extreme emaciation, having been sick for six weeks before entering the hospital. A five months' pregnancy was terminated and a macerated

6. Cornell, E. L., and Earle, W. C.: *Uterus Bicornis Unicollis with Two Ova Implanted in One Horn and a Fibroid in the Other*, Surg., Gynec. & Obst. 29: 485 (Nov.) 1919.

fetus removed. As in the other case, the mouth was a mass of infection. On discharge, recommendation was made that these teeth be extracted. However, this was not carried out, and about one year later the patient appeared at the hospital again and had to be curetted for an incompleting miscarriage.

The third patient appeared at the hospital on account of severe vomiting at the second month of pregnancy. The case had previously been diagnosed as tuberculous kidney after catheterization of the ureters six months before the patient became pregnant. Abortion was recommended and performed in this case.

In a recent article, Dr. Eugene S. Talbot⁷ says:

The number of focal infections and disturbances from faulty root fillings, local and systemic, is appalling. The average dentist, not being grounded in pathology, does not and cannot appreciate the seriousness of his faulty treatment. A different method of root filling must be immediately instituted or devitalized teeth must be extracted. A rule which I have adopted is that a patient's health is worth more than all the natural teeth.

From time to time, in the past thirty years, I have repeatedly called the attention of the profession to the fact that modern dentistry is producing more disease than any other one cause. The profession is beginning to realize the truth of this statement. Since the first dental college was established, there has gradually developed a method of practice of mechanics regardless of pathologic results. The method of practice, at best, has benefited the individual patient only for the time being. . . . Since our present methods of procedure are faulty, we must resort to radical changes in treatment and devote our entire attention to preventive measures.

CONCLUSION

One needs to be a believer in only a part of the statements made to be impressed with the seriousness of the situation and with the need for the removal of all known foci of infection when associated with pregnancy.

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TREATMENT OF DENERVATED MUSCLE *

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In 1841, Reid¹ advanced the theory that the atrophy of denervated muscle was caused by inactivity. He found that in the frog, a denervated muscle that was exercised daily by galvanic stimulation did not lose weight. Untreated muscles were thought to decrease one half, but it is now known that frog's muscle does not atrophy nearly so rapidly as Reid believed.

Brown-Séquard,² working with rabbits, also came to the conclusion that galvanic stimulation prevented atrophy. The work of these investigators led to a general adoption of the disuse theory. This theory served as a foundation for all later treatment. Massage and passive movements were found to promote circulation

in normal muscle, and therefore it was thought that similar treatment would benefit denervated muscle.

At the present time, the generally accepted methods of treatment for denervated muscles are either massage or electrical stimulation. Indeed, until the investigations of Langley and his collaborators, no experimental work seriously questioned the value of massage or electrical treatment in a muscle whose nerves had been destroyed. Although Schiff,³ from observations which he had made on the tongue and the limb, concluded that fibrillation is a general phenomenon in muscle after nerve section, Langley⁴ was the first to suggest that the atrophy is due to continuous fibrillation. Fibrillation begins four or five days after nerve section, and persists until some of the regenerating fibers make connection with the muscle. Such incessant activity might well cause wasting of the muscle. Langley and Kato⁵ were able to check fibrillation by the intravenous injection of considerable amounts of calcium chlorid. They demonstrated no change from the feeding of calcium lactate. Ionization with calcium chlorid stopped fibrillation, but produced such trophic changes as to make its use inadvisable.⁶

The time-honored treatment by massage has been studied in a series of researches by Langley and his co-workers.⁷ Their method has been to denervate two corresponding muscles in the same animal. After a period of treatment of the muscle on one side, the animal was killed and the corresponding treated and untreated muscles were carefully dissected out and then weighed. In this way, some idea of the relative amount of atrophy could be determined. They had to take into account the variations that might normally occur in the relative weights of the right and left muscles at the beginning. This method, moreover, assumed that the weight was a true measure of the unatrophied muscle because the connective tissue could not be ruled out.

Langley and Hashimoto⁶ reach this conclusion:

Reviewing the effect of the various forms of treatment we have tried, there is, we think, only one which gives any hope of considerably reducing the rate of atrophy, viz., ionization with a potassium salt, and that is slender, for an (apparently) positive result was only obtained in one out of three experiments.

The general impression we get from our experiments, and from those made earlier by one of us, is that none of the methods of treatment of denervated muscle now in use—passage of galvanic current, production of contraction, passive movements and massage—can have more than a slight effect in delaying muscle atrophy.

In a recent study,⁸ we have investigated the effects of massage on denervated muscle. Instead of depending entirely on the weight for comparison of the treated and untreated muscles, the work capacities were also determined. However, the method then used necessitated a sacrifice of the rabbit at the end of the functional test, since the muscles were dissected out for the purpose. The gastrocnemii were dissected free, with as little disturbance in the circulation as possible, and then with the leg in the foot-down position, the Achilles tendon was fastened to a weight pan while the tibia was clamped. The muscles also were weighed.

There was found to be a considerable discrepancy between the comparison by weight and the comparison

7. Talbot, E. S.: The Higher and Better Education of the Dental Student, *J. A. M. A.* **73**: 805 (Sept. 13) 1919.

* The work here reported was done in the physiology laboratory of the University of Toronto under the auspices of the Research Committee, Medical Services, Department of Militia and Defense, Ottawa, Canada.

1. Reid, John: *Edinburgh Month. J. M. Sc.*, May, 1841.

2. Brown-Séquard: *Compt. rend. Soc. de biol.*, 1841, p. 195.

3. Schiff: *Arch. f. physiol. Heilk.* **10**: 587, 665, 1851.

4. Langley, J. N.: *J. Physiol.* **50**: 337 (July) 1916.

5. Langley, J. N., and Kato, I.: *J. Physiol.* **49**: 417, 1915.

6. Langley and Hashimoto: *J. Physiol.* **52**: 15, 1919.

7. Langley, Kato and Hashimoto (Footnotes 4, 5 and 6).

8. Hartman, Blatz and Kilborn: *J. Physiol.* **53**: 108 (Sept.) 1919.

by function. With the functional test as the method for comparison, the massaged muscles were found to be stronger in 62 per cent. of the animals treated (thirty-seven rabbits). However, in view of our ignorance of the relative capacities of the two sets of muscles before treatment, a small preponderance of power in the treated muscles was considered inconclusive.

Believing that the functional test is a better method for determining the amount of active muscle tissue than that by weight, we have recently devised a method which makes it possible to study the relative strengths of the muscles at frequent intervals in the same rabbit. Thus, in the present research we have studied the effects of massage in sixty rabbits and the effects of galvanic stimulation in twenty-four, in all cases testing the treated and control muscles from every ten to fourteen days.

METHODS

Under anesthesia the flexor muscles below the knee in each hind limb were denervated either by crushing the sciatic nerve with a hemostat whose jaws were ground smooth, or by cutting the sciatic. Before cutting the nerve, a fine (000) cat-gut suture was passed through it at two points, a few millimeters apart. The nerve was then cut, and the two ends were drawn together by tying the suture. One suture included the two contiguous branches of the sciatic.

In a later series of rabbits in which we wished to delay the suturing, the proximal end was prepared in one of three ways: first, enclosed in a small sterile rubber tube which was doubled back and ligated to the muscle; second, enclosed in a tube which extended along the course of the muscle toward the knee, the tube being long enough to insure carriage of the growing proximal end beyond the peripheral cut end; third, the proximal end reversed and sewed to muscle without a tube.

The gastrocnemius muscle groups were tested on the day following the operation while the animal was lightly anesthetized with ether. The animal was placed in a ventral-side-down position on an animal board, with the hind limbs hanging freely over the end. Both hind feet were tied to aluminum sandals which swung from rigid horizontal rods (Fig. 1). The freely moving end of each sandal was attached by string to a scale pan and lever. The apparatus was so arranged that a record of the contraction could be made on a kymograph. The muscles were caused to contract by a supermaximal galvanic stimulation, the inactive electrode being placed on a moistened shaved area at the midline just in front of the tail, while the active electrode touched as nearly as possible the motor point for the gastrocnemius similarly prepared. A series of contractions at a wide range of loads with supermaximal

stimulation (30, 40 or 50 volts) indicated very well the relative strengths of the two muscle groups. The amount of work calculated at the optimum load was used as a basis of comparison for the functional capacity of the muscles. Each rabbit was tested in this way at frequent intervals throughout the course of the experiment.

TREATMENT

Massage.—The right limb of each animal was massaged for a certain period of time each day, varying from two to twenty minutes. Both right and left limbs were given passive movements three times at each treatment to aid in preventing stiffening of the joints. The feet were always encased in aluminum boots.⁸ Masseuses from the School of Massage, Hart House, Toronto, gave this treatment.

Galvanism.—A series of twenty-four animals was treated with the galvanic current. This treatment consisted of shocks produced by a metronome connected in the circuit, the aim being to secure a certain magnitude of contraction. This magnitude and the duration of the treatment varied in different rabbits. The contractions were roughly classified into minimal, moderate and vigorous. The duration varied from five to fifteen minutes, but in many cases each alternate minute was allowed for rest. The metronome made and broke the circuit once each second. The voltage ranged from 6 to 30 with 1 to 10 milliamperes of current. A greater voltage was required to produce the same magnitude of contraction as degeneration progressed.

RESULTS AND COMMENT

Both the electrical and the massage series may easily be discussed together, for neither treatment appeared to produce any greater effect than the other. This is easily explained when it is considered that the treated limb on the whole did not appear to be any better off than the control limb.

Within the first month after denervation, there was a very marked drop in the power to respond to galvanic stimulation. This occurred alike in the two limbs.

In addition to the series in which the nerves were crushed or cut and immediately sutured, we have studied a series of forty-one rabbits in which the proximal end of the nerve has not been permitted to unite with the distal end for periods varying from thirty to 100 days. These animals were treated either by massage or by electricity. The treated muscles lost their galvanic response just as quickly as did the controls. Moreover, neither massage nor electricity caused the denervated muscle to recover from the diminished response. Fourteen per cent. of the rabbits did show a slight advantage on the treated side, but it was no more than would be expected from accidental variation.

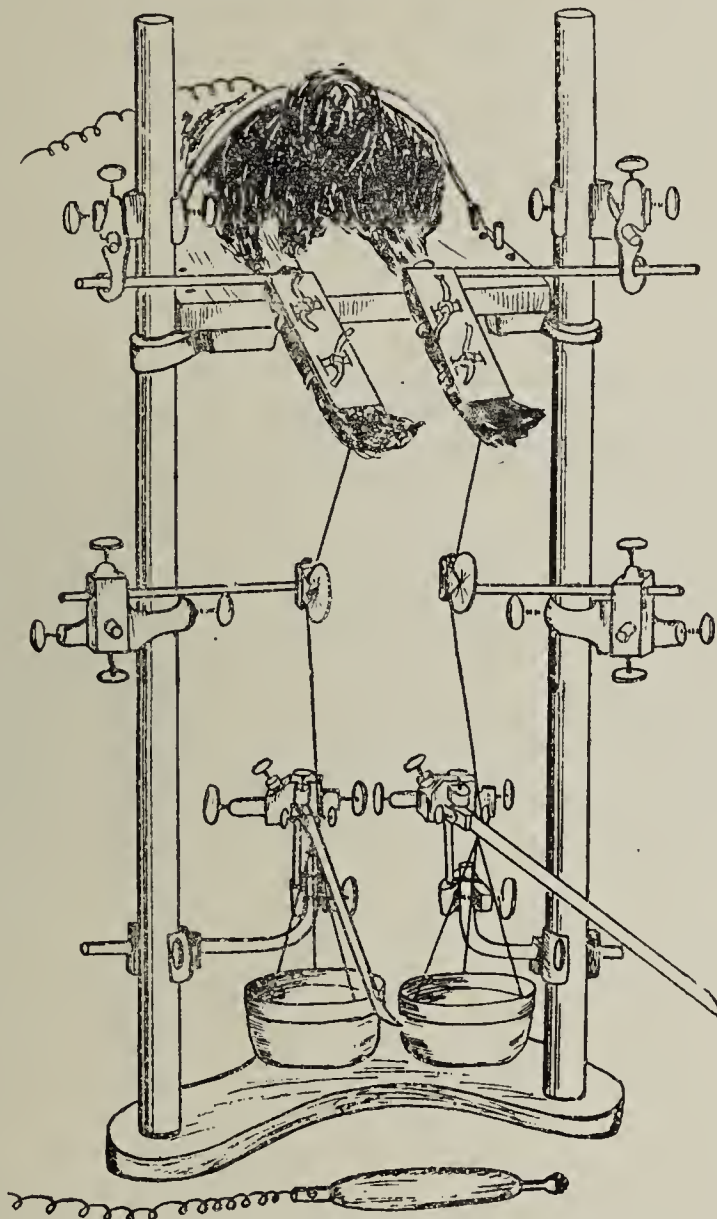


Fig. 1.—Apparatus for comparing the relative power of the muscles in the hind limbs of a rabbit, without dissection.

The recovery in the galvanic response in those animals with crushed or cut and sutured nerves is closely connected with the regeneration of some of the nerve fibers to the stage of union with muscle fibers, because such recovery was shown to be accompanied by reflex control over the muscles. This was determined by holding the rabbit by the ears and exerting sudden upward pressure against the hind feet. In the case of recovery, the animal would offer resistance against this pressure.

There was a very distinct difference in the rate of recovery of both "reflex resistance" and power of galvanic response between denervation produced by crushing the nerve and denervation caused by cutting. In spite of the fact that the cut nerves were immediately joined by suture, the rabbits in which the nerve was crushed almost invariably recovered about two months earlier. Howell and Huber,⁹ in two experiments in which they crushed the nerve on one side and cut and sutured the nerve on the other side, found at the end of twenty-one days that the return of irritability was slightly better on the side on which the nerve had been crushed. They attributed the difference to a better coaptation of fibers.

Our observations indicate that coaptation of the nerve fibers is essential to rapid recovery. Moreover, some of our experiments seem to show that coaptation is essential to complete recovery for, whereas the rabbits with crushed nerves regain full power within a few months, those with cut and sutured nerves recover very slowly even after the time when some of the nerve fibers have become united with muscle fibers. In

the time limit of our observations, many of the muscles had not regained the full power which they possessed before denervation (Fig. 2).

Such coaptation as occurs in a crushed nerve is obviously impossible in a cut nerve because there is not the precise chemiotaxis of peripheral over central nerve fibers. This is shown by the groping about of the central fibers, some growing into connective tissue and never succeeding in making connection with muscle fibers, while others find old sheaths, perhaps not their own. Some divide into branches which may eventually reach muscle and thus make up for those which have gone astray.

Again we wish to emphasize the fact that denervated muscle is not a muscle at rest. It is undergoing abnormal changes, of which fibrillation is perhaps only one. Such changes are probably the cause of muscle atrophy, for Langley and Itagaki¹⁰ have shown that

there is an increase in the rate of breakdown of the muscle substance.

We have examined the denervated muscles in three rabbits before and after massage periods ranging from five to twenty minutes (the skin always protected the muscle while it was being treated). There was no apparent reduction in the fibrillation. A similar study of fibrillation before and after galvanic stimulation in six rabbits has shown in no instance anything better than a transient reduction.

In the light of our present researches, we believe that massage in denervated muscle is futile. Galvanic treatment likewise appears to produce no beneficial effect.

SUMMARY

The sciatic or tibial nerve was cut or crushed on both sides of 123 rabbits. The denervated muscles on the right side were either massaged (eighty-six cases) or else stimulated by galvanic shocks (thirty-seven cases), daily.

Union of the cut nerve was prevented in forty-one animals, and in the others it was favored by suture or by crushing instead of cutting. The right and left muscle groups were compared from every ten to fourteen days by a determination of their power to do work when stimulated by supermaximal galvanic shocks while the animals were under the influence of ether.

Neither massage nor galvanic stimulation prevented the loss in galvanic response which normally develops a few days after denervation. Treatment likewise did not appear to cause a more rapid recovery of the muscle when the nerves were permitted to grow down

to the muscle fibers. Galvanic response and voluntary function in the denervated muscle returned much earlier in crushed nerve cases than in cut and sutured cases.

In all of our work we have been unable to demonstrate benefit from massage or galvanic stimulation.

Torpid Ulcers Heal Under Desiccated Normal Horse Serum.—Local treatment with desiccated normal horse serum for ulcers has been described by Dr. A. Amaral in the *Boletim da Sociedade de Medicina de S. Paulo*, 2:83, 1919. All the ulcers in thirteen cases described in detail were on the legs. No antiseptics are used, or grafts; the lesion is merely powdered well with the desiccated serum after it has been aseptically cleansed. The application is repeated every second day at first and then every third day. From six to eleven applications usually answered the purpose. By the next day the ulcer is found bathed in a puriform fluid but the micro-organisms grow less and less numerous, and disappear by the sixth to the tenth application. The smooth, nonretracting scar tissue grows on an average 0.003 mm at each application.

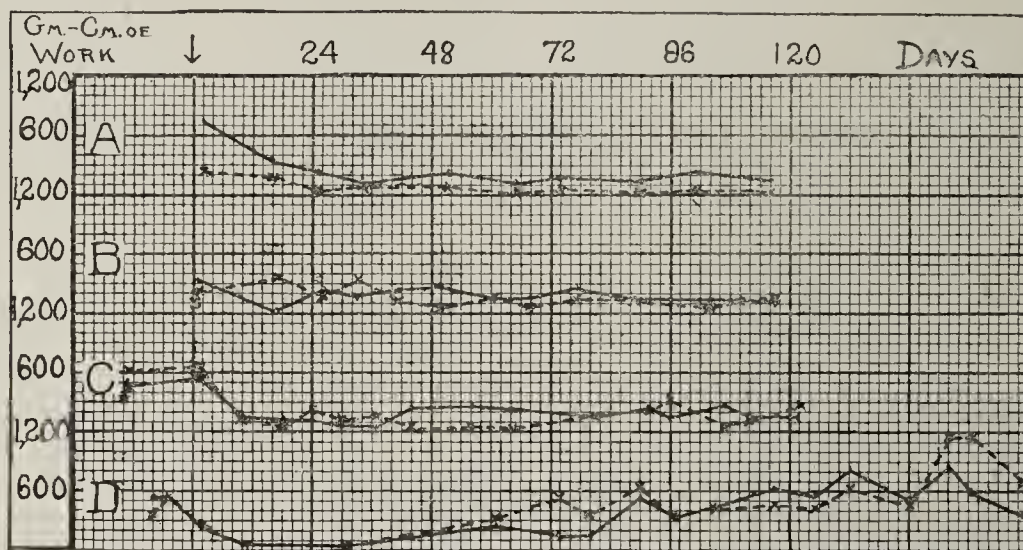


Fig. 2.—Typical curves obtained by plotting the work done at the optimum load in treated and untreated denervated muscle: solid line, treated muscle group; broken line, control group; arrow indicates day on which muscle was denervated; A, nerves cut and union with the peripheral end prevented by turning the proximal end aside after capping with a rubber tube; treatment, eight minutes massage, daily; B, nerves cut and sutured; treatment, vigorous contractions produced by galvanic shocks every second for ten seconds followed by a rest of ten seconds, the whole being continued for four minutes daily; C, nerves cut and sutured; five minutes' massage, daily; D, nerves crushed; fifteen minutes' massage, daily. The earlier recovery of the crushed nerve case is to be noted.

9. Howell, W. H., and Huber, G. C.: *J. Physiol.* 13: 361, 1892.

10. Langley, J. N., and Itagaki, M.: *J. Physiol.* 51: 202 (July) 1917.

TORSION OF THE OMENTUM

REPORT OF A CASE AND A BRIEF REVIEW OF
THE LITERATURE

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AND

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History.—Mrs. B. F., aged 36, admitted to the Jewish Hospital, Sept. 4, 1919, complained of pain in the lower part of the chest and in the epigastrium. She gave a history of a similar attack, but not so severe, five weeks previously. This improved in two days, but tenderness in the abdomen had persisted up to the time of admission. The present pain began on August 28, and at first was chiefly in the mid-epigastrium, but later moved down until it was quite low in the abdomen and more severe in the right iliac region. The pain was mild for four days and aching in nature; then it became much more severe, becoming a constant "cramp-like" or "doubling-up" pain. The abdomen was very tender, and any motion of it produced intense pain. The patient had been nauseated throughout the entire illness, but vomiting, expulsive in nature, occurred only once, having been induced by drinking hot water. The patient had been slightly constipated ever since the onset of the illness, and four days before admission she took a bottle of magnesium citrate and some cathartic pills, which caused the bowels to move and also increased her pain.

The patient had had a right inguinal hernia for twenty-two years which frequently descended, was often painful, and at times was difficult to reduce.

Examination.—On admission, the patient had the appearance of being quite ill. She was moderately obese, and her head, neck and chest presented nothing of significance. The abdomen was tender all over, but especially tender in the right lower quadrant. There was considerable rigidity of the muscles on the right side, preventing the palpation of any mass. A diagnosis of acute appendicitis was made, and the patient was operated on immediately.

Operation and Result.—The peritoneal cavity was opened through a right rectus incision. A little serosanguineous fluid escaped, and at the edge of the incision a greatly swollen mass of gangrenous omentum appeared. The omentum was found to be fixed by its distal extremity to the edge of the internal inguinal ring, and a considerable portion of it had been strangulated between the two points of torsion. The lower twist was just above the internal ring, where the omentum had been twisted into a cord not more than one-eighth inch in diameter. The portion of the omentum below this twist was healthy, probably having received a blood supply from adhesions. The upper twist had a thickness of about three fingers, and when unwound, was found to have undergone five and one-half complete turns. The gangrenous portion was ligated and removed, and a normal appendix was also removed. The uterus was found to be the seat of multiple fibroid tumors, but on account of the poor condition of the patient, these were not disturbed. There was a hernial sac on the right side, but this was empty at the time of operation. The patent internal inguinal ring was closed by suture from within the abdomen. The incision was closed without drainage. Convalescence was uneventful, and the patient obtained a complete recovery.

REVIEW OF LITERATURE

Since torsion of the omentum was first recognized by Oberst in 1882, new cases have been continually reported, so that in 1915 Bookman¹ was able to enumerate 131 cases in the literature, while an estimate of unrecorded or unrecognized cases would make the number much higher. The condition is therefore uncommon rather than rare, and not so interesting as a curiosity as it is from the standpoint of diagnostic

significance. Richardson has defined torsion as a twisting of the omentum on itself, causing sufficient obstruction of the blood supply to cause strangulation. In general, the condition is more frequent in males, the ratio of preponderance being 3 to 1 (Corner and Pinches²), while F. D. Smythe³ says that it is extremely rare in females. It usually occurs in middle-aged persons, and its almost invariable association with hernia is a fact important both in etiology and in diagnosis.

The causation of torsion of the omentum is not clear. Some abnormal fixation of the omentum seems to be the universal and predisposing factor. Such a fixation is most frequent in the sac of a hernia, although all intra-abdominal adhesions are possible causes. The two fixed points of the omentum are poles between which the structure is swung (to use an apt comparison of Bookman's) in a manner similar to a hammock. Added to this static condition there must also be an active extrinsic mechanical element bringing about the torsion, since the omentum of itself is not motile. This active element is commonly believed to be the peristaltic action of the intestine. The normally attached omentum, being fixed at only one pole, is easily twisted by every peristaltic wave, and is equally free to untwist. The omentum that is fixed at two extremities, however, when turned about by violent peristaltic action is turned between two zones of torsion. Such a condition must necessarily cause the previously loosely hanging structure to be shortened and tightened between its points of fixation, thus itself impeding its unraveling. It is probably such a shortening and tightening of this band of tissue that prevents the structure (which under normal conditions can easily untwist) from falling back again into its normal position.

The pathologic changes occurring in the twisted omentum are those of strangulation, i. e., anemia or congestion with stasis terminating in gangrene. Infection is rare and is usually hematogenous. In addition, the transverse colon may be caught in the torsion and undergo similar changes, with symptoms of intestinal obstruction. The symptoms in any case will depend on the nature of the torsion; the most complete classification of the different types that may be found has been made by Payr:

1. Torsion without coexisting hernia:
 - (a) Of the omentum only.
 - (b) Of the omentum plus adhering viscera.
2. Torsion with coexisting hernia:
 - (a) Of the intra-abdominal portion only.
 - (b) Of the hernial portion only.
 - (c) Complicated cases:
 - (1) Involving both portions.
 - (2) Either type, associated with retrograde incarceration.

Corner and Pinches give a somewhat simpler division into:

1. Torsion purely abdominal, with no hernia present.
2. Torsion purely hernial. This is the type commonly not recognized as torsion, but diagnosed as strangulated omental hernia.
3. Abdominal torsion complicating a hernia. This is by far the largest group, and is the type usually referred to as torsion of the omentum.

In a condition of such a variable nature the symptomatology must be necessarily multiform. This is even more evident when we consider the complex nature of

1. Bookman: Ann. Surg. **61**: 730, 1915; Am. J. Surg. **29**: 304, 1915.

2. Corner and Pinches: Am. J. M. Sc. **130**: 314, 1905.
3. Smythe, F. D.: Surg., Gynec. & Obst. **3**: 531, 1906.

the mechanical factors. Bookman thinks that the symptoms are produced chiefly by the interference with the omental blood supply. It seems most probable, however, that the traction of the tightened band of omentum on the stomach, the transverse colon and their peritoneal attachments is the all-important factor in symptomatology. Pain is the first symptom to appear, usually the most conspicuous, and the only one constantly present. The pain is often sudden in onset, usually abdominal, and frequently referred to McBurney's point, although occasionally referred to the hernia. Corner and Pinches state that there is usually no history of previous illness referable to torsion, although sixteen cases are cited in which previous abdominal symptoms, chiefly pain, were continuous for several weeks. They mention others in which there were histories of recurrent attacks of pain over periods up to nine years. As many as ten complete twists have been found, probably each attack of pain representing an increment of torsion before the final straw brings the patient to operation. Thus, Hartwell⁴ reports a case giving a fairly typical history of gastric ulcer lasting many years in which operation revealed a twisted omentum attached to the healthy wall of the stomach. Hale⁵ reports a case with a similar attack twenty years previously. In Bookman's case there were indefinite cramplike pains for four months, while in our case there was a history of an acute attack followed by a subacute hiatus of five weeks before the final attack.

The pain is usually of an aching or pulling character, and cramps may be present if there is an attendant ileus. Vomiting, according to Corner and Pinches, is present in one third of the cases, although Bookman believes it is present in nearly one half. Usually the vomiting is frequent and violent; occasionally it is blood stained, although nausea without vomiting may occur. If torsion or knuckling of the intestine occurs, the symptoms of mechanical obstruction supervene. The condition of the bowels is variable. They are usually open, but constipation or even obstipation may occur; blood and mucus may appear in the stool if there is obstruction. The temperature is usually slightly elevated, and there is also a moderate acceleration of the pulse. Some rigidity of the abdomen occurs in well developed cases, but the most significant physical sign is the presence of an abdominal mass, especially when associated with a hernia. Mild leukocytosis, with an increase in the polymorphonuclear elements, is usually present.

The foregoing, in addition to a brief study of the literature of the subject, will indicate how difficult the differential diagnosis may be in these cases. The very infrequency of torsion seldom brings it to the mind of the diagnostician as a possibility. It is most frequently mistaken for appendicitis, since that is the most common surgical intra-abdominal condition and is itself often of variable symptomatology. Volvulus is also commonly diagnosed in this condition, and may actually be associated, as previously indicated. Torsion within the sac of a hernia is always diagnosed as ordinary strangulation, nor is the differentiation of any importance.

F. D. Smythe has tabulated the differential points between torsion and appendicitis. These, however, in the main, are purely relative, and while of general academic interest, they are of little value in the

individual case. They indicate only an indefinite probability in diagnosis; but the rarity of torsion makes the probability of its presence infinitely less than that of appendicitis. The more rapid pulse, the lower temperature and leukocytosis, and the less marked septic symptoms, which are usually present in torsion, as well as the possibility of palpating or percussing an abdominal mass, are the most significant of the facts that the patient presents.

A feature in the histories of a number of cases presented in the literature, which seems to us to be of some diagnostic importance, is the nature of the onset. There is a progressive augmentation of symptoms by a series of sharp steps or jumps with intervals of varying length. Such a history is very suggestive of a mechanical disturbance with successive increments, in contrast to the steady and rather smoother continuous aggravation of symptoms in a mounting inflammatory condition. However, from a practical standpoint, there is only one thing that can give the diagnosis of omental torsion any degree of surety, namely, the coexistence of a hernia with the sudden appearance of an abdominal mass. Bookman's correct preoperative diagnosis was based on such a finding; without it a diagnosis is probably impossible. Corner and Pinches hypothesize a type of history, leading to an inferential diagnosis: a man of middle age with an inguinal hernia giving rise to symptoms suggestive in a general way of subacute intestinal obstruction. Examination reveals a painful or irreducible hernia, either incarcerated or strangulated, with a tumor, either in the scrotum or in the abdomen.

The treatment is, of course, operative. Unless there is delay, the condition is not likely to be a severe one, and the operation is technically easy; and it seems to be generally agreed that, in uncomplicated cases, the mortality is almost nil.⁶

CESAREAN SECTION UNDER PROCAIN ANESTHESIA *

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The choice of an anesthetic for cesarean section, always debatable, becomes more difficult in the presence of either cardiac or renal complications; and, if both exist, the problem is indeed a vexing one. Although pregnancy should carry with it some degree of immunity against the toxic effects of chloroform—which is doubtful—certainly its administration to any one suffering from a cardiac lesion would be very dangerous. Similarly, the administration of ether to a patient with pulmonary edema would be hazardous; in such cases even nitrous oxid anesthesia has been followed by pneumonia.

The respiratory distress accompanying decompensated cardiac lesions generally requires that the patient sit up, though confined to bed, and in this position the employment of general anesthesia becomes awkward

6. In addition to the references already given, the following will be found of interest.

Armstrong: *Interstate M. J.* **20**:1148, 1913.

Mueller: *Ann. Surg.* **56**:498, 1912.

Syms: *Ann. Surg.*, **54**:269, 1911.

Syme: *M. J. Australia* **5**:368, 1918.

* From the Department of Obstetrics and Gynecology, Yale University School of Medicine.

4. Hartwell: *Ann. Surg.* **61**:626, 1915.

5. Hale, Kelley: *Torsion of the Omentum*, *J. A. M. A.* **68**:977 (March 31) 1917.

at least. Toward the successful treatment of such patients, in urgent need of relief from the strain of pregnancy, no contribution could be more helpful than satisfactory local anesthesia, permitting a safe and speedy evacuation of the uterus. To be satisfactory the anesthesia must permit the patient to retain a posture both comfortable for herself and not unfavorable to the conduct of the operation. For the mother it must provide a greater factor of safety than does general anesthesia. And it must not deter the establishment of respiration in the new-born.

Recently in a case of broken cardiac compensation at the eighth month of pregnancy with pulmonary edema and increasing albuminuria, the method of anesthesia employed for the performance of cesarean section was put to a severe test; and procain met the requirements just enumerated satisfactorily. On the basis of a single case, ordinarily, we should be reluctant to predict how wide the field of application of a method would prove to be; but since we find that Dr. J. Clarence Webster¹ of Chicago announced its usefulness in 1915, and his opinion was confirmed by the experience of Dr. Hugh H. Trout² of Roanoke, we are convinced that our result was not exceptional. The former gynecologist employed it with excellent results in fourteen cases; the latter, among eighteen cases representing various obstetric complications, encountered three maternal deaths from eclampsia and eleven fetal deaths, the cause of which he does not discuss.

REPORT OF CASE

History.—The case which is the subject of this report was that of a young primiparous woman with mitral stenosis and insufficiency decompensated at the eighth month of gestation.

Jan. 3, 1920, she entered the hospital and found temporary improvement from the conservative treatment usually followed in such cases. Ten days later, pulmonary symptoms developed, and on January 15 her distress and her own appreciation of the seriousness of the illness was such that she readily consented to whatever therapeutic measures offered most for her recovery.

At the time she breathed comfortably only when propped upright in bed, and was coughing up a seromucous fluid tinged with blood. General anasarca had developed; the most extensive edema was that affecting the lower extremities and the vulva. The legs, swollen to the utmost, could not be brought together, and were placed comfortably only when abducted about 45 degrees. Each labium majus was distended with at least 300 c.c. of fluid. Through the chest walls, back and front, moist râles were audible everywhere. The area of cardiac dulness was increased; a loud systolic murmur was heard over the whole precardiac area as well as in the axilla; the second aortic sound was accentuated. The irregular pulse was counted between 120 and 140 to the minute; the respirations were 36. The temperature was 99.5 F. The urine, heavily loaded with albumen, contained numerous hyaline and granular casts.

The abdominal wall was edematous, and there were signs of fluid in the peritoneal cavity. The fundus of the uterus was five finger breadths above the umbilicus. The fetus was lying transversely with the head to the left, the small parts in front; the fetal heart, 35 to one-quarter minute, was difficult to distinguish from the maternal pulse. The position of the round ligaments indicated that the placenta was attached to the posterior surface of the uterus.

The clinical problem that the patient presented required an immediate solution, and one logical line of treatment without alternative was open to trial. Since

the spontaneous onset of premature labor, which frequently brings relief, had not occurred, in this instance the pregnancy must be terminated by one of the rapid artificial methods. The vaginal route was out of the question, for in the first place the patient could not lie down without serious embarrassment to both respiratory and cardiac activity; and in the second place, edema of the birth canal precluded the requisite exposure for vaginal hysterotomy. Thus, with laparotomy the remaining route by which to evacuate the uterus, another obstacle was encountered in the risk of its performance under general anesthesia; consequently, local anesthesia was chosen. In the conduct of the operation the steps taken, the phenomena observed and the reaction of the patient will be treated more fully than usual; these technical details have an interest beyond this particular complication of pregnancy, and their description may prove useful to those who adopt the procedure, whatever the type of case.

Operation and Result.—Preliminarily, a half-grain of morphin and a hundredth of atropin were administered hypodermically. Then the patient was placed on the table comfortably in a half-sitting posture supported by pillows. The bladder was emptied by catheterization and the site of the operation prepared in accord with the usual tincture of iodine technic. One c.c. of pituitary extract was administered in the thigh as the operation began.

In the median line, from umbilicus to symphysis, the skin was infiltrated with procain solution, 1:400, to which epinephrin had been added in the proportion of 3 drops of epinephrin to each ounce of procain solution. For cutaneous anesthesia, approximately 30 c.c. of the solution were required, and that sufficed not only during the division of the skin but also of the subcutaneous fat, more than an inch in thickness. As the continuance of the incision caused discomfort, about 20 c.c. of the procain solution were used to infiltrate the fascial layer. Probably the position of the incision, directly in the midline, accounted for the fact that special treatment of the parietal peritoneum was not required; this structure may have been reached by the injection of the anesthetic into the fascia.

After the peritoneal cavity was opened, several hundred cubic centimeters of ascitic fluid were expelled, and loops of small intestine floated in front of the uterus into the upper angle of the wound. These were held back by abdominal pads. The uterus was not delivered through the abdominal incision. Without procain infiltration that portion of the organ which appeared was tested with regard to sensitivity and, as the patient was unable to detect when the knife was in use, after the membranes were exposed, the uterine incision was prolonged with bandage scissors until approximately 15 cm. in length. During this procedure the membranes ruptured and a fetal hand came into view. The fetus was delivered through the aperture in the uterine and abdominal walls by the method usually followed in breech extraction. Careful delivery of the arms, one at a time, and good flexion of the head simplifies the extraction and renders less likely the prolongation of the uterine incision with a ragged tear. The patient made no complaint after the abdominal fascia became anesthetized, was not aware that the fetus was being delivered, and subsequently, except for questions regarding the likely duration of the operation, made no comment.

The loss of blood was not excessive, probably not greater than 400 c.c. After the placenta was removed, the uterine cavity was wiped out with large gauze sponges to remove fragments of the membranes, if left behind, and also to remove blood clots. The internal os, almost closed, was not disturbed, for the uterus had retracted firmly, bleeding had nearly ceased, and we preferred to save time and run no unnecessary risk of causing pain.

The uterine wound was closed with two tiers of catgut sutures. The placing of the deeper interrupted sutures was awkward because the uterine incision retracted to a lower level than the abdominal incision; this difficulty was over-

1. Webster, J. C.: A Series of Abdominal Cesarean Sections Performed Under Local Anaesthesia, Surg., Gynec. & Obst. 20: 221 (Feb.) 1915.

2. Trout, H. H.: Cesarean Section Under Local Anaesthesia, Surg., Gynec. & Obst. 27: 95 (July) 1918.

come by using the sutures already in place for upward traction. The upper continuous suture approximated the peritoneal edges of the uterine wound. The abdominal wall was sutured in layers without further use of procain. The peritoneum was closed with a continuous catgut suture, and similarly the muscle edges were brought together. The fascia was united with interrupted catgut; the skin and subcutaneous tissue with interrupted silkworm gut. The post-operative convalescence of the mother was afebrile and without untoward complication.

COMMENT

We can confirm Heaney's observation³ that resuscitation of the new-born requires less arduous measures after cesarean section under procain than under general anesthesia. In this instance the infant began to breathe immediately after its removal from the uterus. It weighed 2,000 gm (about 4½ pounds) and measured 42 cm. (16½ inches) in length.

In this case the successful local anesthesia, we believe, must take into account two facts, namely, the initial administration of morphin and the cooperative attitude of the patient. To the former we ascribe the complete control of coughing during the operation—a complication from which we had expected considerable annoyance. It is pertinent that the patient expressed great relief as soon as the uterus was emptied. A less cooperative subject, we can readily understand, would make the employment of local anesthesia impossible.

Certain features of our technic, differing slightly from that described by Webster and by Trout, probably served to spare the patient no little pain. The method employed here was the one we follow as a routine in the performance of cesarean section, and we were not aware that it differed from the technic of others until the papers in question were recently consulted. Thus, the grasping of the lower uterine segment, which Webster found to be a painful maneuver because it placed the ligaments under tension, was unnecessary in our case, for the degree of hemorrhage was not extraordinary.

The delivery of the uterus through the abdominal incision, which Trout described as a crucial step in the operation and the cause of severe pain, is rarely advisable even with general anesthesia. The procedure requires a longer abdominal incision than otherwise, renders more difficult the control of the intestine, and tends to increase the likelihood of infection. If this step in the operation under local anesthesia is omitted, the patient is spared at two points, namely, when the uterus is delivered and when the fetus is extracted. If it lies within the peritoneal cavity, traction on the uterus beyond a given degree is prohibited by the opposition of the abdominal wall, and the ligaments are not stretched.

In general, we agree with Webster and endorse his recommendation of procain whenever a general anesthetic would be unsafe. The solution he used was twice the strength of the one which gave us perfectly satisfactory conditions for an uninterrupted operation. We learn also from reports of its use in general surgery that a 0.5 per cent. solution has been employed without fear of toxic effects even when 200 c.c. were required. Since in that case the subjects were not suffering from cardiac lesions, they are scarcely comparable with our patient, and probably no mistake was made in limiting as far as possible the quantity of procain she received.

If the introduction of this method has any unfavorable results, probably they will be in the nature of extending too far the indications for cesarean section, namely, to cases in which the termination of pregnancy should be secured by the less radical methods for inducing the onset of labor. Therefore, it is important to emphasize the fact that the proper treatment of obstetric complications must not be confused with the question of anesthesia. The former problem must be solved in the light of sound teaching which will contrast the ultimate results obtained, on the one hand, by recourse to cesarean section and, on the other hand, by the use of more conservative procedures. The latter question requires an answer when a frank indication for laparotomy exists and the choice lies between general and local anesthesia. In these circumstances, if local anesthesia is preferable, procain may be employed with ease and confidence. To the mother it offers the requisite safety; and it has less influence toward prolonging the initial period of apnea in the new-born than has ether, nitrous oxid or chloroform.

OBSERVATIONS ON A GREEN-PRODUCING COCCUS FROM THE BRAIN IN A CASE OF ENCEPHALITIS*

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I wish to report the results of the bacteriologic examination in a case of encephalitis, diagnosed clinically as encephalitis lethargica.

The case was that of a woman, aged 70, who entered the Cook County Hospital, service of Dr. J. A. Wolfer, March 5, 1919, with impaired mentality, apparently complete loss of memory, and a broken forearm. The present illness was said to have come on suddenly one morning three weeks previously with dizziness. Following this, came mental changes that grew progressively worse. The forearm was broken while preparing her for the trip to the hospital. In the hospital, in addition to these changes, arteriosclerosis was found with increased knee jerk. She lived twelve days in the hospital. There was little or no fever (axillary) until the eighth day, when the temperature rose to 100 F., and also a few hours before death, when there was a sudden rise to 105 F. The respirations ranged between 19 and 22, rising to 38 five hours and dropping to 12 one hour before death. The pulse was about 80 most of the time, increasing in proportion to the temperature. She had no control over the bladder. She slept a great deal of the time, and when not sleeping was stuporous and talked at random. Nothing abnormal was found in the urine except a few white cells on one occasion. The white blood cell count on three examinations at two-day intervals was 8,800, 9,400 and 12,000. No Wassermann, Lange or Nonne tests were made. The duration of illness was five weeks.

Anatomic Diagnosis (Dr. E. R. LeCount).—Encephalitis (lethargic type?); congestion and edema of the leptomeninges; hemorrhages in the trachea and lungs; hyperplasia of the tracheobronchial lymph glands; foramen magnum pressure furrow of the brain stem; marked general anemia; Colles' fracture of the left arm; petechial hemorrhages of the lining of the stomach, trigon and rectum; senile arteriosclerosis; chronic diffuse nephritis; atrophy of the cerebral cortex; fibrous perivascular leptomeningitis with scars; external fibrous pachymeningitis.

Sections for microscopic study were taken from cortex of frontal and parietal lobes, lenticular nucleus and internal capsule, thalamus and hypothalamus, cerebral peduncles, pons,

3. Heaney, quoted by Webster (Note 1).

* From the John McCormick Institute for Infectious Diseases.

and medulla, and stained by the toluidin blue, Gram-Weigert, and hematoxylin-cosin methods.

An encephalitis was present, characterized in the cortex by an increase in glia cells, neurophagia, a shrinkage of the nerve cells in their lacunae, and a marked reticulation of neuroglia tissue. These changes were present in other sections also but to a less marked degree. There was a small amount of perivascular infiltration in some sections. Many of the small venous channels were greatly congested; no hemorrhages or typical plasma cells were seen. There was no evidence anywhere of thrombosis of the cerebral vessels.

In the sections stained by the Gram-Weigert method a few large diplococci and ovoid forms, similar in size and shape to those isolated and studied in pure culture, were seen. There was no regularity in their association with the pathologic changes, as they occurred both in the interstitial tissue and in relation to the cells showing neuronophagia.

Material was taken from the brain for cultures eleven hours after death. This material was obtained by means of sterile capillary pipets which were plunged into the brain at places seared by a red-hot spatula. The sites selected for this were the insula, the cerebral peduncle (about 0.5 to 1 cm. proximal to the pons), and along the inferior lateral border of the temporal lobe. The direction and depth of insertion of the pipets were gaged by sections of a brain hardened in formaldehyd. Then by a few short jabbing motions, with suction at the same time, brain material was drawn into the pipettes and transferred to tubes of melted agar (10 c.c.), kept at 46 C., to which goat blood had been added (10 drops to the tube). The material was emulsified against the sides of the tubes, appropriate dilutions made and plates poured in the usual way. These were incubated for twenty-four hours and studied. A diplococcus developed in pure culture. Not one of the uninoculated plates yielded any growth.

The cerebrospinal fluid and heart blood obtained post-mortem were sterile.

The diplococcus stains by Gram's method: The individual cocci vary in size from about 0.25 to 0.75 micron in diameter, the greatest variation being seen in the short chains which contain from four to eight elements. The diplococcal forms, although similar in shape, differ markedly in size. There are also a few large ovoid forms, 0.75 to 1.25 microns in diameter, which occur singly. All these variations are to be found in a twenty-four hour blood-agar culture.

On blood-agar plates, after twenty-four hours' incubation, pin-point colonies are formed surrounded by a 0.5 mm. greenish zone; the surface colonies are larger, 0.5 to 1 mm. in diameter, greenish and have a greenish zone about them; they are round, moist, and slightly convex. After seventy-two hours there is a small amount of true hemolysis around the colonies. In plain broth a smooth cloudy suspension is formed with some fine white sediment which is readily diffusible. On plain agar, a moderate growth occurs which is moist and slightly opaque to reflected light. On blood serum, the organism grows rapidly. Litmus milk is made slightly acid. Using a 1 per cent. solution of the various sugars in sheep-serum water, with litmus as the indicator, lactose, mannite, salicin, dextrose, and saccharose were fermented; inulin was not. The final readings were made after seventy-two hours.

Rabbits and guinea-pigs were injected by various routes, including the intracerebral, with a thick suspension of twenty-four hour cultures of the diplococcus recovered from the brain, but all remained well except one rabbit that died sixteen days after the injection, apparently from some other cause.

Normal rabbits were injected intravenously at weekly intervals with suspensions of this organism, heated at 56 C. for thirty minutes. The suspensions were made from blood-agar slants, the initial dose being one slant. After repeated injections, serum was drawn and its agglutinins and opsonins studied. In both the agglutination and opsonic tests, twenty-four hour dextrose broth cultures were used with normal rabbit serum and salt solution controls. The agglutination mixtures were incubated at 37 C. for two hours, placed at room temperature for eighteen, at which time the final readings were made. In the opsonic tests, fresh normal human leukocytes were used, and the final mixtures (diluted serum,

leukocytes and dextrose broth suspension) were incubated at 37 C. for thirty minutes, smears made on slides and the point of opsonic extinction determined.

The results shown in the table indicate that immunologically the coccus isolated is distinct from similar green-producing cocci from poliomyelitis, influenza and other sources.

It is of special interest that von Wiesner,¹ the only observer that so far as I know has reported the results of bacteriologic studies of cases of epidemic encephalitis, recovered a gram-positive diplococcus from the brain of every case which he examined (he does not say how many). He does not state that he found the organism in the microscopic preparations.

It is to be noted that the type of changes in this brain are essentially the same as those described by Bassoe and Hassin² in their report of three cases, the chief difference being one of degree. It is also interesting to note that a careful review of the reported cases of epidemic (lethargic) encephalitis has failed to reveal any uniformity in the degree in which these changes may occur in the various portions of the cen-

REACTIONS OF SERUM OF RABBIT INJECTED WITH
ENCEPHALITIC COCCUS

Strains of Cocci	Agglutination	Opsonic Extinction
Encephalitic coccus used for immunization	50,000	6,400
Poliomyelitic coccus	800	150
Poliomyelitic coccus	100	75
Poliomyelitic coccus	400	300
Green producing streptococci from influenza:		
Brain	1,600	1,200
Brain	1,600	150
Brain	1,600	75
Brain	1,600	6
Lung	1,600	300
Lung	1,600	35
Sputum	1,600	15
Lung	400	0
Cerebrospinal fluid	200	35
Pneumonia	200	6
Cerebrospinal fluid	100	15
Blood	100	15
Sputum	50	0
Lung	50	0
Cerebrospinal fluid	50	35
Blood	0	0
Sputum	4	15
Several strains of green producing cocci from measles and rubella	0	0

With normal rabbit serum the encephalitic coccus was agglutinated at a dilution of 20 only; practically no phagocytosis.

tral nervous system; nor is there any definite grouping of pathologic changes that can be described as occurring in all of the reported cases.

The fact that the heart blood and cerebrospinal fluid were sterile indicates that the infection of the brain was not agonal.

The diplococcus isolated is a large green-producing streptococcus, similar in many respects to other green-producing cocci, but apparently different in its immunologic reactions.

1. Von Wiesner: Wien. klin. Wchnschr., July 26, 1917; quoted by Wilson, S. A. K.: Lancet 2:7 (July 6) 1918.

2. Bassoe, Peter, and Hassin, G. B.: A Contribution to the Histopathology of Epidemic ("Lethargic") Encephalitis, Arch. Neurol. & Psychiat. 2:24 (July) 1919.

Hospital Ventilation.—A highly successful hospital superintendent attributes a great amount of his success to the fact that he has made a study of, and has been able to recommend and put into operation, a plan for the systematic ventilation of hospitals of which he has had charge, and this arrangement has been so satisfactory that doctors give his hospital preference wherever possible. He has found, he says, that the condition of the air has more to do with the health of the patients than most of us have any idea of, and that instead of mechanical equipment rightly installed proving an expensive proposition, it is in reality a most economical method.—C. A. Eddy: *Hospital Management* 9:45 (Jan.) 1920.

Clinical Notes, Suggestions, and New Instruments

A SCREW TRACTOR FOR USE WITH THOMAS' SPLINT

R. M. YERGASON, M.D., HARTFORD, CONN.

Associate Orthopedic Surgeon, St. Francis' Hospital

The Thomas splint and its recent modification, the so-called new model or high-bridge splint, require suspension in order to keep the ring, or its equivalent, beneath and against the tuber ischii as the point of countertraction. The entire extremity and splint are balanced to maintain this suspension by two or more weights, aggregating, let us say, 20 pounds. For the sake of clarity I shall speak of this as the upper, or balance, weight. If we desire to apply 15 pounds of traction to the extremity by means of weights and pulleys, this weight is added to that of the splint and leg and must be compensated by an equal amount added to the balance weight above.

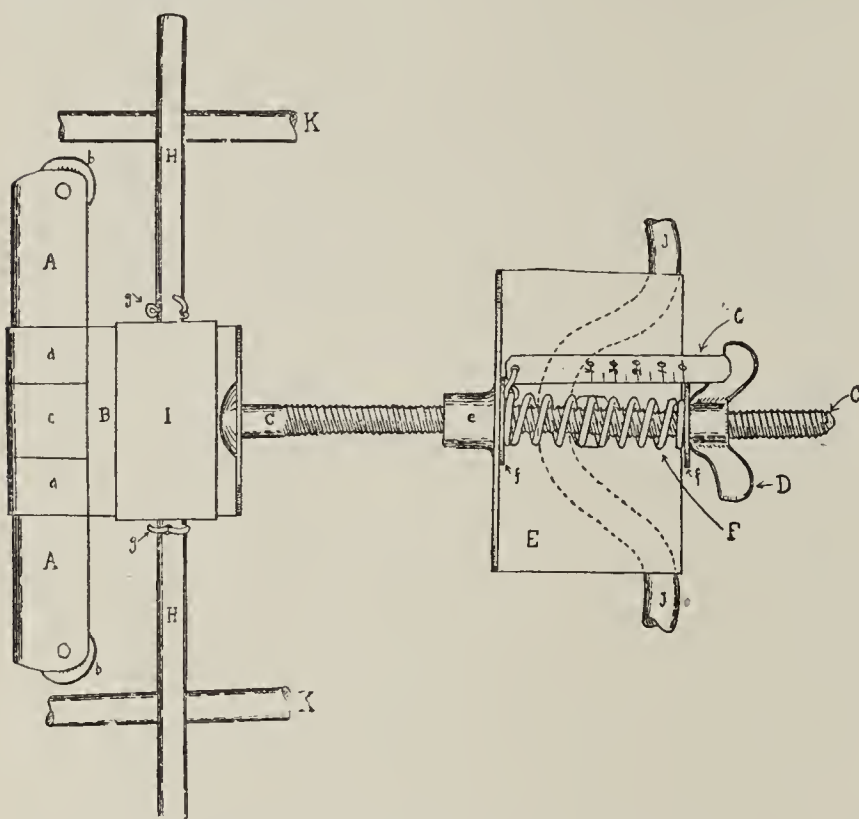


Fig. 1.—Details of tractor, viewed from above.

Should this be carried out we should have the weight of the extremity and splint plus 15 pounds, balanced by 35 pounds as an upper weight. This gives a total of close to 70 pounds to be carried by the Balkan frame. All this is heavy and a nuisance, and the patient justly feels that there is a great weight hanging over him. If a traveler is used to enable the patient to move up and down the bed, such a weight is out of the question. It therefore becomes necessary to do away with weight and pulley traction when using suspended splints.

To accomplish this desirable end, several tractors depending on a screw have been devised. Some of these lack a means of determining the amount of pull; others are heavy, clumsy or difficult to apply.

My purpose here is to describe a tractor which, in addition to eliminating some of these difficulties, is adaptable to various conditions and different splints.

The tractor consists of the following main parts, each of which I shall later describe somewhat in detail: A horizontal cross-piece (A) corresponding to the wooden block of the old Buck's extension; a hook-shaped piece (B) which furnishes a seat for both the cross-piece and the head of the screw; a screw (C), provided with a wing nut (D), by means of which the traction is applied; a carrier (E) for attaching the tractor to a Thomas splint; a spring (F), bearing a scale (G) for the purpose of measuring the amount of traction,

and a transverse rod (H) carried by the bearing (I) for the purpose of preventing rotation out of the horizontal plane.

The cross-piece (A), corresponding to and taking the place of the foot block of the old Buck's extension apparatus, consists of a piece of $\frac{3}{32}$ inch sheet iron (A-A), 5 by $1\frac{7}{8}$ inches, bent on itself lengthwise, and thus furnishing a mount for two small brass pulley wheels (b-b), which measure $\frac{5}{8}$ inch in diameter by $\frac{1}{4}$ inch thick. At its central part the cross-

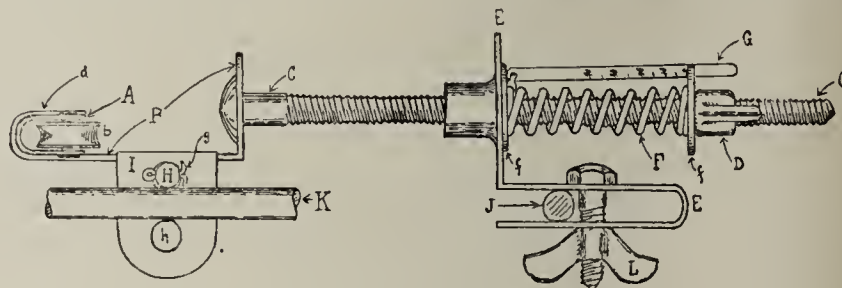


Fig. 2.—Details of tractor, side view.

piece is thickened by means of a second piece of $\frac{3}{32}$ inch sheet iron (c), $\frac{3}{4}$ inch wide, soldered to A.

The second part or hook-shaped piece (B) is made of $\frac{3}{32}$ inch sheet iron. At one end (proximal) it is bent into two hooks (d, d) which serve as a seat into which the cross-piece (A) slips easily and is there firmly held. At the other (distal) end, this piece (B) is bent up at a right angle where a $\frac{3}{8}$ inch hole allows the bolt (C) to be slipped into place. The top of this up-standing portion is rounded from side to side.

The bolt (C) is a standard $\frac{5}{16}$ inch carriage bolt 6 inches long, threaded all the way down, and carrying the wing nut (D).

The carrier (E) is of $\frac{3}{32}$ inch sheet iron. Its lower portion is quite wide (3 inches), and is so bent as to grasp the U-shaped bend at the end of the Thomas splint (J), to which it is clamped by means of a small bolt and wing nut (L). The upper part carries the bolt (C) through a sleeve of $\frac{3}{8}$ inch tubing (e), which is brazed on. The bolt slips loosely through this sleeve and is not threaded into it in any way. Above the sleeve the carrier (E) is rounded from side to side. The compression spring (F) slips easily over the bolt. Attached to the spring by means of one link of chain is a small copper tag or scale (G), the graduations of which denote the amount of traction in pounds. The washers (f-f) at each end of the spring serve as points between which the length of the spring may be conveniently measured.

Across the hook-shaped piece (B) is a saddle shaped bearing of sheet iron (I); through the two holes of which a $\frac{1}{4}$ inch rod 8 inches long (H) is passed and held in place by two cotter pins (g-g). This rod rests on the side bars of the Thomas splint (K).

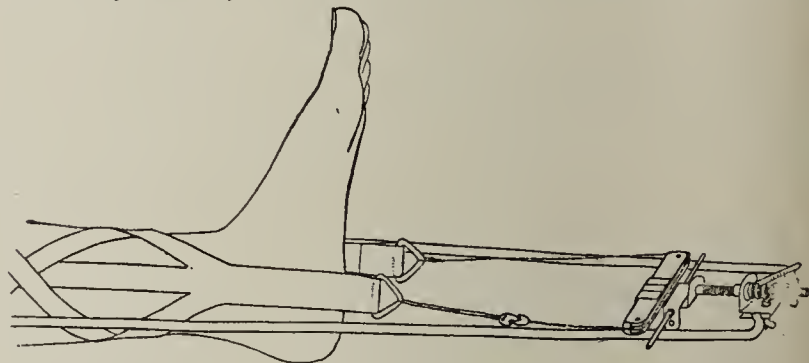


Fig. 3.—Manner in which tractor is attached to the extremity.

To attach the tractor to the extremity, wire triangles or D-rings are fastened to the adhesive plaster stickers. To one of these the end of a piece of picture wire is made fast. The other end of the wire passes through the D-ring of the opposite sticker and is attached to itself by means of a small jamb cut from a scrap of sheet iron (Fig. 3). The bight or free loop of the picture wire is laid over the two pulleys of the tractor, and all slack is taken up by means of the wing nut (D). Traction may now be applied by means of the wing nut (D), the amount of the compression of the spring being read on the scale.

There are great advantages in this method of attachment. Should the adhesive slip or lengthen on one side of the leg, the wire will adjust itself around the pulleys and the result will be a slight lessening of the traction. The pull will remain steady, however, and equal on the two sides, as the cross-piece will not take the oblique position commonly appearing in the foot block of the Buck's extension. The nurse, observing the lessened pull, gives the nut a few turns and all is as before. Further, should the heel pin be used, the picture wire can be measured beforehand, boiled up with the instruments, and applied during the operation. In this case there will be no necessity for disturbing the dressings about the heel pin when the patient has returned to the ward. As the cross-piece (*A*) is held simply by two hooks between which its reinforcement (*c*) is snugly jambed, it may be slipped out at any time and another style of cross-piece substituted.

The rod (*H*) carried by its saddle (*I*) rests on the side bars of the splint (*K*), thus preventing rotation of the cross-piece. By removing one of the cotter pins (*g*) the rod may be withdrawn and the saddle removed. This is convenient should it become necessary to reverse the tractor and attach it beneath, instead of above, the splint, in which case the saddle may be applied in the inverted position, bringing the rod above the side bars of the splint as before. In this case the holes (*h*) in the saddle are used for the passage of the rod so that the tractor will remain horizontal beneath the splint. By reversing the figured side view of the tractor, its arrangement when beneath the splint will be at once apparent.

The bolt can be slipped out and a longer one, or one of different thread, substituted should this be desirable. In use the bolt may become screwed up to the point where its head is close to the sleeve (*e*) of the carrier. In this event there will be no traction on the extremity, shortening of the spring simply indicating the amount of force with which the bolt head is drawn against the sleeve. This is a small point to guard against in the use of the tractor. Should it occur, all that is necessary is to turn the wing nut back to the end of the bolt and take up the slack of the picture wire by which the tractor is attached to the extremity.

As regards measurement of the traction, any spring of the compression type (in contradistinction to the expansion type) which will slip easily over the bolt may be used. An unknown spring is placed on the tractor, which is attached to the splint, and a spring balance substituted for the extremity of the patient. The blank copper tag is scratched to indicate the length of the spring under varying amounts of traction as shown by the spring balance. The tag is attached to the spring, constituting a scale to indicate the amount of traction on the leg. A spring which is compressed about $\frac{1}{8}$ inch for each 5 pounds and is long enough to indicate 40 or 50 pounds of traction, before being completely pressed together, will be found most convenient.

To use the tractor with the high-bridge splint, the clamp of the tractor may be attached to the lower bar of the strap-iron rectangle at the distal end of the splint (Fig. 5 *M*).

More satisfactory than this, however, is to fasten a bar of flat metal (*N*) across the rectangle. This bar should have a hole $\frac{3}{8}$ inch in diameter at its middle point, through which the bolt (*C*) of the tractor is passed. This new bearing does away with the necessity of the clamp and sleeve (*E*), which is removed. The tractor may be attached to the movable leg-piece of the high-bridge splint, in a similar way, by simply boring a hole in the middle of the transverse part of the leg piece.

The whole tractor as described is only 8 inches long. A much shorter form may be had by using a permanent cross-piece, eliminating the cross rod (*H*) and using a shorter bolt (Fig. 4). This makes possible its use with a splint only very slightly longer than the extremity.

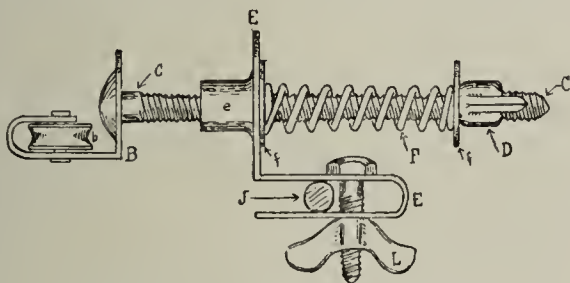


Fig. 4.—Short form of tractor.

ADVANTAGES

The advantages of the tractor may be thus summed up: It weighs only a few ounces, yet will produce any desired amount of traction. Although designed for use with the Thomas splint, it may be easily attached to any other metal splint. It is quite short, which economizes space in the length of apparatus, a by no means minor consideration. Various springs may be used, so that very light or extremely heavy traction may be applied.

The compression spring has a distinct advantage over the expansion or spring balance type of tractor, for it occupies less room in the splint the greater the traction, whereas the expansion spring lengthens with greater tension, thereby necessitating a longer splint. The foot-piece with pulleys does away with the obliquity of the old Buck's extension foot-block, and eliminates torn adhesive stickers.

The ease with which the tractor is assembled makes possible the substitution of different parts to meet special or varying conditions. The apparatus is simple and easy of construction. In use at the St. Francis Hospital we have found it satisfactory in every way.

54 Church Street.

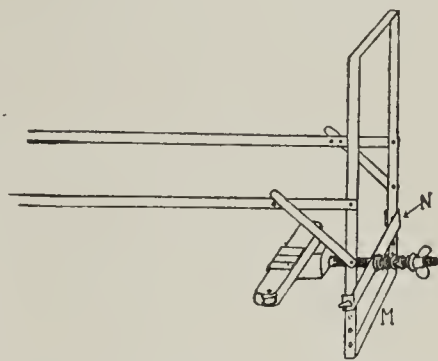


Fig. 5.—Use of tractor with high-bridge splint.

ACUTE HEMORRHAGIC NEPHRITIS SECONDARY TO MIDDLE EAR INFECTION

REPORT OF CASE

JOHN W. SHUMAN, M.D., SIOUX CITY, IOWA

Renal irritation, indicated by albumin, casts and red and white blood cells in the urine, and "focal infection" I have witnessed a number of times; but the case reported here offered the first opportunity to observe an acute renal irritation of such severity, secondary to suppurative otitis media, complicated by mastoiditis and lateral sinusitis, caused by the streptococcus micro-organism, from onset to recovery.

The child was examined, Dec. 2, 1919. About this time a very helpful article by Dr. Lewis Webb Hill¹ appeared in *THE JOURNAL*, in which were mentioned four cases of nephritis secondary to otitis media.

This case is reported as corroborative evidence of the material presented in that article, and for the aid it may give to those encountering the same or similar pathologic conditions. It emphasizes the fact that renal disturbance is a secondary rather than a primary disturbance.

REPORT OF CASE

A girl (Record No. 1948), aged 3½ years, was admitted, Dec. 2, 1919, to the eye, ear, nose and throat service of Dr. J. B. Naftzger, St. Joseph's Hospital, Sioux City, Iowa, with the diagnosis of suppurative otitis media. The left ear was discharging. The temperature was 100 F., the pulse, 130. Blood examination revealed: white blood cells, 36,200; polymorphonuclear neutrophils, 74 per cent. Mastoid tenderness and "shadowed" cells, demonstrated by the roentgenogram, were present. These findings led to the diagnosis of mastoiditis complicating suppurating otitis media. But the urinalysis by Dr. Mortimer Herzberg (director of the laboratory) complicated things greatly: amount, 5 ounces; bloody; acid; specific gravity, 1.015; albumin present in large amounts. Microscopic examination revealed an enormous number of red blood cells and a number of granular casts.

It was decided at consultation that the renal condition was secondary to the ear infection, and mastoidectomy was performed under nitrous oxid anesthesia administered by Dr. R. M. Waters. The mastoid cells were necrotic. A report of cultures was: "a few isolated diplococci; a few short chains

1. Hill, L. W.: Acute Nephritis in Childhood, *J. A. M. A.* 73: 1747 (Dec. 6) 1919.

of streptococci; some diphtheroid and staphylococcic micro-organisms."

At the time of operation the lateral sinus was exposed and appeared not to be involved, but the symptoms did not disappear after the operation; in fact, they became more alarming. December 7, five days later, the temperature was 105.4 F., the pulse 140 and white blood cells, 22,500 (polymorphonuclear neutrophils, 82.1 per cent.). The urine (twenty-four hour quantity, 7 ounces) was very bloody and contained albumin +++ and many granular casts. Physical examination was otherwise negative. On account of these conditions it was thought that the lateral sinus was involved, so Dr. R. Q. Rowse ligated the left external jugular and Dr. Naftzger opened and cleared out the sinus which was thrombotic. Following this procedure, the temperature descended by lysis (normal, February 8), the urine changed and became "smoky" four days later, and the albumin was ++ instead of +++. A week later, the albumin was + and January 22 there was only a trace. The same decrease in pathologic evidence was observed in the microscopic findings. Jan. 25, 1920, the patient was discharged from the hospital.

LATER DATA

The urinalysis was negative January 9, and remained so until January 29, at which time the little girl complained of "a hurting" in the urinary bladder region and urinated small amounts frequently. Albumin and a number of red blood and pus cells were found in the voided specimen. That night the mastoid incision, which had healed over, "opened and drained pus." The urine of February 3 was negative except for an occasional red blood cell. This would appear as added evidence to substantiate the belief that the middle ear infection caused the pathologic condition of the kidney.

Frances Building.

THYROTOMY IN REMOVAL OF A SUBGLOTTIC LARYNGEAL EPITHELIOMA

BERTRAM C. DAVIES, M.D., LOS ANGELES

The question of routes in operating for the removal of laryngeal growths is one that cannot be settled by any fixed rule. A decision must be based largely on (1) location and (2) variety of growth.

Obviously a papilloma, located, as it usually is, on the vocal bands in the anterior part of the larynx, occupying the supraglottic region, and being more or less pedunculated, can be snared off by the direct or indirect endolaryngeal route. Other and more serious growths, depending on their location, may be removed by the same route. Occasionally there is an epithelioma that has a reasonably long pedicle, even though it be subglottic, that may be removed by direct laryngoscopy. No general rule applies, however, and specific consideration must be given in each case as to the route of operation.

The case here reported demonstrates, among other things, that some study is necessary at times before any decision can be reached.

REPORT OF CASE

History.—W. B., man, aged 66, bricklayer, seen May 4, 1919, whose father and mother were over 80 years old at death, weighed 170 pounds, and there had been no change in weight during the last two years. He had had the ordinary diseases of childhood. He denied venereal infection. When 21 he had bronchitis, which lasted several years; he was quite ill with abnormal temperature and considerable cough, raising thick mucus. He was unable to work. Recovery had been slow. He had been a heavy smoker for the last twenty-five years. About six months before, he had noticed his voice becoming hoarse and weak. There was no pain or cough and deglutition was normal. There had been gradual increase in hoarseness, which was more marked during the past month and was worse at night or when the patient was tired.

Physical Examination.—The nose and nasopharynx were negative. There was granular pharyngitis. There was marked "hooding" of the epiglottis, but no inflammatory condition. The mucous membrane of the arytenoids was injected

and swollen, with superficial ulceration in the posterior commissure. The false cords were swollen; this swelling, together with the condition of the arytenoids, obliterated all but the anterior third of the true cords. Some injection of the true cords was noted. Examination of the chest gave evidences of healed pulmonary lesions, some emphysema, and fine râles over both apexes. Roentgenoscopy revealed scar tissue rather evenly distributed over both lungs, with a slight increase on the left side. The Wassermann test was negative. The von Pirquet reaction was ++. The blood count was normal; hemoglobin, 85 per cent. A tentative diagnosis of tuberculous laryngitis was made.

Treatment and Course.—The intratracheal use of argyrol, 30 per cent., daily, was prescribed, and tuberculin was given. Smoking was stopped. Phonation was discontinued. Alternating hot and cold packs were employed one-half hour at bedtime.

After four months' treatment the ulceration healed and the laryngeal swelling subsided, the true cords gradually coming into view. This was largely due, no doubt, to interdiction of the use of tobacco and the employment of voice rest.

Under cocain, 20 per cent., the direct laryngoscope was used and a positive diagnosis of epithelioma was made. The neoplasm was subglottic, lying under the left cord and not having a pedicle; it was white, papillary, and incorporated in the body of the cord for its full length, leaving the edge free. There was no inflammation of the cord or the surrounding tissue.

November 3, thyrotomy was performed under ether anesthesia by the open method.

Some authorities advise preparatory tracheotomy some days previous to this operation, but it was decided to perform the two at one time.

Operation and Result.—A median incision was made from the os hyoideum above to the level of the fourth ring. Careful dissection was then done, exposing the thyroid and cricoid cartilages and tracheal rings. Whenever possible, blood vessels were ligated before cutting. This was not always feasible; but the amount of blood lost did not exceed 2 ounces. When the field of operation was entirely exposed, the second tracheal ring was incised and a No. 4 tracheotomy tube inserted.

At this stage the anesthetist changed his position and administered the ether by means of a saturated pledget held over the opening of the tube.

The attempt was next made to incise the thyroid cartilage, passing a knife through the cricothyroid ligament; but in this particular case, ossification had taken place and bone had replaced cartilage. Several efforts were made with different instruments, keeping in mind the necessity of avoiding injury of the cords; finally separation of the lateral halves was accomplished with a heavy pair of Seiler's turbinal scissors. Even retraction of the lateral halves then gave a good view of the neoplasm, verifying the diagnosis as to the location and probable nature of the growth. At this juncture a gauze pack was introduced into the trachea at the cricoid level to prevent leakage of blood from above, as well as to aid the anesthetist by forcing respiration by way of the tracheotomy tube.

A wide and careful dissection was done, carrying the incision down to the lateral wall of the thyroid and back to the arytenoids, including the cord with the tumor mass, leaving, however, a narrow border of the upper portion of the cord. The tissue below the site of the tumor was dissected and the edge drawn up and sutured to this remaining portion of the cord, thus affording a line of articulation for the right cord. Subsequent events have justified this effort, as the patient's phonation is quite as good as before the operation.

The hemorrhage was very slight, and only three catgut sutures, No. 00, were necessary to produce closure of the tumor site.

The tracheotomy pack was now removed and the halves of the thyroid cartilage were brought together and held by chromicized catgut through the perichondrium and surrounding tissue. The skin was closed with silkworm sutures.

A stiff collar of several layers of adhesive plaster was applied over a dry dressing, immobilizing the thyroid carti-

age. This collar was reapplied after each dressing until union of the halves was accomplished.

The tracheotomy tube was removed on the fourth day.

The patient made an uneventful recovery, having no respiratory difficulty at any time. The temperature at the highest point was 99.4 F. There was little, if any, postoperative pain and total absence of cough. The tracheotomy wound was closed in three weeks. The patient returned to his regular employment of bricklaying in four weeks.

1113 Los Angeles Investment Building.

A CASE OF IDIOSYNCRASY TO ACETYSALICYLIC ACID

THURMAN D. KITCHIN, M.D., WAKE FOREST, N. C.

The extent to which acetylsalicylic acid (aspirin) is used, both by the profession and the public at large, and the infrequency with which untoward effects result from its use, warrant the report of this case.

REPORT OF CASE

On Thursday, Feb. 5, 1920, an influenza patient was admitted to the College Hospital. The next day he complained of so much pain in his back and head together with general aching, that at noon he was given 5 grains of acetylsalicylic acid. This dose was repeated at 4 o'clock and at 8 o'clock the same day. At 10 o'clock that night there were no untoward effects. The next morning (Saturday) a slight rash was noticed on the face and arms, and although acetylsalicylic acid was suspected, the patient was given another 5-grain dose. In two hours he exhibited a severe form of angioneurotic swelling of the face, especially marked about the eyes. This did not involve the mucous membrane of the mouth and throat. The entire trunk and limbs were covered with an urticaria. The wheals were of irregular shape, and varied in size from one-half inch to more than 2 inches in diameter, and were accompanied with intense itching. This condition lasted all day and did not begin to fade until 1 o'clock that night. By morning it had disappeared.

The patient was a medical student, and with his consent, and purely as an experiment, at this time (Sunday morning) he was given another 5-grain dose of acetylsalicylic acid. In less than an hour the picture described above was exactly reproduced, lasting until the following morning. The patient was then given $2\frac{1}{2}$ grains, and in less than half an hour showed the same results as before, except that this time it lasted thirty-six hours. The patient was now given 1 grain, and in about an hour and a half the same effects resulted, but were less severe and disappeared in about ten hours. It might be added that during all this time the patient received no other drug whatever, and his elimination was apparently excellent.

At no time did the patient show any alarming symptoms, as is usual in such cases. The effect seemed to be entirely limited to the skin manifestations.

COMMENT

There are elements in this case which point either to a cumulative action of the drug or to a condition of anaphylaxis. The fact that so small a dose as 1 grain, given thirty-six hours after a $2\frac{1}{2}$ -grain dose, should produce the condition described suggests that either the drug was not eliminated or destroyed in the body as rapidly as is generally thought, or that the first doses rendered the patient hypersensitive to the drug—an anaphylactic reaction.

Rates of Mortality as Related to Conjugal Condition.—The effect of conjugal condition on mortality has often been discussed. The findings of Knibbs, statistician for Australia, are in accord with the usual ideas on the subject: "For males between 20 and 85 years of age the death rate is considerably higher for the 'not-married.' For females the advantage lies with the 'not-married' until the child-bearing period has been passed, after which it lies with the 'married.' The exact age at which the death rates become equal in the case of females is probably about 43 years."

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

PHENACAINE.—Holocaine Hydrochloride.—Ethenyl-Paradiethoxy - Diphenyl - Amidine Hydrochloride.— $\text{CH}_2\text{C}:(\text{NC}_6\text{H}_4\text{OC}_2\text{H}_5)(\text{NH.C}_6\text{H}_4\text{OC}_2\text{H}_5).\text{HCl} + \text{H}_2\text{O}$.—The hydrochloride of phenetidyl-acetphenetidin, a basic condensation product of paraphenetidin (para-ethoxy-amino-benzene) and acetparaphenetidin (phenacetin). Phenacaine was first introduced as holocaine hydrochloride.

Actions and Uses.—Phenacaine is a local anesthetic like cocaine but having the advantage of a quicker effect and an antiseptic action. Five minims of a 1 per cent. solution when instilled into the eye are usually sufficient to cause anesthesia in from one to ten minutes. It is said not to cause the scaliness of the cornea which sometimes results after the use of certain other local anesthetics.

Dosage.—It is applied in a 1 per cent. aqueous solution. Phenacaine is incompatible with alkalis and their carbonates and the usual alkaloidal reagents. Glass vessels should be avoided in preparing the solution, porcelain being used instead.

Phenacaine is prepared by the interaction of molecular proportions of paraphenetidin sulphate and acetphenetidin in the presence of phosphorous oxychloride, decomposing the resulting phenacaine sulphate with sodium hydroxide, crystallizing the base from alcohol, neutralizing it with hydrochloric acid, and crystallizing.

Phenacaine forms small, colorless crystals; odorless; faintly bitter and producing transient numbness on the tongue; permanent in the air.

Phenacaine is soluble in about 50 parts of water; freely soluble in alcohol and in chloroform; insoluble in ether. On boiling in glass vessels, the aqueous solution becomes turbid owing to a separation of a small quantity of the free base by the alkali derived from the glass. Phenacaine forms a clear, colorless solution in water, the solution having a neutral or faintly alkaline reaction on litmus.

The aqueous solution of phenacaine yields a white precipitate on the addition of silver nitrate test solution or of ammonia water.

The addition of a few drops of chlorinated soda solution to a saturated, aqueous solution of phenacaine produces a finely divided, flesh-colored precipitate. In a few minutes, this separates as a violet-colored precipitate, and if the mixture be shaken with ether, the ether is colored Burgundy-red.

Dissolve about 0.05 Gm. of phenacaine in 2 Cc. of concentrated hydrochloric acid, boil for two or three minutes, cool and add one drop of potassium dichromate test solution. No ruby-red precipitate is produced (*absence of 5 per cent. or more of acetphenetidin or paraphenetidin*).

Dry about 1 Gm. of phenacaine, accurately weighed, to constant weight at from 100 to 105 C. The loss does not exceed 7 per cent.

Phenacaine dried as above melts at 189 C.

To about 25 Cc. of water and 5 Cc. of ammonia water contained in a separator, add about 0.5 Gm. of phenacaine, accurately weighed, which has been previously dried to constant weight at from 100 to 105 C. Extract the free base by shaking with successive portions of chloroform. (Preserve the solution in the separator for the test for phosphorous compounds given below.) Collect the chloroform solutions in a beaker by passing them through a small funnel holding a pledget of cotton. Evaporate the chloroform and dry the free base at from 100 to 105 C. to constant weight. The weight obtained should be not less than 87.5 or more than 90.5 per cent. of the weight taken.

Purify the base by crystallization from hot alcohol, and after drying to constant weight, determine the melting point. It melts at from 116 to 117 C.

To the solution remaining in the separator, after the original extraction of the base, add an equal volume of concentrated nitric acid and boil for five minutes. Evaporate this solution to about 25 Cc. and add to it 25 Cc. of ammonium molybdate test solution. Keep the mixture at a temperature of about 60 C. for three hours. No yellow precipitate is produced (*phosphorous compounds*).

Incinerate about 0.5 Gm. of phenacaine accurately weighed. Not more than 0.1 per cent. of ash remains.

Phenacaine-Werner.—A brand of phenacaine complying with the N. N. R. standards.

Manufactured by the Werner Drug and Chemical Co., Cincinnati, O. No U. S. patent or trademark.

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SATURDAY, MARCH 27, 1920

SPIRITS AND THE MEDICAL MIND

The linguistic devices by which we distinguish between a specialist in the laws of the behavior of matter, one who deals with the functions of the body, and still another who ministers to the body diseased, indicate that for human ends we must divide what in nature is joined. We call the one man a physicist, the second a physiologist, the third a physician. The names, like the pursuits, all begin alike, for they are but phases of a common nature. So when any doctrines come forward that threaten to overturn the common foundation of science, physicist, physiologist and physician are equally concerned, and with them in these days the psychologist, who shares somewhat of the habit of mind of all three. But so far as the psychologist has a special warrant to consider belief in spirit-agency or in telepathic or other unrecognized forces, he approaches the matter with the clinical sense congenial to the medical mind.

In this mood he is far more interested in noting why people believe in the revelations of mediums, and flock eagerly to listen to tales and to theories that support their inclinations, than he is in any patient analysis of the evidence to see what it really shows. In the larger aspect this is an anthropological interest, for we know that men in all stages of development have been believers in spirit-agency and have brought forward evidence and theory to hold together their beliefs. We know that this ancient world of folk-belief, of superstition, of readiness to think of things in occult terms, survives in all ultimate issues of human existence. Tap the stream where you will and it shows a common expression. No phase of it is more persistent than the medical; people always want health, and will go through amazing procedures to secure it, swallowing potions and theories with equal appetite. One could write a history of the human mind in terms of the cures that people underwent and the reasons offered for the cult. One could start with humors and temperaments, and wind through exorcism, laying on of hands, mesmerism, clairvoyance, homeopathy and Christian science, with any number of side excursions to delay one's progress. Spiritualist

healers who in a trance state prescribe harmless drugs at hurtful prices are by no means obsolete.

But all this is relevant mainly because the type of mind inclining to such cults has in pronounced cases a clinical interest. When we come to mediums who invite a trance-like state to deliver their oracles, like Mrs. Piper, or find that Mrs. Curran can deliver herself of the "Patience Worth" phase of her personality more readily by some slight shunting of the mental gears, or find that Mlle. Smith utilizes a séance room as a stage for her dramatic instincts, we know that there is a psychiatric interest here; and we can the more readily anticipate that a similar or at least congenial trend may be common among their following, who obtain a satisfaction from the belief in the occult. The Freudians (that is, rational Freudians—for despite the common rumor to the contrary, there are such) are ready to see in such expression some compensation for the loss of more real satisfactions, or some converted or perverted outlets for wishes that find a harsh repression in the insistent pressure of a hopelessly complex life. In brief, the will to believe in the supernatural, now so conspicuously resurrected, is a symptom of the stresses and strains to which the minds of men have been put in recent years. The addresses of Sir Oliver Lodge have acted as a respectable mode of relief—that explicit act of confession which Freudians recognize as helpful to ingrowing ailments.

Since all movements take their impress from their leaders, we are particularly concerned with the diagnosis of the spokesmen of the cult. Several hundred years ago, the common or even the educated man who had some real belief in witchcraft or in the journeys of witches through space on brooms, would have been normal enough; but today we should find such belief a ground for mental examination. We should assume that a mind adjusted to the thought-habits of today would have set up a resistance to any such beliefs—assuming any trend toward them—so completely adequate as to reject them without effort. Education is the vaccination that confers immunity; but it does not always take. We are then properly amazed that a mind of superior training, especially in scientific discipline, should subscribe to beliefs on evidence that it is difficult to conceive as convincing to any but a prejudiced will to believe. That kind of predilection when strengthened and systematized, becomes akin to an obsession; it approaches the uncertain borderland in which psychologist and psychiatrist venture together in the hope of bringing order out of chaos. That a peculiarly imaginative man of letters like Maeterlinck should find in the occult an additional outlet for his fancies is not strange; that he should accept square-root-extracting horses as genuine, as men of former days accepted the unicorn as a plausible equine specimen, may indicate a lamentable failing in logic, but

nothing more serious clinically. That Dr. Conan Doyle, though he has long left the medical field for more interesting adventures, should be caught in the same web is in a measure surprising. Yet the conclusion that science does confer an immunity to such tendencies to believe personally engaging conclusions and blind oneself to the irrelevance of the evidence, is not really shaken. The very surprise is a token of the exceptional character of the association of physics or medicine with spirits. For here, too, there is dissociation with a wall rather than a cleft between; the physicist and the physician, though they keep house in the same tenement of clay with the believer in spirits, are not cooperative, though the one borrows utensils and recipes from the other.

In the dissemination of such views, the medical mind has alike an interest and a responsibility. The real illumination of these intricate and elusive relations lies in their clinical aspect; for the clinical sense is a cultivated variety of prospecting among human expressions, and diagnosis is merely an expert form of "sizing up" the sorts and conditions of men that impart variety to an otherwise dull existence. The fact that sanity and sanitation are alike the care of the physician indicates that the medical mind has an important social function. From its point of vantage it sees the ensemble of a forest in what to the wanderers in the jungle of human nature is only a tangle of trees. Beliefs also are symptoms that, placed in their setting, compose into "cases" illuminating and illuminated by collateral findings. In considering the sources and significance of the revival of belief in spirits and the increased tendency to credit varieties of belief and indulge in conclusions reminiscent of earlier stages of mental growth, the medical mind contributes not only an interest associated with its responsibility, but also something in the way of a map to plot the phenomena in an intelligible system.

THE CALCIUM METABOLISM OF INFANTS

Ever since present-day methods of modifying cow's milk for the use of infants have come into vogue, questions pertaining to the preferable proportions of the various milk components have been raised. It is probably no exaggeration to say that one could designate eras in which an undue content of protein, fat or sugar, respectively, in milk was in turn held responsible for various types of infant digestive disturbance or malnutrition. Pediatric progress has made it possible today to control with intelligent dietetic procedures each of the factors just referred to, and their rôle is continually becoming more clearly defined.

The mineral nutrients, especially the indispensable element calcium, likewise have not failed to be included in the controversies of infant nutrition. It will be recalled that cow's milk is decidedly richer in calcium

than is the human mammary secretion, the latter containing only about one-fifth as much per fluid volume. The cereal foods so often fed to infants are decidedly deficient in this element. What, then, represents the optimal intake of lime for the artificially fed infant? Is a considerable departure from this detrimental to health? Obviously, a shortage of an indispensable building stone for the skeletal structure is undesirable; but one can also read of a menace from "too much calcium" for infants. Not only is it argued that a liberal intake of calcium may interfere with the alimentary utilization of fats by inducing an excretion of calcium soaps in the stools, but it has also been asserted that a larger intake of calcium leads to a storage in the body which may have injurious effect.

Here, as is so often the case in the medical sciences, scientific data are needed in place of, or at any rate to supplement, empiric conjecture. Holt and his associates have ascertained the average absorption of calcium by breast-fed infants to approximate 0.06 gm. (calculated as calcium oxid) per kilogram of body weight. This may be assumed likewise to be the requirement of infants receiving modifications of cow's milk. As a matter of fact, the average absorption of calcium oxid by healthy infants taking such diets has recently been found to average 0.09 gm. per kilogram.¹ Since, according to these investigations at the Babies' Hospital, New York, infants taking modifications of cow's milk absorbed on the average only about 45 per cent. of the calcium intake, it is necessary to provide for them a minimal intake of about 0.13 gm. of calcium oxid per kilogram to insure even the low average absorption of breast-fed infants. In general, the data correspond with the earlier calculations of Hoobler,² who estimated the requirement by an infant of 7 kg. at from 0.143 to 0.215 gm. of calcium oxid per kilogram of body weight. A pint of cow's milk furnishes nearly 1 gm. of calcium oxid.

According to the recent findings of Holt, Courtney and Fales, the best absorption of calcium was obtained when the calcium intake bore a definite relation to the fat intake, that is, when the food contained from 0.045 to 0.060 gm. of calcium oxid for every gram of fat, and when at the same time the fat intake was ample, not less than 4 gm. per kilogram. An excessive calcium intake apparently did not increase the calcium absorption, the excess being excreted. When the intake of calcium oxid was very low, less than 0.1 gm. per kilogram, the absorption of calcium oxid was less than the normal calcium requirement of the body. The total absorption of calcium oxid varied in general with the weight of the child; the absorption per kilogram did not vary regularly with either the age or the weight.

1. Holt, L. E.; Courtney, A. M., and Fales, H. L.: Calcium Metabolism of Infants and Young Children, and the Relation of Calcium to Fat Excretion in the Stools, *Am. J. Dis. Child.* **19**: 97 (Feb.) 1920.

2. Hoobler, B. R.: The Rôle of Mineral Salts in the Metabolism of Infants, *Am. J. Dis. Child.* **2**: 107 (Aug.) 1911.

It may come as a surprise to those who have been taught the interrelation between calcium and soaps in the stools that this was not found constant in these observations. The excretion of soap was directly related to the type of stool, that is, to the water content and to the reaction of the stool. The excretion of calcium was closely related to the calcium intake. As has been pointed out before, the calcium absorption was much lower when diarrhea was present. Furthermore, the calcium absorption by rachitic infants was much lower than that by healthy infants, and the administration of cod liver oil regularly increased the absorption of calcium, unless diarrhea was present. This is in accord with much accumulated clinical experience.

THE PREVENTION OF FOOD WASTE

One of the many lessons learned from the World War was the value of food conservation. For two years, during the war, the people of this country responded willingly to the efforts of the food administration, and there resulted a saving both of a vast amount of raw food materials and of large sums of money. This was accomplished not only through limitation in the use of various foodstuffs, but also through the elimination and prevention of waste. Today the cost of living has made necessary the institution of more careful methods of buying and using food, but apparently the importance of determining the food waste has been forgotten. When one considers that in a large civil institution the total garbage for one week amounted to 10,000 pounds, a large portion of which was edible food, it is readily seen that the prevention of a part of this food waste would mean the saving of an appreciable sum in dollars and cents.

Prevention of this loss is not impossible, as is shown by Irons,¹ who recently discussed the results of detection and prevention of food waste in some of our hospitals, where "waste of food does not usually result from deliberate intent to destroy, but occurs rather because of failure to recognize waste, and because the system of handling food takes too little account of the needs, feelings and impulses of the ultimate consumer—the patient." Prevention of waste of necessity depends on its recognition. By a system of inspection and classification, the amount, character and source of the garbage can readily be determined, and the necessary waste separated from the unnecessary; and steps may then be taken to reduce or prevent this edible waste. In order to accomplish this, cooperation of the entire personnel is necessary, under adequate supervision of the persons in charge, who must be well acquainted with the patients, knowing many of their likes and dislikes, their needs and their peculiarities. The serving of good food on an attractive tray,

soon after its preparation, and in amounts to suit the individual, will result in marked suppression of the edible waste. One method of accomplishing the latter is by stimulation of friendly competition among the various supervisors in the many wards.

How efficient such methods proved to be is shown by the fact that in one of our large base hospitals the average waste of edible food for each person daily was reduced in four months' time from 1.85 ounces to 0.15 ounce. In a civil hospital of about 400 beds, the total daily garbage was reduced in a short time from 743 to 357.8 pounds. This saving was accomplished mainly through improved methods of handling and serving food in the wards. Similar efforts in the serving of the occupants of private rooms resulted in but little reduction of the total garbage.

If results such as these can be obtained easily and in a short time, certainly there are many hospitals not managed so carefully that could reduce their expenses to a considerable extent by the institution of methods of waste prevention. Such a system of waste control should include, in addition to proper buying, preparation and distribution of food, methods of separation of waste at its source, so that responsibility for it may be determined, and friendly competition between the administration of ward units in the hospital be established. Waste control might profitably be extended to clubs, hotels and private homes, for, while the waste occurs under much different circumstances, it is often even more glaring than in hospitals, and with much less excuse.

Current Comment

CATS AND HUMAN DIPHTHERIA

It is a widely accepted belief that cats may suffer from diphtheria and convey the infection to human beings, but there appears to have been little or no exact experimentation on this question. Several observers, particularly in England, have reported finding true diphtheria bacilli in the throats of cats, but these observations for the most part were made several decades ago. The epidemiologic evidence connecting cats with human diphtheria is circumstantial and does not carry conviction, although some of the instances reported are suggestive of possible contagion. Savage has recently reexamined the whole subject.¹ He obtained uniform and definite results in experiments with young kittens. The implantation of vast numbers of diphtheria bacilli into the nasal cavities were ineffective in setting up any general or local lesions, and the same was true when massive doses were applied by throat swabbing. In point of fact, the bacilli not only failed to infect but survived for only a short period, usually disappearing within twenty-four hours. Savage's experiments not only do not support the view that diphtheria is a naturally occurring disease of cats,

1. Irons, E. E.: Detecting Hospital Food Waste, *Mod. Hosp.* 14: 143 (Feb.) 1920.

1. Savage: *J. Hyg.* 18: 448 (Feb.) 1920.

but suggest that the mucous membranes of the cat are peculiarly unfavorable to the growth and persistence of the diphtheria bacillus. Similarly, the alleged epidemiologic evidence as analyzed by Savage is regarded as quite valueless, and he concludes that the view that cats can suffer from a naturally acquired disease caused by the diphtheria bacillus is entirely without foundation. Consequently there is no ground for believing that cats can serve as carriers of diphtheritic infection.

INTERNATIONAL SCIENTIFIC TERMS

The editor of the *Nederlandsch Tijdschrift* has been appealing to the profession in his country to "purify" the language, and use Dutch terms instead of the foreign terms with which medical writings are now larded. He cites as examples "zenuwverzorging," and "zenuwknopcel," which he would theoretically prefer to have used instead of "innervatie" and "gangliencel," the terms now in vogue. He admits that the latter sound better to the present generation, trained in their use, and states that the efforts for "purification" of the language must have the future in mind, striving for better things in the rising generation. Trenchant comment on his reactionary views is a news item in the same issue relating that a German army physician at Namen in Belgium, during the German occupation, gave a prescription to the Belgian pharmacist to make up which called for "Hydrargyrum chloratum, 50 cg., 10 stück." The pharmacist supposed that mercuric chlorid was meant, and dispensed mercuric chlorid tablets in the legal form, that is, in a brown octagonal bottle labeled *Usage externe* and *Poison*. He wrote on the label besides, *Hydrargyrum chloratum*. . . . *Sublimé corrosif*. The physician assumed that calomel had been dispensed, as he had ordered, and poisoning resulted. Calomel in German is hydrargyrum chloratum, while corrosive mercuric chlorid is hydrargyrum bichloratum. The pharmacist was accused of trying to poison the Germans, and was saved only by the Belgian chief inspector of pharmacies, Dulière, explaining the mistake. In connection with the affair, the latter has appealed for uniformity in the nomenclature of officinal drugs in all lands, and urges the appointment of an international pharmacopeia commission for the purpose. One of the dangerous pitfalls for pharmacists and translators is the term "calcium chloratum," which does not mean "calcium chlorate" but "calcium chlorid" in English.

IMPORTANCE OF CHANGES IN THE PLASMA IN HEMOLYTIC ANEMIAS

The fact that the origin of many forms of anemia is still wrapped in obscurity is indicated by the nomenclature of the disease. We still speak of idiopathic anemias or primary anemias, or else we describe certain forms of anemia by the name of the person who first recognized the particular type. In recent years it has been recognized that there is one special group of anemias associated with destruction of the red blood corpuscles and usually described as the hemolytic anemias. There are, of course, some forms of hemolytic anemia, particularly those varieties due to definite

chemical poisons, the etiology of which is perfectly clear. On the other hand, there is a group of hemolytic anemias, of which the so-called "family jaundice" may be named as an example, wherein the method of action of the factors causing the hemolysis is still obscure. There are several possibilities in the method of production of abnormal blood destruction. It may be due to a normal mechanism acting on abnormally fragile corpuscles. It may be due to a hyperactivity of the normal blood-destroying function of the spleen. It may be due to substances in the plasma which either act as opsonins and render the red cells unusually susceptible to destruction or are themselves directly hemolytic. Gordon Ward¹ has attempted to group together a number of different blood syndromes which at first sight appear quite dissimilar, on the basis that all of them are due primarily to changes in the blood plasma rather than alterations in the blood-forming organs or in splenic blood destruction. The different conditions which Ward attempts to group together are the anemia of the family jaundice type; the anemia with sickle-shaped cells of Herrick; the condition described by Dresbach in which oval or elliptic cells occur in human beings; familial auto-agglutination, and the so-called Malin syndrome, in which anemia and splenomegaly are accompanied by the presence in the peripheral blood of large phagocytic cells. Ward's attempt to group these cases on the basis of similarity as regards their occurrence both as sporadic and as familial diseases, their intermittence in course, the fact that changes in the red cells peculiar to the disease occur and that all show plasma changes, is not entirely convincing. Nevertheless his article is an interesting and stimulating one, and calls attention to the necessity for more extended observations on the blood plasma in the anemias of this type.

AVOCADO FAT

Among the fruits that enter into the dietary of man the avocado, or alligator pear, takes an almost unique place because of its richness in fat. A few fruits may furnish a noticeable quota of real nutrients in the form of starch and, particularly, sugars; thus an ordinary sized banana is rated at a food value of 100 calories or more. But for the most part the fruits that enter into the ordinary regimen, however palatable, wholesome and dietetically valuable they may be, can scarcely be rated as significant sources of energy. The part that they play in nutrition must be estimated from other standpoints. Accordingly, an edible fruit that may exhibit as much as 20 per cent. of fat² in its make-up is worthy of special consideration. It may prove, for example, to become a valued adjuvant to the dietary of the diabetic, from which the carbohydrate content of many common fruits unfortunately excludes them. The possibilities of the avocado have been further promoted by recent investigations³ in California and Washington, both of which agree in assigning an excellent utilization to avocado fat, even

1. Ward, Gordon: Proc. Roy. Soc. Med. (Sect. Med.) 13:1 (Nov.) 1919.

2. Condit, I. J., and Jaffa, M. E.: Bull. 254, California College Agr. Expt. Station, p. 381, 1915.

3. Mattil: Ann. Rep. California Avocado Assn., 93, 1916. Holmes, A. D., and Deuel, H. J., Jr: J. Biol. Chem. 41:227 (Feb.) 1920.

when as much as 124 gm. (about 4½ ounces) a day were consumed. Heretofore the market price of this fruit has prohibited a very widespread use of what now appears to be a nutritious as well as palatable food. The avocado is indigenous to tropical and subtropical regions in the western hemisphere; but it is being cultivated to an increasing extent in Florida and California, and may ultimately become available at more reasonable prices in harmony with the history of some other tropical fruits. Dietotherapy will testify that the enrichment of the dietary with a really palatable source of fat will not be unwelcomed in the management of certain nutritive disorders. Ordinary cream rarely exceeds the avocado in available fat content.

Association News

THE NEW ORLEANS SESSION

Special Arrangements for Golfers

The American Medical Golfing Association announces that entries will be received up to and including April 15 for the tournament to be held in New Orleans on Monday, April 26. The tournament fee (\$1) must be deposited at the time the applicant submits his entry. His handicap must be approved by the handicap committee. Plans are being considered for engaging a summer hotel about a half mile from the golf course for the use of those who desire to be lodged near to the course. In order to obtain a reservation at this hotel, it is advisable to telegraph to Dr. John B. Elliott, Jr., 931 Canal Street, New Orleans, chairman of the golf committee, advising what space you would like to have. The consummation of the plan will depend on the demand for these accommodations. Address enrolment, entries and handicaps to the Secretary of the American Golfing Association, Dr. Will Walter, 1414 Chicago Avenue, Evanston, Ill.

Health Sunday

Governor Pleasant, without proclamation, has designated the setting aside of Sunday, April 25, as health Sunday for Louisiana. This is the Sunday preceding the Annual Session of the American Medical Association in New Orleans.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ILLINOIS

Physician Taken to Prison.—Dr. George W. Alverson, Macomb, who was sentenced to life imprisonment in connection with the death of Lawrence Clugston, is said to have been taken to the state penitentiary, Joliet, March 16.

Municipal Venereal Disease Clinic.—The city council of Peoria, March 2, unanimously provided an ordinance for the establishment of a municipal clinic for the treatment and isolation of venereal diseases. The ordinance provides for a commissioner of the dispensary with a salary of \$3,000 a year and with authority to declare quarantine if certain phases of the ordinance are not observed.

Hospital Notes.—The two-week drive for the Victory Hospital at Waukegan, which has been carried on under the leadership of Hon. C. C. Edwards, came to a close, March 22, with a total contribution of \$300,000. The institution, which will be for soldiers and sailors, will, it is said, be erected within two years.—The contract has been let for

the erection of a new modern hospital for the Cunningham Deaconess Home, Urbana.

Speedway Hospital.—Contracts have been signed turning over the Speedway Hospital to the U. S. Public Health Service. Congress has appropriated \$3,500,000 for the acquisition of this plant and \$1,500,000 in addition will probably be required before the institution is completed. The hospital site includes 320 acres, and the buildings are fire-proof. The main building is 2,040 feet in length, 50 feet in width and four stories in height, and will accommodate between 2,000 and 2,500 patients. The institution will be completed within four months and will be known as the Broadview Hospital.

Chicago

Indicted for Failure to Report Disease.—Dr. Anna Sorna is said to have been indicted by the grand jury, March 18, for failure to report a case of scarlet fever.

Grenfell in Chicago.—Dr. Wilfred T. Grenfell, the medical missionary to Labrador, with Mrs. Grenfell, was a visitor in Chicago last week, and spoke at St. Chrysostom's Church and at the community house in Winnetka, March 21.

Midwives Fined.—Mrs. Wanda Grzybowski was fined \$25 and costs, March 16, for failing to apply silver nitrate to the eyes of a new-born babe, and for failing to report the birth.—Mrs. Kate Kijowska was fined \$15 and costs for a similar offense.

Midwife Freed of Charge.—Mrs. Catherine Schmidt, a midwife, was released from police custody, March 6, after having been held for two weeks in connection with the death of Mrs. Grace D. Frey, who died, February 24, supposedly as the result of a criminal operation.

Health Commissioner to Open Hospital.—Health Commissioner John D. Robertson announces that he will open a new charity hospital, April 1, with accommodation for twenty patients. This hospital will also afford means by which nurses may obtain a training course in three months. This will be conducted in the City School for Home and Public Health Nursing at Fulton and Ada streets. A charge of \$50 will be made for the course.

Robert Koch Society Meeting.—The thirtieth annual meeting of the Robert Koch Society for the Study of Tuberculosis was held, March 25, at the City Club. Dr. Benjamin H. Orndoff spoke on "The Peritoneoscope in Diagnosis of the Diseases of the Abdomen"; Dr. Max Biesenthal discussed the "Use of Sodium Gynocardate 'A' in Pulmonary Tuberculosis," and Dr. James A. Britton spoke on "Occupation and Tuberculosis."

Relief for Suffering Vienna Physicians.—At a luncheon given by the Chicago Medical Society and affiliated organizations, March 15, the sufferings of the wives and families of Vienna physicians were detailed by Dr. Carl Beck, and a committee was appointed to solicit funds. The personnel of this committee is Dr. Rudolph W. Holmes, chairman of the committee of the specialist societies; Dr. Coleman G. Buford, chairman of the branch societies of the Chicago Medical Society; Dr. Effie L. Lobdell, chairman of the Chicago woman's medical societies and clubs, and Dr. Warren Johnson, chairman of the club and social associations. A contribution of \$1,000 by Mrs. Catherine McCormick was announced by the association.

INDIANA

Fire Destroys Sanatorium.—The Mudlavia Springs Hotel and Sanitarium has been completely destroyed by fire. It was established in 1889 and had a capacity for 200 patients.

Venereal Disease Clinic Reopened.—The Fort Wayne Venereal Clinic reopened, February 23, in its quarters on the second floor of the Wayne pharmacy building with Dr. George Rea and a registered nurse in charge.

Public Health Association Election.—At the annual meeting of the Logansport Public Health and Welfare Association, March 9, Dr. John A. Little was reelected president; Mrs. W. J. Ballard and Mrs. Willard Wynne were made vice presidents; Mrs. William A. Gremelspacher was elected secretary, and C. W. Graves, treasurer.

War Histories of Medical Officers Wanted.—The Indiana Historical Commission is now engaged in collecting and compiling the official war history of the state and has entrusted to Post 26, Indiana Branch, the American Legion, the duty of preparing a complete military history of the physicians of Indiana who were in the service. All Indiana physicians who were in service are requested to write imme-

diately to Dr. John R. Newcomb, Commander, Post 26, American Legion, Indianapolis, for proper blanks on which to file their military records.

IOWA

Tuberculosis Clinic Established.—A tuberculosis dispensary clinic has been opened at the community hospital, Grinnell, under the care of Dr. Edwin E. Harris, secretary of the hospital staff. The clinic will be at the disposal of the American Red Cross for use during the tuberculosis survey. —A free child welfare clinic has also been established at the hospital.

Personal.—Dr. Enos D. Miller, Wellman, suffered a fracture of two ribs and other injuries when his automobile backed down a hill and went into a creek, March 11.—Dr. Oscar A. Dahms has been reelected president of the Davenport school board.—Dr. Charles F. Applegate, superintendent of the Mount Pleasant State Hospital, has been appointed medical superintendent of the Norwalk State Hospital, Norwalk, Calif., and assumes his new duties April 1.

KENTUCKY

Hospital Purchases Y. M. C. A.—Madisonville Hospital Association has purchased the Y. M. C. A. building with the idea of making improvements and using it as a hospital.

Suit Settled.—Under terms of a settlement said to be \$1,000, the damage suit for \$30,000 brought by Mrs. Francis Jarnigan against Dr. Alex. C. Foster, Owensboro, has been dismissed.

Personal.—Dr. Thomas D. Moore, Hopkinsville, has been appointed to a fellowship in general medicine with the Mayo Foundation, Rochester, Minn.—Dr. John H. Hamilton, Owensboro, has been appointed full-time health officer of Davies County.

Venereal Quarantine.—A joint federal, city and county quarantine and sanatorium for the women now quarantined in the county jail, has been arranged for at the Louisville City Work House. Reduction in the number of prisoners from 250 before July 1 to fifty at the present time makes this possible. Sixteen to thirty women are constantly under segregation and treatment. Every effort to effect the moral and social regeneration of the women will be made.

Alumni Association Progress.—As a result of a concerted effort to reorganize the Alumni Association of the University of Louisville Medical Department, more than 1,000 graduates have been enrolled. Elaborate plans are being made for a meeting during commencement week, May 31 to June 5, when clinics and entertainments will be held. The clinics will consist of operative clinics at all of the hospitals; bedside clinics and ward walks; demonstrations in laboratory methods of diagnosis, lectures, etc. Over four hundred are expected to attend. The 1920 graduating class will be guests of honor at a banquet.

LOUISIANA

Office Building for Physicians.—A three-story office building to be used exclusively by physicians and dentists will be built at the corner of Prytania and Delachaise streets, New Orleans, across the street from the Touro Infirmary. The building will represent an investment of \$150,000.

Parish Physicians Meet.—At the annual meeting of the Lafourche Parish Medical Society held in Thibodaux, March 15, Dr. Joseph M. Hubert, Allemands, was elected president, Dr. Ewell A. Kleinpeter, Thibodaux, vice president, and Dr. Philip J. Dansereau, Thibodaux, secretary-treasurer.

Personal.—Dr. Alexander R. Crebbin, New Orleans, has sailed from London for New York.—Dr. Elizabeth D. A. Cohen, New Orleans, who has been for thirty years at the Touro Infirmary celebrated her hundredth birthday, February 22.—Dr. Guy A. Darcantel has been appointed a member of the municipal health board of White Castle.

License Refused.—The refusal of the state board of medical examiners to reissue a license to practice to Dr. Antonio B. Jannarelli, New Orleans, is said to have been upheld in the civil district court, March 8, when the physician's suit to compel the board to license him was dismissed by Judge Parker.

Appropriation for Health Work.—The appropriation committee of the Senate has allowed \$200,000 for the rat-proofing work which the U. S. Public Health Service is conducting in New Orleans.—The state council of defense has approved the recommendation of the executive council for the appro-

priation of \$10,000 for the state board of health for use in the campaign against venereal disease and of \$6,000 to combat bubonic plague.

MAINE

Personal.—Dr. Ludovic J. Dumont has been appointed health officer of Lewiston for three years, and the local board of health has been abolished.

Laboratory Soon to Be Opened.—The Aroostook branch laboratory of the state department of health at Presque Isle will soon be opened and will be in charge of a trained chemist and bacteriologist. In this laboratory, tests for typhoid fever, diphtheria, and tuberculosis and also examinations of water will be made.

MARYLAND

Libraries to be Consolidated.—According to plans now under consideration by the authorities at Johns Hopkins University, the libraries of the hospital, the school of hygiene and the medical school will be collected under one roof, in a new library building to be erected in the hospital group.

Osler Memorial Meeting.—A memorial meeting to the late Sir William Osler, regius professor of medicine at Oxford University, and for many years professor of medicine at the Johns Hopkins University, was held March 22, in the civil engineering building, Johns Hopkins University. President Frank J. Goodnow presided, and addresses were made by Henry Van Dyke, D.D., and Prof. William H. Welch.

Personal.—Dr. John M. T. Finney, Baltimore, has been elected an honorary fellow of the Royal College of Surgeons, England.—Dr. James A. Nydegger, Baltimore, in charge of the U. S. Public Health Service in Baltimore, has announced the addition of two physicians to the staff. Dr. George Walker has been appointed consultant neurologist and Dr. George Lane Taneyhill, Jr., neuropsychiatrist.—Dr. Ross McC. Chapman, chief executive officer of St. Elizabeth's Hospital, Washington, D. C., who has been appointed medical superintendent of the Sheppard and Enoch Pratt Hospital, will assume his new duties April 1.

Movement Launched for New Municipal Hospital.—A movement to have Baltimore take over the hospital at Fort McHenry for a general municipal hospital as soon as the War Department gives it up has been launched. Through a petition handed the mayor, the Baltimore City Medical Society has asked that hospital facilities for Baltimore city be provided as quickly as possible and endorsed the acquisition by the city of the hospital at Fort McHenry, if this could be effected. Dr. John M. T. Finney, Baltimore, has been named by the mayor as chairman of a committee to lay the plan before the Secretary of War and the Surgeon-General of the Army. It is said that this transfer could be made by July 1, provided the plan is put through at once. The only obstacle seen is a possibility that the U. S. Public Health Service may need the hospital for its war risk insurance work. This phase of the situation will be looked into by Dr. Finney and his committee. In the event that the Fort McHenry Hospital is acquired by the city, Sydenham Hospital, the city hospital for infectious diseases, will probably be put to other use.

MASSACHUSETTS

Animal Tuberculosis.—At the request of the mayor, of the director of public health and charities and other officials of Lawrence, Dr. E. A. Crossman of the Bureau of Animal Industry, Department of Agriculture, delivered an address, February 25, before the citizens of Lawrence and vicinity on "The Tuberculous Cow, a Menace to Public Health."

Personal.—Dr. George Forrest Martin, Lowell, has been nominated as a trustee of the state infirmary, succeeding Leonard Huntress, deceased.—Dr. William Hall Coon, Haverhill, has accepted a position of health commissioner in Bridgeport, Conn.—Dr. Otis P. Mudge has been elected a member of the board of health of Amesbury.

MICHIGAN

Hospital Burns.—The Red Cross Emergency Hospital at Mount Pleasant was recently destroyed by fire.

Medical Building Association Organized.—Twenty-five physicians and dentists of Flint have incorporated the Flint Medical Building Association for the purpose of erecting a six-story building to be devoted exclusively to the use of members of these professions.

Personal.—Dr. Mary J. Erickson, Newberry, has been placed in charge of the research work of the Iowa state board of health under the recent appropriation of the federal government for investigation in the field of venereal disease and has commenced her work at the University of Iowa, Iowa City.—Dr. Herbert L. Wright, city health director of Lansing, has resigned, his resignation to take effect March 15. He has been appointed director of a department of the state board of health of Texas, with headquarters at Austin.

MINNESOTA

Personal.—Dr. Charles H. Mayo, Rochester, has been elected an honorary fellow of the Royal College of Surgeons, England.—Prof. Frank C. Whitmore of the University of Minnesota has succeeded Prof. Harry A. Curtis as professor of organic chemistry in Northwestern University, Evanston, Ill.

MISSOURI

Dinner to Dr. Bowen.—The roentgenologists of St. Louis gave a dinner, March 23, in honor of Dr. Charles F. Bowen, Columbus, Ohio.

Health Center for Women.—Dr. Eva M. Blake, New York City, arrived in St. Joseph, March 8, and spent a week in cooperation with the Y. W. C. A. in establishing a health center for women. Public meetings of women of all ages were held during the week and intensive health work was done.

Salary Increase.—Taking advantage of an act of the last legislature conferring authority on the governor and state auditor, these officials have increased the salaries of the superintendents of state insane hospitals \$50 a month, and have extended the same increase to the superintendents of the State Sanitarium for the Treatment of Incipient Tuberculosis, Mount Vernon, and the superintendent of the Missouri Colony for Feeble-minded and Epileptics, at Marshall. The physicians at these institutions will also have an increase in salary of \$300 a year.

Personal.—Dr. Eugene Lee Myers, formerly professor of otorhinolaryngology at the St. Louis College of Physicians and Surgeons, is no longer connected with that school.—Dr. Ulysses F. Kerr, Springfield, has been appointed deputy commissioner of health of Greene County.—Dr. Edward E. Mansur, Jefferson City, was operated on, February 21, at St. Mary's Hospital for appendicitis and has made a good recovery.—Dr. Frederick E. Woodruff, St. Louis, has been appointed chairman, and Dr. John Green, Jr., St. Louis, secretary of the consulting staff of oculists of the Missouri Council for the Blind.—Dr. Walter J. Hansen, St. Joseph, formerly county physician of Buchanan County has been appointed deputy state health commissioner.—Dr. G. Canby Robinson, dean of Washington University Medical School, St. Louis, has resigned to accept the position of dean and professor of medicine in Vanderbilt University, Nashville, Tenn.

NEW YORK

State May Buy Radium.—A bill known as the Gibbs bill is before the legislature which authorizes an appropriation of \$250,000 for the purchase of 100 grains of radium. It is understood that the state finance committee will recommend this purchase. The radium will be for use in the State Institute for the Study of Malignant Disease, Buffalo.

Health Insurance Bill in Legislature.—Senator Frederick M. Davenport, Oneida, recently introduced a health insurance and public welfare bill into the legislature. In introducing the bill Senator Davenport said he would not urge its adoption at this session until "the hidden and selfish purpose behind the organized and powerful propagandism and lobbying of certain purely business groups opposed to health insurance could be disclosed." He believes that at present an honest opinion on the merits of the principle cannot be obtained inside the realm of industry. The bill now introduced is somewhat less wide in its scope than that of last year and applies to those employed persons who are defined as industrial workers under the existing workmen's compensation act. Senator Davenport asserts that this bill is not state insurance at all and that there is no state fund.

New York City

Encephalitis Epidemic.—Since January 1, about 175 cases of encephalitis lethargica have been reported in New York. This apparently followed the influenza epidemic and has caused forty deaths since the beginning of the year.

Harvey Society Lecture.—The eighth of the series of Harvey Society Lectures given by Dr. William McKim Marriott, professor of pediatrics in Washington University, St. Louis, at the New York Academy of Medicine, March 27, is on "Some Phases of the Pathology of Nutrition in Infancy."

Department of Public Charities Changes Name.—Mayor Hylan has approved the bill recently passed by the legislature amending the city charter so that the department of public charities hereafter will be known as the department of public welfare. The reason for this is that the name "public charities" had come to be a burden to the department. Commissioner Coler of this department announces that, owing to the influence of prosperity, prohibition and wood alcohol, the maintenance of the municipal lodging house is no longer necessary.

Nightingale Centennial.—Among the features of the celebration to commemorate the hundredth anniversary of the birth of Florence Nightingale will be the inauguration of a campaign to recruit 30,000 young women in training schools for nurses and the award of a prize of \$500 for the best three act play by an American author based on incidents in the life of Florence Nightingale. Pageants, public meetings, and formal ceremonies will be held on the anniversary date, May 12, in which nursing organizations, women's clubs and colleges will cooperate.

NORTH CAROLINA

Personal.—Dr. John M. Manning, Durham, has been appointed state medical examiner for the Modern Woodmen of America.

State Society Meeting.—The annual meeting of the Medical Society of the State of North Carolina will be held in Charlotte, April 20 to 22, under the presidency of Dr. John P. Munroe, Charlotte.—The North Carolina Hospital Association will hold its annual meeting in Charlotte, April 19.

County Hospitals Advocated.—The bulletin of the University of North Carolina in a recent issue carries a report to the university club strongly advocating a system of county hospitals owned and operated at public expense as a state-wide system, logically urging that only by public support through systematic taxation can the hospitals be freed from the everlasting grind and strain for funds adequate for maintenance, and also that only by such a system can all the people and property be caused to carry their proper burden of the care of the sick.

OHIO

Hospital Donated to Town.—Charles F. Kettering, a millionaire inventor and manufacturer of Dayton, has donated a hospital to Loudenville.

Hospital Plans Approved.—The city council of Youngstown, March 1, approved the original plans of the Youngstown Municipal Hospital to cost \$620,000.

Scarlet Fever in Cleveland.—Dr. Harry L. Rockwood, city health commissioner of Cleveland, announces that there are about 400 cases of scarlet fever scattered about the city, and that the disease is epidemic in the state and especially in Cincinnati, Columbus and Toledo.

Fires in Epileptic Hospital.—A fire, March 9, destroyed one cottage and the dancing pavilion of the Ohio Hospital for Epileptics, Gallipolis. Eight patients are dead and two, who were injured, are expected to die. Twenty-five patients were in the cottage at the time. March 10, the hospital was again set on fire. No clew to the incendiary has been found.

Health Commissioners Organize.—A permanent organization of the county health commissioners of the northern district of Ohio was made at a meeting held in Canton, March 10, at which ten of the thirteen counties of the district were represented. Dr. K. N. Schwartz, Lisbon, was made president of the new organization and Dr. Chester M. Peters, Canton, secretary. The association will meet once a month.

Academy Activities.—March 5, Dr. George Walker, Baltimore, formerly colonel, Urological Division, M. C., U. S. Army, delivered an address before the Academy of Medicine in Cleveland on "Abolition of Venereal Disease by Medicinal Prophylaxis."—February 20, Dr. Carl A. Hedblom, Rochester, of the surgical division of the Mayo Clinic, delivered an address on "Treatment of Chronic Empyema."—At the March 19 meeting of the academy, Dr. Harry G. Sloan, Cleveland, spoke on "Gas Cysts of the Intestine," and Dr. John Phillips, Cleveland, on "The Effort Syndrome."

Personal.—Dr. Roy L. Pierce, Mount Gilead, has resigned as health commissioner of Morrow County, as no funds were available to carry on the work.—Dr. John H. Elias, Murray City, has been elected health commissioner of Hocking County.—The home of Dr. Paul J. Hanzlik, Cleveland, assistant professor of pharmacology in Western Reserve University was entirely destroyed by fire, February 11. Dr. Hanzlik and his wife sustained burns and other injuries from which they are recovering.—Dr. Presley C. Ramsey, Alliance, has been appointed city health commissioner.—Dr. Charles R. Keyser, Van Wert, has been elected health commissioner of Van Wert County.—Dr. William L. Dick, Columbus, will continue as acting city health officer and medical inspector of Columbus.—Dr. John T. McVey of the staff of the Ohio Hospital for Epileptics, Gallipolis, has been made a member of the staff of the Massillon State Hospital.—Dr. Roy K. Evans, McGuffey, has been selected health commissioner of Hardin County.—Dr. H. H. Pansing, Miamisburg, has been appointed health commissioner of Montgomery County.

OKLAHOMA

Shortage of Physicians.—Dr. Arthur A. Lewis, Oklahoma, state health commissioner, reports a serious shortage of physicians in the small towns in Oklahoma.

Personal.—Dr. James S. McFadin, Hollis, was struck and injured by a cab, March 3.—Dr. Virgil Berry, a pioneer practitioner of Okmulgee, announces his retirement from active practice.—Dr. William A. T. Robertson has been elected president of the Ponca City Medical Association.

Hospital Unveils Tablet.—The Sisters of St. Francis of St. Anthony's Hospital at Oklahoma City have recently unveiled a bronze tablet in memory of Major Robert Lord Hull and Capt. Frank Bruner Sorgatz, both of whom lost their lives in the military service during the influenza epidemic last winter.

PENNSYLVANIA

Personal.—Dr. Iden M. Portser, Greensburg, has resigned as a member of the state board of health.

State Health Organization Planned.—William J. Crookston, Pittsburgh, associate chief medical inspector of the department of health, outlined a plan at a recent conference of the field force of the department, whereby the state will be organized by counties for health education and preventive work and emergency service.

Physicians Indicted.—Dr. J. Newhall Kirk, Philadelphia, directing head of the "Associated Doctors," and two other physicians, Dr. Guy V. Payne and Dr. Grant F. Hartzell, are reported to have been indicted, January 27, charged with conspiracy to defraud. Dr. Payne is reported to have been indicted also for practicing medicine in Maryland without a license. The report states that Dr. Kirk is accused also by the Philadelphia authorities of violating the Pennsylvania law prohibiting the advertisement of cures and treatment for specific diseases and that on this charge he was held in \$5,000 bail.

Philadelphia

Personal.—Dr. Lawrence F. Flick was awarded the Laetare medal for 1920 by the University of Notre Dame, Ind., March 13. The honor is regarded as one of the highest that can be conferred on any Catholic layman in America and is for "distinctive service in behalf of God, church and country."—Dr. Thomas A. Shallow, chief physician of the medical department of the municipal court, will hereafter sit with the judge to give the benefit of an expert medical opinion at the regular Wednesday juvenile court hearings.

Medical Co-Eds Opposed.—On the ground that valuable parts of the courses have to be omitted lest they offend the sensibilities of the women, students and professors at the Medical School of the University of Pennsylvania are demanding the exclusion of co-eds from medical class rooms. A petition presented to Provost Smith and Dean Pepper has been referred to the board of trustees for action. The students and some of their instructors say women who desire to study medicine should go to a women's medical college.

UTAH

Personal.—Dr. James M. Elliott has been named as sanitary inspector and member of the board of health of Ogden, succeeding Mr. George Shorten.—Dr. Willard Christopher-

son has succeeded Dr. Samuel G. Paul as head of the city board of health of Salt Lake City.

VIRGINIA

Personal.—Dr. William F. Reasner, Portsmouth, who has served as health director of Norfolk County, has gone to Minneapolis to become assistant director of the health department of that city.—Dr. C. Curtis Hudson, Richmond, has been appointed chief health officer for Richmond.

Surgeon at Penitentiary.—The house committee on prisons and asylums has reported favorably a bill providing for a surgeon-general at the state penitentiary with a salary of \$3,000 a year, whose time is to be devoted entirely to prison work. He will exercise supervision over all surgical and medical work at the state prison, state farm and convict road camps.

Health Campaign Opened.—Halifax County last month launched a twelve-month sanitation unit under the charge of Dr. Walter A. Newman as field director. One half the expense of this work will be borne by the county and the remainder jointly by the state department of health and the international health board.—The result of the year of intensive health work just closed in Fairfax County has been so successful that the county has determined to continue the work at its own expense and has appointed Dr. Edward L. Flanagan, Fairfax, to continue as field director.—Albemarle County is preparing for a similar health crusade.

CANADA

Personal.—Dr. Arthur Doull, Halifax, D.P.H., has been appointed provincial inspector of health for Nova Scotia.—Dr. Allan C. Rankin, Edmonton, director of laboratories of the provincial department of health, Alberta, has been made dean of the medical faculty of the University of Alberta, Edmonton, Alta.—Dr. John J. Ower, Montreal, has been appointed professor of pathology in the medical faculty of the University of Alberta.—Dr. Arthur C. Jost, Guysborough, has been appointed provincial medical officer of health for the eastern health division of Nova Scotia.—Dr. John P. Brown, Toronto, D.P.H., has received an appointment in the dominion government quarantine service and has been assigned to duty at the quarantine station, St. John, N. B.

GENERAL

Anesthetists to Meet in New Orleans.—The American Association of Anesthetists will hold its eighth annual meeting at the Hotel Grunewald, New Orleans, April 26 and 27, under the presidency of Dr. Albert H. Miller, Providence, R. I. The annual dinner will be held on the evening of April 26.

Proctologists to Meet.—The twenty-first annual meeting of the American Proctologic Society will be held in Memphis, Tenn., April 22 and 23, under the presidency of Dr. Collier F. Martin, Philadelphia. The society will be the guest of Dr. John L. Jelks, and of the Memphis and Shelby Medical Society with headquarters at the Hotel Gayoso.

Medical Intern Wanted.—The United States Civil Service Commission announces that an open competitive examination will be held for the position of medical intern in St. Elizabeth's Hospital, Washington, D. C., with a salary of \$1,200 a year and maintenance. Appointees whose services are satisfactory may be allowed a temporary increase of \$20 a month, granted by Congress.

Biography of Sir William Osler.—Dr. Harvey Cushing, Peter Bent Brigham Hospital, Boston, has been requested by Lady Osler to prepare a biography of Sir William Osler. He will be grateful to any one who will send him either letters or copies of letters, or personal reminiscences, or information concerning others who might supply such information. It is requested that a copy of all letters, no matter how brief, be sent, and that the dates be supplied whenever possible. If originals are forwarded they will be promptly returned by Dr. Cushing.

Coal Mine Fatalities.—Complete report of fatal accidents in coal mines during 1919 indicates a reduction of 273 fatalities, or 10.58 per cent., as compared with 1918, according to a statement issued by the United States Bureau of Mines. The decrease was noted mainly in accidents from mine cars and locomotives and in surface accidents, while increases are recorded in accidents due to gas and dust explosions and also explosives. While the actual number of deaths is con-

siderably less than in 1918, the ratio on the basis of tons of coal mined and number of working days is slightly higher.

Anesthesia Research.—At the meeting of the board of governors of the National Anesthesia Research Society held in Cleveland this month, it was voted that the annual convention of the society be held at Pittsburgh during the week of October 4, in conjunction with the meeting of the Interstate Anesthesia Association and the Medical Society of the State of Pennsylvania. The governors voted \$200 to be apportioned in prizes for the best papers on research in anesthesia, and a committee was also appointed to prepare forms for uniform anesthesia charts.

Fraternity Favors Public Health and Sanitation Department.—At the recent convention of the Alpha Kappa Kappa Medical Fraternity, at Chicago, the following resolution was passed:

WHEREAS: The various industries, professions and labor of these United States have received official recognition, by the establishment of representatives in the President's cabinet; and

WHEREAS, The medical profession is not in any way recognized as a whole, but considered a part of the various departments; be it therefore:

Resolved, That the twentieth convention of Alpha Kappa Kappa Medical Fraternity does go on record as being in favor of the creation of a department of public health and sanitation, with a representative on the President's cabinet. Be it further:

Resolved, That a copy of this resolution be sent to the President of the United States, and the President of the American Medical Association.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Chicago, and Evanston, Ill., Hospital, each \$25,000 by the will of Frank H. Armstrong.

Presbyterian Hospital and New York Hospital, New York City, each at least one million dollars by the will of Charles D. Thompson.

Middlesex Hospital Medical School, London, \$100,000 for the endowment of a chair of physics by Messrs. J. B. and S. B. Joel.

Presbyterian Hospital, Philadelphia, \$40,000 for the endowment of a bed available after the death of his mother and two sisters, by the will of Robert Wilson.

Howard University, Washington, D. C., a gift of \$250,000 for endowment fund by the Rockefeller Foundation.

Milwaukee Associated Charities, Milwaukee Children's Hospital, and Marquette University, Free Medical Dispensary, Milwaukee, each one third of the annual cash income of \$10,868 from the estate of Helene M. Cudahy.

Vanderbilt Clinic of the College of Physicians and Surgeons and Presbyterian Hospital, Tuberculosis Clinic, New York City, each \$9,000; New York Association for Improving the Condition of the Poor,—Home Hospital, New York City, \$8,000; Loomis, N. Y., Sanatorium, and Trudeau, N. Y., Sanatorium, each \$3,000; Stonywald Sanatorium, Lake Kashaqua, N. Y., \$2,000; Hospital and House of Rest for Consumptives, Inwood, N. Y., \$1,000, and Henry Street Settlement for Tuberculosis Nursing, New York City, \$500, donations made at the annual meeting of the trustees of the East River Homes Foundation.

FOREIGN

Personal.—Prof. Hugo Fuchs, professor of anatomy at the University of Königsberg, has been transferred to the University of Göttingen, succeeding Professor Merkel.

Honorary Degree Conferred on Hoover.—The University of Cracow, Poland, has conferred the honorary degree of Doctor of Medicine on Mr. Herbert Hoover for services rendered to Poland.

Osler Institute to Be Established.—At a public meeting held March 7, at Oxford University, it was decided to establish the Osler Institute of General Pathology and Preventive Medicine as a permanent memorial to the late Sir William Osler.

Appropriation for East African Hospital.—The United States consul at Lourenco Marques, Portuguese East Africa, reports that the local government has authorized a special loan of \$194,660 for electrotherapy, hydrotherapy and radiotherapy at the Hospital Miguel Bombarda of that city.

Second Centennial of Death of Lancisi.—A meeting in honor of the memory of the Italian physician and anatomist, G. M. Lancisi, who died in 1720, was held recently at Rome in the Lancisi library. Senator Marchiafava delivered the main address. Professor Lancisi is known by the nerve of Lancisi and his numerous published works, including the history of five great epidemics in Italy.

Seeks Relief for Germans.—Dr. O. Edward Janney, Baltimore, representing the American Friends Service Committee for the relief of suffering children in Germany is organizing citizens' relief committees to raise money for this work. One million dollars worth of supplies have already been sent to Germany by the committee and in the next three months

\$12,000,000 will be needed. The committee has already thirty relief workers in Germany.

Red Cross in Charge in Esthonia.—The American Red Cross Commission at Reval, Esthonia, has been invested with authority to take any measures, political or economic, to stamp out the epidemic of typhus fever raging there, to put the country under strict quarantine, to interdict travel and to enforce any other measures which may be deemed necessary by Lieut.-Col. Edward J. Ryan, chief of the commission.

Practice in Norway.—The *Deutsche medizinische Wochenschrift* states that the medical faculty of the University of Christiania has recommended that foreign physicians be allowed to practice in Norway provided that they locate at points where there is a pressing demand for physicians. The journal adds, "This seems to indicate that there is a scarcity of medical men in the rural districts of Norway."

Death of Morelli.—Prof. Enrico Morelli of Rome, who with Baccelli and Durante founded the *Policlinico* twenty-seven years ago, died February 13. He gave up most of his practice and his teaching to devote his energies to this leading medical journal which has always taken a high stand in science and in promoting the best interests of the profession. He was editor and manager both of the weekly practical section and of the monthly medical and surgical sections.

LATIN AMERICA

Influenza in Mexico.—The authorities announce that the influenza epidemic has come to an end. The number of deaths this year was 1,649, while last year there were more than 3,000.

Department of Health in Santo Domingo.—According to a measure approved by the military authorities, a department of public health and charities has been created in Santo Domingo to have complete charge of these matters.

Encephalitis Lethargica in Mexico.—There has been a case of encephalitis lethargica in Mexico City. The patient was taken as insane to the asylum, where the diagnosis was made. Other cases have occurred at Monterey and Laredo.

Sanitation Works in Peru.—A bill now pending in the Peruvian senate empowers the president to enter into contracts for the execution of the work necessary to provide Lima and thirty other cities with safe water, drainage, garbage disposal works, etc. The improvements contemplated involve an expenditure of several millions of dollars.

Quarantine Station in Colombia.—A recent law appropriates 30,000 pesos for the construction of a quarantine station and a hospital in the port of Riohacha. Eight thousand pesos are also provided to build a water works system, and an annual appropriation of 5,000 pesos for each milk station that may be established in the capitals of any of the different departments.

New Medical Journal in Central America.—Under the editorship of Dr. Rodolfo Espino, there has been founded in Managua, Nicaragua, a new medical journal, entitled *Revista de la Asociación Médica Centroamericana*. Its avowed purpose is to promote the union of the medical profession of the five Central American countries, and a medical congress, which will be held, Sept. 15, 1921, on the anniversary of the independence of the five republics.

Deaths in the Profession.—Dr. Manuel Pérez, director general of the public health service of Paraguay, delegate to various international medical congresses, and professor in the medical school at Asunción while it existed, aged 39.—Dr. F. C. de Sá Ferreira, the dean of the psychiatrists in charge of the insane of the Rio de Janeiro district, aged 77.—Dr. Antonieta Dias Morpurgo, a leading woman physician and pediatricist of Rio de Janeiro, aged 49.—Dr. G. A. de Carvalho, also of Rio, aged 70.

Personal.—Dr. Bernardo Etchepary, a prominent physician of Uruguay, who came to this country to conduct scientific studies on behalf of the Board of Health of Uruguay, has returned to his country, accompanied by his wife and son. While here, Dr. Etchepary visited the most important eastern cities.—Prof. P. Pereira, professor of histology at the University of Bahia and director of the *Gazeta Médica da Bahia*, was recently elected honorary member of the Academia Nacional de Medicina, on the fifty-third anniversary of his entering on his professional career.—Dr. J. Moreira da Fonseca of Rio de Janeiro was elected by the same Academia to the post left vacant by the death of Dr. Miguel Pereira. His address was on suprarenal insufficiency in influenza.

Government Services

Aeroplane Ambulances

Orders have been received to redesign and construct four DH-4 aeroplanes into models for ambulance purposes. Each machine will have accommodation for pilot, and two patients set in ship horizontally on Stokes Navy litters.

Health Conditions in the Army

The health of the troops continues excellent. A few cases of influenza appear, but in decreasing numbers. Measles is increasing in a few stations, twenty-two cases being reported from Camp Upton and fifteen new cases from Camp Knox. The admission and noneffective rates are as low as expected under normal conditions. Health conditions among troops in Germany and Siberia remain about the same.

Construction Work in Hospitals

In House Bill 8819, signed by the President, February 28, which provides for the purchase of property and certain construction for military purposes there appears a clause that "no provision contained in army appropriation act for June 11, 1919, be deemed or construed to prohibit the expenditure of the appropriation of \$350,000 made therein for the purchase of land contiguous to the Walter Reed General Hospital, 26.9 acres more or less, and the acquisition of so much of said acreage for the amount appropriated as the Secretary of War in his discretion may deem to be in the public interest."

Citation for Service

Col. Charles F. Morse, M. C., U. S. Army, has been awarded the Distinguished Service Cross for exceptional meritorious and distinguished services "as director of the veterinary corps, by displaying exceptional energy, zeal and good judgment he organized and administered with marked success a veterinary service capable of meeting every need in home territory and in the theater of operations. He provided effective means for the treatment of sick and wounded animals and for the prevention of disease among well animals, for the inspection of meat and dairy products used by the army, and, through establishment of schools of instruction, placed the personnel of the veterinary corps of the Army on a high plane of efficiency."

Citations by King for Medical Corps

The king of England has ordered certificates issued in the following form to Cols. Christopher C. Collins; George W. Crile, Cleveland; Harvey Cushing, Boston; Mathew A. DeLaney; Robert U. Patterson; Harry L. Gilchrist; James D. Fife; Richard H. Harte, Philadelphia, and Lieut.-Col. Lucius L. Hopwood, M. C., U. S. Army, and to Miss Julia Stimson, superintendent of the nurses of the Medical Department, U. S. Army:

The war of 1914-1918. U. S. Army Medical Corps (name of recipient) was mentioned in a despatch from Field Marshal Sir Douglas Haig, K.T.G.C.B., G.C.V.C., K.C.T.E., dated Nov. 7, 1917, for gallant and distinguished services in the field. I have it in command from the king to record his majesty's high appreciation of the services rendered.

WINSTON S. CHURCHILL, Secretary of State for War.
War Office, Whitehall, R. W., March 1, 1919.

Medical Officers Under New Army Bill

According to the *Army and Navy Register* the Army reorganization bill, as it passed the House, contained a provision in the matter of promotion from a single list which, unless amended, would practically destroy the medical department. "In bringing medical officers into the single list for the purpose of equalizing promotion, which is the purpose of this new method of advancement, officers of the medical corps are placed on the list immediately below other officers of two years' longer service. This concession in the way of constructive service is altogether inadequate," says the *Register*, "and can only have a detrimental effect upon medical corps personnel. The provision in the Senate bill on Army reorganization, on which measure no action has been taken beyond reporting it from the military committee, is

much more satisfactory and it is probable that when the two rival measures get into conference the Senate provision will be agreed upon, inasmuch as Messrs. Kahn and Anthony of the House military committee, who will be members of the conference, have given assurance that the defects in this respect in the House bill will be corrected."

Increased Appropriation Asked for Public Health Service

The Secretary of the Treasury, D. F. Houston, in a formal letter to Congress has asked that the appropriation for the Public Health Service for the fiscal year 1921 be increased from \$8,000,000 to \$10,000,000. The reasons set forth for this increased expenditure are stated in the following letter of the acting Surgeon-General addressed to the Secretary of the Treasury.

Sir:—I have the honor to request that a letter be sent to the Speaker of the House of Representatives, asking that the estimate for appropriation for medical, surgical, and hospital services and supplies for war-risk insurance patients and other beneficiaries of the Public Health Service, etc., for the fiscal year 1921 be increased from \$8,000,000 to \$10,000,000.

The estimate for \$8,000,000 was made last August by the Surgeon-General and at that time it was thought it would be sufficient for the purpose, but since that time the number of patients has greatly increased and it has been found necessary to ask Congress for \$10,000,000 to take care of this increased number of patients during the present fiscal year. The sum of \$6,000,000 has already been appropriated, and the second urgency deficiency bill contains an item for the provision of an additional \$4,000,000. There was a deficiency of \$246,000 on Feb. 1, 1920, so that the whole of this additional \$4,000,000 will undoubtedly be needed.

In view of the above fact, I ask that Congress be requested to grant this additional \$2,000,000, in order that the sick and disabled discharged persons from the military and naval forces may be given proper care and treatment during the fiscal year 1921.

Respectfully,

J. C. PERRY,
Acting Surgeon-General, U. S. Public Health Service.

MEDICAL OFFICERS, U. S. NAVY, RELIEVED FROM ACTIVE DUTY

CALIFORNIA	NEW MEXICO
San Leandro—Leahy, W. R.	Albuquerque—Davis, C. C.
ILLINOIS	NEW YORK
Chicago—Soloway, S. S.	Brooklyn—Skeer, J.
KANSAS	New Brighton—Robillard, G. L.
Wichita—Hazzard, L. R.	SOUTH CAROLINA
MARYLAND	Greenwood—Burnett, A. D.
Annapolis—Frank, J. R.	VIRGINIA
MICHIGAN	Norfolk—Frothingham, E.
Alto—Reese, J. A.	Richmond—Denton, A. L.
Grand Rapids—Corey, P. V.	Simpson, W. A.
	Williams, E. G.

Foreign Correspondence

PARIS

March 4, 1920.

Meeting of French Medical Journalists

The general meeting of the Association professionnelle des journalistes médicaux français was held recently at the Faculté de médecine de Paris under the presidency of Dr. Doumer, professor at the Faculté de médecine de Lille.

After the reading of the reports of the general secretary and treasurer, the assembly adopted the following code of ethics: 1. The members of the association shall afford each other mutual aid. 2. No members of the association shall agree to do the work of a colleague for less money than such colleague received. 3. A member of the association shall not accept the position of a colleague without having first informed such colleague and having learned the latter's reasons for leaving the position. 4. If a member of the association is appointed managing editor of a journal, or is requested to choose the members of the editorial staff, he shall give preference to the members of the association. 5. If the relative merit of articles by members of the association is the same as that of others, preference should be given to members of the association in the matter of abstracts and personal mention. 6. Members of the association will mention, whenever possible, the works of the association and of its individual members, and the events concerning the members of the association, in the journals on which they col-

laborate. 7. Every case at law between two members of the association shall be first taken up and discussed by the family council of the association before it is brought before any other jurisdiction. 8. In the case of litigation of a professional nature between a member of the association and an outsider, the association shall examine into the cause, and if it shall recognize the justice of its member's case, it shall give him its moral support, and, if the circumstances seem to warrant it, such financial assistance as may seem proper; and if it shall decide on such a course it shall hold a special meeting to decide what aid shall be given the members in question. 9. The foregoing articles must be accepted by every applicant for membership in the association.

The Crowded Condition of Paris Hospitals

During the war, the mobilization of a large number of physicians made it necessary for many people to have recourse to the hospital who could otherwise have been cared for at home. This circumstance gave them an opportunity of discovering that the hospitals, from the standpoint of medical skill, care and hygiene, offered all that could be expected. All classes of Paris society thus came in contact with the consultation service afforded by the hospitals. They learned that in the hospital one is better cared for than anywhere else, and also that such care does not cost them a sou. Consequently, they have continued to rely on the hospital, and the deplorable result has been that there is no longer sufficient room in the hospitals for the really needy.

The maternity hospitals are especially crowded. In order to remedy this condition, the prefect of the department of the Seine has adopted a series of measures with the view of giving special aid to women who will consent to be confined at home, such as the assumption by charitable organizations of the fee charged by midwives and the fixing of the ordinary medical fee at 20 francs a visit. Furthermore, M. Mesureur, director of the Assistance publique, has announced that he has been able to provide 300 more beds for confinement cases.

Number of Wounded Still Under Treatment in the Military Hospitals

In reply to a request for information received from a member of the Chamber of Deputies, the minister of war states that the number of demobilized wounded soldiers and sailors still under treatment in the military hospitals, under date of Jan. 15, 1920, was 7,133.

Measures to Promote an Increase in the Birth Rate

Adolphe Chéron, deputy of the department of the Seine, has presented a bill which is intended to promote an increase in the birth rate. Among the measures proposed I may mention the surveillance of lying-in hospitals; the repression of abortion and birth control, relieving physicians and midwives, under certain circumstances, from the obligations of professional secrecy, and aid to large-sized families.

Reorganization of Night Medical Service

In a previous letter (*THE JOURNAL*, March 20, 1920, p. 815), I referred to the reorganization of night medical service in Paris. The Syndicat des médecins of the department of the Seine, which had offered to take part in the competitive examination held in connection with the reorganization of this service, is protesting vigorously because the proffered collaboration of the Syndicat was systematically ignored by the administration.

Typhus Fever in Paris

A slight epidemic of typhus fever has been reported in the Saint-Sulpice seminary, where refugees have been lodged; among others, a number of Polish workmen. The epidemic seems now to have been brought to an end. The Assistance publique has given instructions that delousing in the hospitals shall be done with great care. In this connection, Senator Gaudin has asked the minister of hygiene what measures have been taken to protect France against typhus fever, which is raging in Poland and the Ukraine. The minister of hygiene has replied that, according to the most recent information, there is no epidemic of typhus fever in the countries of central Europe immediately contiguous to our borders. There were a few sporadic cases in Germany, but this did not constitute a menace to us. In Poland, however, it was true that an epidemic existed. There was danger of its being brought to France by emigrant Polish workmen if strict measures to prevent it were not taken. Besides the prophylactic measures taken in Poland when the workmen leave there, vigorous sanitary measures are carried out by the bureau of immigration when they arrive in Toul, which is especially,

or one may say, exclusively, affected by Polish immigration. Owing to an understanding reached by the civil and military sanitary authorities, the bureau of immigration at Toul is abundantly provided with the necessary sanitary apparatus. The prophylactic measures taken consist of a medical examination, vaccination, shower baths, disinfestation, disinfection, and isolation of suspects.

Increase in Medical Fees

Owing to the increased cost of living, medical fees in Paris have been doubled. The Syndicat médical of Montpellier has gone even further and has decided to triple former rates, the fee for a simple office consultation being 15 francs; emergency calls or consultations on Sundays and holidays, 30 francs; night calls, 50 francs; special distance charge, 3 francs per kilometer. The foregoing rates represent the ordinary charges and do not affect famous consulting physicians nor specialists.

LONDON

Feb. 28, 1920.

Incidence of Influenza

The Ministry of Health has issued a long circular on influenza, stating that the disease is epidemic in many large American cities, but the proportion of severe or fatal cases is smaller than in 1918-1919. Our vital statistics show a slight increase, but the increments are so small and the uncertainty of classification so great that no unfavorable inferences can be drawn from these fluctuations. Notified pneumonia has increased, but here again it is not possible to say how much of this may be due to seasonal variations. There are no indications of epidemic influenza in factories, but some large schools in southern and southwestern England are affected. The disease is epidemic in a few localized communities, and the type is similar but less severe than that of 1918-1919. There is no evidence of a pandemic comparable to that occurring in America and certain parts of Europe. The ministry again draws attention to the warning previously given and the measures advised (as referred to in previous letters).

Reconstructing the Army

Many bitter complaints have been made of the obstruction to urgently required reforms offered by the higher command of the army, perhaps the most conservative body among a conservative people. But, above all, we are practical, and can learn in the dear school of experience. So the reformers had their way in the end, and the British army became as perfect and as modern a fighting machine as it was possible to make. There is now no backwardness in profiting by the lessons of the war. The war office has issued a memorandum showing how these have been applied in every branch of the service. The prewar establishment of officers of the medical corps was 1,068. On the date of the armistice the strength of officers was 14,461, and in addition 1,524 civil physicians were employed. There are at present employed 3,338 officers and 322 civil physicians, and this number is continually being reduced in conformity with the reduction in hospital population. The prewar establishment of other ranks was 3,895. The strength of warrant officers, noncommissioned officers and men of the medical corps on the date of the armistice was 131,361. This number was supplemented by the employment of 18,660 voluntary aid detachment, general service women in hospitals, and other formations in the United Kingdom, while large numbers of such women were also employed in France, Saloniki and Malta. The strength of other ranks, Feb. 8, 1920, was 18,412. There were in addition, employed in hospitals, etc., in the United Kingdom 4,771 voluntary aid detachment, general service women. Considerable numbers of the latter are still being employed in the Rhine army, Black Sea, and Malta. The medical section of the territorial army will be reorganized on its prewar basis, with such additions and alterations as the war has shown to be necessary.

DENTAL CORPS

Sound teeth in the soldier are of prime importance. An army dentally fit will have reduced rates of sickness and invaliding. A proposal has therefore been put forward for the formation of a dental corps to consist of 110 officers and 132 of other ranks (mechanics and orderlies) for which it is hoped approval will be obtained.

PATHOLOGY AND HYGIENE

New directorates of hygiene and pathology have been established within the army medical department, each with a director and deputy at headquarters, and assistants and deputy assistants in the important commands and districts at

home and abroad. It will now be possible for officers who have devoted their professional lives to the study and practice of these highly technical subjects to continue to work in them throughout their service, instead of, as has hitherto been the case, having to abandon them to take up ordinary administrative duties on attaining a certain seniority. Promotion to the highest rank is now open to such specialists.

VACCINE DEPARTMENT AT THE ARMY MEDICAL COLLEGE

The work of the vaccine department during the war developed enormously. More than 33,000,000 doses of vaccines against typhoid, cholera, dysentery and other conditions were prepared during the last five years and dispatched for the use of troops serving in all parts of the world. Among our great armies in France, from the beginning of the war till the end of 1918, there were only 7,423 cases of typhoid and paratyphoid, with 266 deaths. In the much smaller Boer War there were 57,684 cases, with 8,022 deaths. In the French army, before it was fully protected by inoculation, there were, from the commencement of hostilities till the end of October, 1915, 95,809 cases, with 11,690 deaths. Subsequent to that period their figures are more comparable with our own. Recent German statistics of mortality in their armies during the war mention 7,751 deaths from typhoid.

HOSPITAL ACCOMMODATION IN THE UNITED KINGDOM

The total number of beds of all kinds at the armistice was 364,133; Feb. 6, 1920, 43,497; the number closed since the armistice has been 320,636. The numbers in hospitals in the United Kingdom at the time of the armistice were 316,000; May 1, 1919, 112,000; Feb. 1, 1920, 28,000. At the time of the armistice there were also 8,619 patients on special leave, and 4,648 in billets. These were slightly ill or convalescing patients who were disposed of in this way owing to the pressure on the hospital accommodation.

CHEMICAL WARFARE

We must unfortunately continue our studies of what is known as chemical warfare. No nation has renounced the use of poison gases as the result of the peace conference. There are nations whose word we could not respect if they did renounce it. It is essential to study the offensive side of chemical warfare if we are to be prepared for defense. The great importance of adequate defensive appliances arises from the fact that preparations for the offensive use of gas can be made in peace time with great secrecy, and may have far reaching and even fatal results in the early stages of war.

Eugenics

At the Galton anniversary, Arthur Keith delivered the lecture. He said that while Charles Darwin, who was Galton's cousin, and those who championed the cause of evolution turned their attention to unveiling man's past, Sir Francis Galton devoted his life and genius to discover how the machinery of evolution which had raised man to his present estate could be used for his further advancement. Galton discovered the ladder whereby, if a nation were so minded, it could climb to a higher estate of both mind and body. The rungs of that ladder he fashioned out of the laws of heredity. Under nature's conditions, and amid the circumstances of modern life, we tried to climb blindly, and we stumbled, fell and suffered. Galton showed that the ascent could be made sure, easy and merciful. In his earlier days he was, perhaps, inclined to invoke the aid of the state and to resort to compulsory measures; but, as his knowledge grew and his experience ripened, he realized that mere artifices invented by statesmen could affect only the stragglers on the ladder—the main mass of the nation would be left untouched. The nation which would raise itself on the ladder must raise itself not piecemeal, but as a whole; every grade and section of a people must be made to move upward at the same time. Galton saw that to effect such a desirable change—one which would give the nation which adopted it an advantage over all its neighbors or rivals—the heart of the people must first be captured and a social avalanche set in motion. He was convinced that if a knowledge of his ideals, his aims and his discoveries could be made to sink into and leaven the minds of the people, the upward movement he longed to initiate would at length begin. That could be done only by education—education in the laws which govern the transmission and building up of the best qualities of the brain and body.

Removal of a Children's Hospital to the Country

The importance of country life to the sick is becoming more and more recognized. Though many hospitals maintain convalescent homes in the country, it has not happened

before that a hospital has been moved bodily to the country. This has been done in the case of the Alexandria Hospital for Children with Hip Disease, an institution established in London many years ago.

Threatened Strike of Physicians

The tendency of a portion of the profession to adopt militant labor methods has been shown by the formation of the Medico-Political Union, a body registered as a trade union which, however, has not been able to attract more than a few members. Another example of the tendency has occurred in Ireland. The physicians in the Castle Comer Union have threatened to strike unless the guardians accede to their demand for increased salaries. At a large meeting of physicians in the neighboring town of Kilkenny, a resolution was passed expressing sympathy with these medical officers in their determination to cease work and refuse to attend any patient until their demands are acceded to. Medical trade unionists in England have not gone this length, for they have always explained that they have no intention of striking against the sick, but merely against working for the state when the terms are unsatisfactory, so that in case of a dispute their services would be available, though not under government arrangements.

BUENOS AIRES

Feb. 18, 1920.

Visit of Drs. Mayo and Martin

From February 4 to 8 Drs. W. J. Mayo and F. H. Martin, who came here from Chile, and went afterwards to Montevideo, were in Buenos Aires. Their trip had for its object to cultivate closer relations between the American College of Surgeons and the surgeons of South America. The School of Medicine of Buenos Aires designated Professors Arce, Chutro, Viñas and Palma to accompany our guests, who, while they were here, made a rather rapid survey of four of the local hospitals. While at Buenos Aires, Dr. Mayo called attention to the poor organization of the nurses' service in the municipal hospitals and the inadequate protection against flies.

Typhus Fever in Chile

In connection with several articles by Argentine physicians, the director-general of public health of Chile, Dr. Ramon Corvalán Melgarejo has published a report on the present epidemic of typhus fever. There are no cases of the disease in the northern provinces as far as Aconcagua, the disease having disappeared from Andes, Limache, Calera, San Antonio, La Victoria, Rengo, Peumo, San Carlos, Yungay, Florida, Coronel, Temuco and Conbarbala. There has been a recurrence of the epidemic at Valparaíso, with more than 160 cases. At San Fernando, Cunacó, Concepción, Talcahuano, Cabrero, Mulchen and Imperial the epidemic has decreased very much. At Santiago there were at one time as many as 580 hospital cases with an average of thirty-four cases a day, but the epidemic there has also decreased very much, there being now only 163 hospital cases with an average of ten new patients a day.

The enforcement of preventive measures, similar to those adopted last year, on the railroad station at the frontier, has been recommended to the National Department of Public Health.

Bubonic Plague

The increase of plague in all South American countries has also revealed itself in Argentina. The National Department of Public Health has put in force deratization measures at Buenos Aires, and has decided to establish disinfection stations in all the ports of the republic. The province of Santa Fe, which has suffered most from the disease, has been divided into three zones with headquarters at Santa Fe, Cordoba and Casilda, in charge, respectively of Drs. Ruiz Huidobro, Beuchetrit, and Bascary, who will carry out anti-rat measures throughout that district.

Marriages

HERBERT RANDOLPH UNSWORTH to Miss Elizabeth Elmer McCall, both of New Orleans, March 12.

THOMAS LAWTON, Hinsdale, Ill., to Miss Elizabeth A. Stage of Davenport, Iowa, March 16.

EDGAR CHRISTY, Hastings, Iowa, to Mrs. Elsa Riedelsberger, at Omaha, March 3.

Deaths

Philip Coombs Knapp, Boston; Harvard Medical School, 1883; aged 61; a member of the American Urological Association and its president in 1895, and a specialist in neuropathology; a fellow of the Royal Society of Medicine; visiting physician to the division of nervous diseases of the Boston City Hospital since 1885, and to the Boston Dispensary from 1886 to 1888; instructor in diseases of the nervous system in his alma mater from 1888 to 1913; consulting physician to the Massachusetts State Hospital for Insane Criminals since 1895; trustee of the Boston Insane Hospital from 1897 to 1902; died in the Boston City Hospital, February 22.

Clinton Tremaine Purdy, Moncton, N. B.; University of the City of New York, 1884; aged 60; formerly mayor of Moncton; coroner of Westmoreland County in 1897; president of the Moncton Medical Society in 1898; formerly president of the College of Physicians and Surgeons of New Brunswick; a member of the medical council of New Brunswick and alderman for the city of Moncton; died, January 12.

Richard Henry Lee Bibb ☉ Saltillo, Coahuila, Mexico; Texas Medical College, Galveston, 1872; Bellevue Hospital Medical College, 1877; aged 71; for many years chief surgeon of the Mexican National Railroad, of the American Hospital, Mexico City, and of the national lines of Mexico; president of the International Medical Association of Mexico in 1911; died, March 2, from influenza.

Emile Schmoll, Livermore, Calif.; University of Basle, Switzerland, 1896; aged 47; a member of the Medical Society of the State of California; lecturer on internal medicine in Cooper Medical College and visiting physician of the San Francisco City and County Hospital; died, March 10, at a sanatorium in Livermore, from a nervous breakdown.

William Charles Hassler ☉ San Francisco; Cooper Medical College, San Francisco, 1892; aged 51; health officer of San Francisco; a specialist in public health; assistant professor of hygiene and sanitary science in Hahnemann Medical College of the Pacific, San Francisco; died, February 11, from influenza.

Wade Doster, Capt., M. C., U. S. Army, Coldwater, Kan.; Jefferson Medical College, 1907; aged 39; on duty at Camp Furlong, N. M.; was shot and killed by his wife at Columbus, N. M., March 9, while she was defending herself from an attack made by him, in which she received a bullet wound of the breast.

Charles Sackett Starr, Rochester, N. Y.; College of Physicians and Surgeons in the City of New York, 1869; aged 75; a member of the Medical Society of the State of New York; physician to the Monroe County Jail in 1879 and 1880, and coroner's physician from 1880 to 1884; died, March 8.

Henry Wells Horn ☉ San Francisco; Cooper Medical College, San Francisco, 1897; aged 48; a member of the American Ophthalmological, Rhinological and Otological Society; a well known ear, nose and throat specialist; died in St. Francis' Hospital, March 5, from influenza.

Hugo William Wightman ☉ Scottsbluff, Neb.; Northwestern University Medical School, Chicago, 1901; aged 47; for ten years professor of anatomy in the John A. Creighton University, Omaha; surgeon to the Brazil Hospital; died in a hospital in Omaha, March 11, from influenza.

George W. Simpson, Mapleton, Pa.; Jefferson Medical College, 1876; aged 75; a member of the Medical Society of the State of Pennsylvania; for ten years local surgeon to the Pennsylvania system; a veteran of the Civil War; died in his apartment, March 6.

Henry Howard Wynne, Oklahoma City; College of Physicians and Surgeons in the City of New York, 1880; aged 60; a member of the Oklahoma State Medical Association; a specialist on diseases of the eye, ear, nose and throat; died about February 26.

Stafford Baker Smith ☉ New York City; College of Physicians and Surgeons in the City of New York, 1905; aged 36; a member of the American Urological Association; surgeon, U. S. P. H. S.; died, February 29, from lobar pneumonia.

Benton Knox Jones, Kenton, Ohio; Eclectic Medical Institute, Cincinnati, 1889; aged 62; president of the Ohio State Medical Association in 1897, and for two terms coroner of Hardin County; died, March 6, from erysipelas.

Angus McD. Ford, Montreal; Bishop's College, Montreal, 1898; F.R.C.S., L.R.C.P. (Edin.), who had been on military duty with the Canadian Army Medical Corps since the beginning of the World War; died at sea, recently.

Herbert James Hamilton, Toronto; University of Toronto, 1886; L.R.C.P. (Lond.), 1886; aged 55; once president of the Ontario Medical Association; died in Wallesley Hospital, Toronto, from pneumonia, February 5.

Townsend F. Dickinson, Cincinnati; Miami Medical College, Cincinnati, 1881; aged 61; president of the Cincinnati Pension Examining Board during President Cleveland's administration; died, March 5.

Derrick G. Barkalow, Adel, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1884; aged 62; once president of the Dallas County Medical Society; died about March 5, from cerebral hemorrhage.

Joseph Alexander Gendron, Ware, Mass.; Victoria University, Cobourg, Ont., 1888; aged 57; for several terms a member of the board of health of Ware; died in the Ware Hospital, March 7.

Edgar D. Seaman, Los Angeles; College of Physicians and Surgeons in the City of New York, 1884; aged 64; a member of the Medical Society of the State of California; died, February 20.

Donald Hoff Hoover, Cleveland; Western Reserve University, Cleveland, 1919; aged 26; an intern in the Lakeside Hospital, Cleveland; died in that institution, March 2, from pneumonia.

John Alva Allen, Medical Lake, Wash.; Trinity Medical College, Toronto, 1904; aged 42; captain, M. C., U. S. Army, and discharged, March 3, 1919; died, March 5, from pneumonia.

Abraham Lincoln Garver, Roaring Spring, Pa.; Jefferson Medical College, 1883; aged 61; a member of the State Industrial Board since 1916; died, March 2, from angina pectoris.

Charles Richard MacKimmie, Norfolk, Va.; Maryland Medical College, Baltimore, 1903; aged 51; died, February 12, from disease of the stomach and liver following influenza.

John J. McCarthy, Williamsport, Pa.; College of Physicians and Surgeons, Baltimore, 1896; died in the Renovo, Pa., Hospital, March 5, from pneumonia following influenza.

William Wickham Horton, Unionville, Conn.; University of the City of New York, 1879; aged 64; a member of the Connecticut State Medical Society; died, February 19.

Robert Joseph Dwyer, Toronto; University of Toronto, Ont., 1891; M.R.C.P. (Lond.), 1902; associate professor of clinical medicine in his alma mater; died, January 26.

Lachlin MacPherson, Antigonish, N. S.; Tuft's College Medical School, Boston, 1907; aged 44; died in St. Martha's Hospital, Antigonish, January 1, from pneumonia.

Sheldon B. Hewett ☉ Girard, Kan.; University Medical College of Kansas City, Mo., 1904; aged 42; died, February 26, from cardiac embolism following influenza.

Edward S. Quinn, Kirksville, Mo.; Marion-Sims Medical College, St. Louis, 1896; aged 59; a member of the Missouri State Medical Association; died, February 24.

David Jenkins McCaa, Ephrata, Pa.; Jefferson Medical College, 1867; aged 74; died, March 10, from injuries received in a runaway accident in February.

Sam W. Adams, Rockland, Texas; University of Memphis, Tenn., 1894; aged 53; died in the Hotel Dieu, Beaumont, Texas, February 16, from septic meningitis.

Robert Kirkwood Robinson, Belair, Md.; University of Maryland, Baltimore, 1859; aged 87; a veteran of the Civil War; died, March 9, from senile debility.

James M. Robinson ☉ Guthrie, Ky.; University of Louisville, Ky., 1882; aged 64; once mayor of Guthrie; died, February 26, from carcinoma of the stomach.

Henry A. Phillips, Chicago; Bennett Medical College, 1871; aged 75; a member of the Illinois State Medical Society; died, March 7, from pneumonia.

Abram Markle Blackburn, Steubenville, Ohio; Medical College of Ohio, Cincinnati, 1864; aged 77; a veteran of the Civil War; died, March 5, from uremia.

Peter Lafayette Adams, Dawson, Texas; St. Louis College of Physicians and Surgeons, 1898; aged 77; died at the home of his daughter in Dawson, February 9.

Albert Harris Daniels, Mitchell, S. D.; University of Michigan, Ann Arbor, 1864; aged 79; for thirty-four years a practitioner of Mitchell; died, March 4.

☉ Indicates "Fellow" of the American Medical Association.

William John Chambers, Calgary, Alta.; University of Toronto, Ont., 1902; was instantly killed in a railway accident at Sudbury, Ont., recently.

William Edward Everett, Brownsburg, Ind.; University of Michigan, Ann Arbor, 1869; aged 74; died, February 16, from pneumonia following influenza.

James R. Adams, Fort Worth, Texas; Medical College of Ohio, Cincinnati, 1841; aged 97; died at the home of his son in Fort Worth, February 27.

James Patrick Lane ☉ Cascade, Iowa; John A. Creighton Medical College, Omaha, 1906; aged 40; died in Mercy Hospital, Dubuque, February 29.

David H. Clay Scott, Montgomery, Ala.; Meharry Medical College, Nashville, Tenn., 1895; aged 49; died, Dec. 25, 1919, from carcinoma of the liver.

Charles Baker Reid ☉ Van Wert, Ohio; Fort Wayne, Ind., College of Medicine, 1881; aged 63; died, March 1, from cerebral hemorrhage.

Osmund Eells Goodrich, St. Joseph, Mich.; Hahnemann Medical College, Chicago, 1866; aged 75; died, February 27, from senile debility.

Almon L. Brown ☉ Milwaukee; Rush Medical College, 1894; aged 54; a specialist in internal medicine; died, Dec. 1, 1919, from diabetes.

Joseph Mickler, Tampa, Fla.; University of Tennessee, Nashville, 1914; aged 33; a roentgenologist; died, March 5, from typhoid fever.

James Polk Von Stein, North Liberty, Iowa (license, years of practice, Iowa, 1887); aged 68; a practitioner since 1877; died, March 1.

James Edward Harper, Assumption, Ill.; Chicago Homeopathic Medical College, 1899; aged 50; died, February 21, from sarcoma.

Russell Hathaway, Wellington, Ohio; Homeopathic Hospital College, Cleveland, 1876; aged 72; died, February 27, from neuritis.

John H. MacDonald, Chicago; Jenner Medical College, 1898; aged 64; died, March 16, from carcinoma of the mouth and throat.

Louis William Knight, Baltimore; University of Maryland, Baltimore, 1866; aged 75; a noted numismatist; died, March 16.

James Louis Gilbert, El Paso, Texas; Baylor University, Dallas, Texas, 1911; aged 33; died, February 20, from influenza.

Louis E. H. Duffel, Napoleonville, La.; Tulane University, New Orleans, 1900; aged 44; died in New Orleans, February 28.

Edward Gomer Davies, Yankton, S. D.; Rush Medical College, 1879; aged 74; died, March 8, from valvular heart disease.

John T. McGrath, Scranton, Pa.; University of Pennsylvania, Philadelphia, 1896; aged 45; died, March 4, from heart disease.

William J. Brand, Detroit; University of Buffalo, N. Y., 1886; aged 63; died, February 29, from locomotor ataxia.

Warrick Barnett, Borden, Ind.; University of Louisville, Ky., 1911; aged 37; died, February 8, from pneumonia.

James C. Fish ☉ Beaver Falls, Pa.; Jefferson Medical College, 1884; aged 58; died, March 1, from pneumonia.

Charles Naylor Abbott, McKinnie, Texas; University of Alabama, Mobile, 1875; aged 69; died, February 20.

Charles W. Tower, Marshfield, Ore.; Willamette University, Salem, Ore., 1870; aged 79; died, February 26.

John Abram Hunt, Taunton, Mass.; Boston University, 1893; aged 65; died, February 13, from carcinoma.

Oscar M. Waterman, San Francisco; University of Leipzig, Germany, 1893; aged 63; died, February 27.

Edward F. Christian ☉ LaCrosse, Wis.; Rush Medical College, 1906; aged 36; died, February 25.

Joseph M. Ferguson, Sedalia, Mo.; University of Louisville, Ky., 1869; aged 80; died, March 6.

Correction.—Dr. Guy Marshall McDowell, Bay City, Mich., advises us that, notwithstanding the notice of his death which appeared in THE JOURNAL, March 13, he is "still alive and going strong." The Dr. McDowell who died was Dr. Guy McDowell who formerly lived in Bay City, but had been practicing in Detroit for about twenty years.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

PLATT'S CHLORIDES

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report on "Platt's Chlorides." It also declares the preparation inadmissible to New and Nonofficial Remedies because its composition is uncertain and indefinite and because the claims made for it are exaggerated and misleading.

W. A. PUCKNER, Secretary.

"Platt's Chlorides," marketed by Henry B. Platt, New York, is sold as a disinfectant and germicide. Only incomplete and contradictory statements have been made in regard to its composition. Many years ago (about 1899) the composition of Platt's Chlorides was given as "The Chlorids of Zn 40 per cent., Pb 20, Ca 15, Al 15, Mg 5, K 5." The statement that the preparation contained 20 per cent. of lead chlorid, is interesting in view of the fact that lead chlorid is soluble in water at ordinary temperatures to the extent of less than one per cent. In a booklet, also issued a number of years ago, the following "Formula of Platt's Chlorides" was given:

"A saturated solution of Metallic Chlorids combined in the following proportions:

"Sol. Zinc Chlorid	40 per cent.
"Sol. Aluminum Chlorid	15 per cent.
"Sol. Lead Chlorid	20 per cent.
"Sol. Calcium Chlorid	15 per cent.
"Sol. Magnesium Chlorid.....	5 per cent.
"Sol. Potassium Chlorid	5 per cent."

The label on a bottle purchased in 1911, describes Platt's Chlorides as:

"A Highly Concentrated Solution of the Chlorids of Aluminum, Calcium, Lead, Zinc, etc."

The label of a bottle purchased in 1919, reads:

"Contains Inert Material: Water 84.0%. Sodium Chlorid 4.8%. Calcium Chlorid 0.3%."

This statement is obviously made to meet the requirements of the federal Insecticide Act. This law requires either that the identity and the amounts of potent ingredients in disinfecting preparations be declared or else that the percentage of the inert ingredients of such preparations be given. The omission from the label of all statements with regard to the potent ingredients of the preparation and the absence of such a statement in recent advertising matter suggests either that the older statements about its composition were false or else that the composition has been changed.

Tscheppe published (Pharmaceutische Rundschau 8:109, 1890) an analysis of Platt's Chlorides which has been quoted in other publications as indicating the composition of the preparation. He reported that he found each quart of the preparation to contain aluminum sulphate 6 ounces, zinc chlorid 1½ ounces, sodium chlorid 2 ounces, calcium chlorid 3 ounces.

Some years ago (about 1911) the company made the following statement relative to the germicidal power (phenol co-efficient) of Platt's Chlorides:

"... for some time the carbolic acid co-efficiency of our output has been from 2.5 to 4.3; the average being about 3; namely about three times stronger than pure carbolic acid."

In 1912, the U. S. Public Health and Marine Hospital Service reported (Bulletin 82, Public Health and Marine Hospital Service, p. 69) that the phenol coefficient of a sample of Platt's Chlorides was so low that it could not be determined and also that the sample was found to contain some mercuric chlorid. In 1913, the North Dakota Agricultural Experiment Station reported (Bulletin, July, 1913, p. 292), that

Platt's Chlorides contained principally zinc chlorid, also some aluminum chlorid, calcium chlorid, and traces of mercuric chlorid. The phenol coefficient, determined by the Hygienic Laboratory method, was found to be 0.05.

The preceding suggests that the composition of Platt's Chlorides had been changed (without notice to the consumer) and that it had been fortified by the addition of mercuric chlorid. Years ago part of the advertising of this product was a testimonial from a health official which declared that, for disinfection, "bichlorid of mercury is useless in disinfecting sputum or discharges from the bowels, being rendered inert by the albumen present" and it lauded Platt's Chlorides as devoid of such drawbacks.

RECENT ANALYSES OF PLATT'S CHLORIDES

To determine the present composition of Platt's Chlorides and to compare it with that sold formerly, the A. M. A. Chemical Laboratory has made an analysis of a specimen purchased in 1919 and also of one that was purchased in 1911 and since kept unopened in the files of the Council on Pharmacy and Chemistry. The following table contains the results of these analyses (all quantities given are Gm. per 100 c.c.):

	1911 SPECIMEN	1919 SPECIMEN
Color	Colorless	Straw Color
Odor	None	None
Specific Gravity at 25 Cc.	1.1229	1.1313
Total Solids (residue at 100 Cc.)	16.49	18.33
Chlorid (Cl ⁻)	7.60	10.74
Sulphate (SO ₄ ⁻⁻)	1.11	.16
Aluminum (Al ⁺⁺⁺)	.22	.90
Calcium (Ca ⁺⁺)	.19	.13
Zinc (Zn ⁺⁺)	5.11	3.93
Lead (Pb ⁺⁺)	.046	Traces
Mercury (Hg ⁺⁺)0086
Sodium (Na ⁺)	1.01	1.39

These quantities transposed to hypothetical combinations would indicate that Platt's Chlorides has the following composition:

	1911 SPECIMEN	1919 SPECIMEN
Aluminum Sulphate	1.32	.18
Aluminum Chlorid	.07	4.29
Calcium Chlorid	.54	.37
Zinc Chlorid	10.66	8.19
Lead Chlorid	.06	Traces
Mercury Chlorid	.....	.0116
Sodium Chlorid	2.57	4.81
Hydrogen Chlorid	.43	None

In the past, the advertising has suggested, more or less directly, that, as chlorinated lime (bleaching powder) may be made to give off chlorin gas which disinfects, so the air in a room may be disinfected by evaporating Platt's Chlorides. Thus the label of the 1911 specimen contains the following:

"FOR STORE ROOMS, Refrigerators, and Closets, keep a sponge saturated with the pure liquid in a saucer on an upper shelf."

On the label of the 1919 specimen, the statement reads:

"REFRIGERATORS AND STOREROOMS—As a disinfectant wash regularly with one part Chlorides to eight of water. As a deodorant, keep in an open vessel a sponge or cloth saturated with the Chlorides full strength."

That the owner of Platt's Chlorides really believes that the vapors of the preparation have disinfecting properties is seen from a letter over the name of Henry B. Platt printed in the New York Tribune in 1916. This read, in part:

"... by keeping in a dish or saucer on radiators Platt's Chlorides diluted one-half, the hot solution will evaporate and purify the air, thus destroying the grip germ which is the cause of all the trouble."

From the analysis of Platt's Chlorides, it is evident that when the preparation is evaporated, water vapor only escapes.¹

1. It is well known that when a solution of mercuric chlorid in water is evaporated, mercuric chlorid passes off with the water vapors, but under any condition the amount is but a fraction of the whole. As in Platt's Chlorides other metallic chlorids are present, the formation of complex mercuric compounds which is bound to have occurred, should retard or prevent the volatilization of mercuric chlorid. That this actually occurs was confirmed by the following experiment: When 1 gm. mercuric chlorid was dissolved in 1 liter of water and the solution distilled, the distillate contained a very small amount of mercury. Then the experiment was repeated after adding sodium chlorid to the solution to simulate the conditions in Platt's Chlorides. In this case no mercury was found in the distillate. Even were all the mercury in a bottle of Platt's Chlorides volatilized in a room 10 by 12 by 9 feet, this would be equivalent to only about 1/500 grain mercuric chlorid per cubic foot.

Whatever disinfecting or germicidal action the preparation may possess is exercised only when the solution is brought in direct contact with the substance to be disinfected.

The aluminum and zinc salts present may be useful as deodorants but they are not effective as germicides. The presence of mercuric chlorid in a concentration of 1 to 10,000 is hardly to be considered as materially increasing the efficiency. The directions recommend the use of a mixture of 1 part of Platt's Chlorides to 10 parts of water for rinsing the hands, and a mixture of 1 part to 4 parts of water for the disinfection of discharges. It is further stated that 1 quart makes 2 gallons sufficiently strong for general use. It is evident that such dilutions decrease considerably the feeble germicidal action of the original fluid.

Correspondence

"GOLAY'S MODIFIED WASSERMANN REACTION"

To the Editor:—In the description in Queries and Minor Notes of the Golay modification of the Wassermann reaction (THE JOURNAL, Feb. 21, 1920, p. 543) you say the "complement is obtained from a rabbit." I take it that this is an error and should be "amboceptor." In the titration of the amboceptor I presume a known negative active human serum is used. It is this feature that has attracted my attention. The hemolytic factor is completed with the active native human complement. In a series of experiments over a period of ten months I have found that the quantity of human complement varies in different individuals, and in some it is absent. The estimation of the quantity of complement in a given serum is based in general on the Hecht modification of the Wassermann reaction, with modification of details adaptable to the human system. The reagents used were 2.5 per cent. human red cell suspension, one unit of amboceptor, and beef heart antigen cholesterinized to the extent of 0.072 per cent. in dilutions of 1:10. The serum to be tested should be fresh, but I have found complement still active after traveling 400 miles in the mail in moderately warm weather.

To determine the complementary value of a serum, six tubes are set up in the front row. Each tube receives 0.1 c.c. of active serum and one unit of amboceptor. The first receives 1 c.c. of salt solution, and each succeeding tube 0.1 c.c. less than the preceding tube. In the first tube is placed 0.1 c.c. of human red cells, and in each succeeding tube 0.1 c.c. more, so that the last tube will receive 0.6 c.c. of cells. These tubes are then incubated for one hour at 37 C., during which time they are repeatedly shaken. At the end of this period that tube is sought in which there is the greatest amount of complete hemolysis. If the last tube shows complete hemolysis, which rarely happens, 0.3 c.c. is used in the actual test for that particular serum. Two rear tubes are set up at the time the series of six are prepared; one receives 0.1 c.c. of the same active serum, 0.1 c.c. of antigen, and 0.7 c.c. of salt solution; the other tube receives 0.1 c.c. of serum and 0.8 c.c. of salt solution; both are then placed in the refrigerator for a period of three or four hours. At the end of that period these tubes receive the required amount of red cells, one unit of amboceptor and salt solution to 1.3 c.c. If the particular serum contains sufficient complement to hemolyze 0.6 c.c. of cells so that 0.3 c.c. is used in the test, no salt solution is added. The control tube always clears. If the maximum amount of cells is used as determined in the series, for instance, 0.6 c.c., the control tube often will not clear with negative serum. If complete hemolysis does not occur in any of the series of tubes, it signifies no complement.

My purpose of describing this test is to state that it is unsatisfactory as compared with the Wassermann reaction, using the antihuman system. When applied in this manner the human complement apparently is not as easily fixed as is the guinea-pig complement as used in the Wassermann reaction. The use of guinea-pig red blood cells to determine the

hemolytic index of human serum, and with this means determine the syphilitic factor of the serum, gives a much higher percentage of positive results than the test described above, but the guinea-pig system does not give any higher percentage of positive results than the Wassermann using the antihuman system.

JOHN FUNKÉ, M.D., Atlanta, Ga.

LOW TYPHOID DEATH RATE OF RICHMOND, VA.

To the Editor:—I wish to express my gratification in connection with what you have to say concerning Richmond's 1919 typhoid record (*THE JOURNAL*, March 6, 1920, p. 672). I am glad that you agree that our rate of 3.7 is quite an extraordinary one for a Southern city.

It is gratifying to see in Table 6 that Richmond is the only city south of the Potomac and Ohio rivers appearing in the first rank, and that even those Southern cities which appear in the second rank come in at the tail end, while the third rank and fourth rank are composed entirely of Southern cities. In other words, if the cities of over 100,000 population are ranged in the order of their typhoid death rates, Southern cities, with the exception of Richmond, are found entirely at the bottom.

Your statement that "it is evident that the maintenance of a low typhoid death rate is not to be taken as a matter of course without the exertion of constant vigilance by the local health authorities" is certainly true. I know that in the case of Richmond our constantly decreasing rate has been due to constant effort and watchfulness. This year we shall have a hard job holding down to last year, and, in fact, there is little, if any, chance of our duplicating our 1919 rate. Unfortunately, our first three cases this year all terminated fatally, and besides this, we have had one more death, so that, although only seven cases have been reported this year, we have already had four deaths, against a total of six in 1919.

As an illustration of the desire on our part to have accuracy at all cost, I may state that the death certificate in the case last mentioned came in to us with influenza and septicemia given as the cause of death. The blood specimen taken on the last day of illness, however, showed the presence of the typhoid bacillus. We had considerable difficulty in persuading the physician to change his diagnosis to typhoid fever, but eventually accomplished this object.

When I entered office in 1906, every physician with an average practice treated at least half a dozen typhoid cases every summer, and our busiest practitioners counted it a poor year when they did not have twice that many cases. In recent years we have had only about one case to every three or four physicians, and scarcely this number in private practice. One result of this, I fear, is going to be that the average physician will not see enough typhoid fever to become reasonably skilful in its handling, and this may result in an increased case fatality. This can be obviated only by hospitalization of all typhoid cases, a course which has many other things to commend it.

E. C. LEVY, M.D., Richmond, Va.

Director of Public Welfare.

"HITHERTO UNDESCRIBED SIGN IN DIAG- NOSIS OF LETHARGIC ENCEPHALITIS"

To the Editor:—I was much interested in the description by Dr. Thomas F. Reilly (*THE JOURNAL*, March 13, 1920, p. 735) of a hitherto undescribed sign in lethargic encephalitis. This sign (the abnormal involuntary twitching of muscle bundles) was apparently not present in last year's epidemic, but has been noted with regular frequency in the cases coming under observation this year. There are apparently three types of influenzal invasion of the central nervous system which have, as a distinguishing feature in common, these myoclonic movements: One type is associated with a diffuse neuralgic syndrome, toxic delirium and a fatal termination. Another type presents only myoclonic movements and a neu-

ralgic syndrome which proceeds to an early recovery. The third type presents the foregoing symptoms, which after a variable time become merged into a pure syndrome of lethargic encephalitis. There is no doubt that all these phenomena are simply the expression of the same infectious agent.

Dr. Reilly considers the term "lethargic" unfortunate, as the condition of the patient belies the designation. In this connection I would consider the term "encephalitis" equally misleading. I refer particularly to those cases which present only diffuse myoclonic movements and neuralgic symptoms. As stated before, this type of case reveals no evidence of "encephalitis" on close scrutiny. Lethargic encephalitis is becoming a sort of junk-heap on which every infection with neural manifestations is being dumped. In the interest of scientific and clinical accuracy, a revision of the nomenclature would indeed be welcome.

CHARLES ROSENHECK, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SYRUP OF THYME

To the Editor:—A short time ago I received a sample of "Pertussin" and used some in an obstinate case of bronchitis with excellent results. I have since received a catalog from a pharmaceutical firm, which advertises syrup of thyme. I have searched for a formula to make my own syrup of thyme, but have not been able to find one. Will you publish one?

E. F. BENNER, M.D., Salfordville, Pa.

ANSWER.—The subjoined formula yields a product very similar to "Pertussin" in taste, flavor, composition, and probably in activity as well:

Fluidextract of thyme	15 c.c.
Glycerin	15 c.c.
Syrup	to make 100 c.c.

The original German preparation contained 1.5 gm. of sodium bromid in each hundred cubic centimeters, and this might be added to the foregoing formula with advantage, so far as action is concerned. However, a sample of "Pertussin" purchased in the open market in the United States failed to respond to tests for bromids.

As fluidextract of thyme is not official, this formula is presented as furnishing an acceptable preparation:

Thyme, in No. 60 powder..... 100 gm.

Moisten with a mixture of:

Water	25 c.c.
Alcohol	15 c.c.
Glycerin	10 c.c.

After standing five hours, pack in a percolator. Exhaust with a menstruum of alcohol, 1 volume, and water, 3 volumes. Reserve the first 85 c.c. of percolate. Concentrate the weak percolate to a soft extract and dissolve in the reserved portion. Make up to 100 c.c. by addition of a mixture of alcohol, 1 volume, and water, 3 volumes.

Other aromatic expectorants, such as terebene, terpin hydrate or creosote, might be expected to have similar but greater effect in chronic bronchitis.

Care of the Eyes.—To read or study when tired or drowsy is to strain the eyes to a dangerous degree. Avoid evening study whenever possible. If you are using your eyes by artificial light, be sure the light does not shine directly into the eyes, and try to have it come from behind and to the left side so as to avoid the harmful glare. Never sit with the gas or electric light directly in front of you. If electric light is used, the bulbs should be wholly or partly frosted. The best form of artificial illumination for the eyes is the so-called indirect system, where the light is reflected from the ceiling and walls of the room in a soft glow and where all glare is entirely hidden by an opaque shield.—W. M. Carhart, *Pub. Health*, Michigan, September, 1919.

Medical Education, Registration and
Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 11-12. Sec. Regular Bd., Dr. I. J. Stout, Brinkley. Sec. Eclectic Bd., Dr. C. E. Laws, Fort Smith.

COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. Edgar P. Copeland, the Rockingham, Washington.

IDAHO: Boise, April 6. Commissioner, Hon. Robert A. Jones, Boise.

IOWA: Iowa City, March 29-31. Sec., Dr. Guilford H. Sumner, Capitol Building, Des Moines.

LOUISIANA: New Orleans, May 4. Sec., Homeo. Bd., Dr. F. H. Har- denstein, 702 Machesa Bldg., New Orleans.

MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thos. McDavitt, Lowry Bldg., St. Paul.

MONTANA: Helena, April 6. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEVADA: Carson City, May 3. Sec., Dr. Simeon L. Lee, Carson City.

NEW MEXICO: Santa Fe, April 12-13. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 13-14. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 1-2. Sec., Dr. Byron U. Richards, State House, Providence.

WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, Masonic Bldg., Charleston.

Kansas February and June Examinations

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 11, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Four candidates were examined, all of whom passed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
University of Illinois		(1919)	1
St. Louis University		(1918)	1
Meharry Medical College		(1918)	2

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hering Medical College, Chicago		(1909)	Oklahoma
Loyola University		(1916)	Illinois
Rush Medical College		(1914)	Missouri
State University of Iowa College of Medicine		(1904)	Iowa
University of Kansas		(1918)	Missouri
American Medical College		(1911), (1912)	Missouri
Missouri Medical College		(1885)	Missouri, W. Virginia
St. Louis University		(1912)	Oklahoma
University of Oklahoma		(1918)	Oklahoma
Meharry Medical College		(1918)	Kentucky
Vanderbilt University		(1916)	Tennessee
Baylor University		(1916)	Texas

Dr. Dykes also reports the written examination held at Topeka, June 17, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 31 candidates examined, 28 passed and 3 failed. Twelve candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Gross Medical College		(1901)	1
Northwestern University		(1919)*	1
University of Kansas		(1919)	20
University of Louisville		(1907)	1
Medical School of Maine		(1895)	1
Harvard University		(1918)	1
Barnes Medical College		(1904)	1
John A. Creighton Medical College		(1919)	1
University of Oklahoma		(1915)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University		(1906)	Dist. Colum.
University of Illinois		(1916)	Illinois
Tulane University		(1917)	Louisiana
St. Louis Coll. of Phys. & Surgs.		(1888)	Oklahoma, Illinois
		(1908)	New Mexico, Missouri
St. Louis University		(1916)	Missouri
Washington University		(1915), (1917)	Missouri
University of Nashville		(1899)	Kentucky
Marquette University		(1915)	Wisconsin

Dr. Dykes also reports that 31 candidates, including 1 undergraduate, were licensed by reciprocity at the meeting

held at Topeka, Oct. 14, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University		(1909)	Texas
Chicago College of Med. and Surg.		(1914), (1916), (1918)	Illinois
College of Phys. and Surgs., Chicago		(1903)	Illinois
Northwestern University		(1905), (1917, 2)	Illinois
Rush Medical College		(1912), (1919)	Illinois
University of Illinois		(1916)	Illinois
Central Coll. of Phys. and Surgs., Indianapolis		(1904)	Indiana
Louisville Medical College		(1907)	Kentucky
Tulane University		(1916)	Louisiana
Baltimore Medical College		(1908)	Maine
Barnes Medical College		(1911)	Tennessee
St. Louis University		(1917), (1919)	Missouri
University Medical Coll. of Kansas City		(1910)	Missouri
Washington University		(1909), (1910), (1918)	Missouri
John A. Creighton Medical College		(1906)	Oklahoma
		(1916)	Nebraska
University of Oklahoma		(1916)	Utah, Oklahoma
University of Pennsylvania		(1910)	Penna.
College of Phys. and Surgs., Memphis		(1911)	Tennessee
University of West Tennessee		(1910)	Oklahoma
Vanderbilt University		(1916)	Tennessee
Undergraduate			Oklahoma

*Diploma withheld pending completion of hospital internship.

†Graduation not verified.

Georgia October Examination

Dr. C. T. Nolan, secretary of the Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 14-15, 1919. The examination covered 10 sub- jections and included 100 questions. An average of 80 per cent. was required to pass. Of the 14 candidates examined, 13 passed and 1 failed. Twenty-one candidates were licensed by reciprocity.* One candidate, a graduate of the University of Virginia in 1917, was licensed on presentation of a certi- ficate from the National Board of Medical Examiners. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College		(1915)	80.9
Chicago College of Medicine and Surgery		(1917)	87.3
Loyola University		(1919)	90.3
Tulane University		(1915)	89.4
Johns Hopkins University		(1919)	86.2
University of Maryland		(1916)	88.9
Tufts College Medical School		(1919)	84.7
University of Pennsylvania		(1916)	87.2
Med. Coll. of the State of So. Carolina		(1881) 81.6, (1917)	88.4
Vanderbilt University		(1914)	92.1
Medical College of Virginia		(1919)	83.8
University of Virginia		(1917)	85.7

FAILED

Southern College of Medicine and Surgery	(1913)	68.4
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College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama		(1904)	Alabama
Indiana University		(1914)	Indiana
Tulane University		(1916), (1919, 2)	Louisiana
Johns Hopkins University		(1910) Alabama, (1912), (1913), (1916), (1917)	Maryland
University of Maryland		(1915)	Maryland
University of Minnesota		(1894)	Minnesota
University Medical College of Kansas City		(1908)	Kansas
Jefferson Medical College		(1907)	Penna.
University of Pennsylvania		(1916)	Penna.
Meharry Medical College		(1919)	Arkansas
Vanderbilt University		(1915), (1916, 2)	Tennessee
University College of Medicine, Richmond		(1901)	Virginia
University of Virginia		(1909)	Alabama

Nevada November Examination

Dr. Simeon L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, Nov. 3-5, 1919. The examination covered 13 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 6 candidates exam- ined, 5 passed and 1, a chiropractor, failed. Seven candi- dates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Physicians and Surgeons, San Francisco		(1918)	79.3, 83
College of Medical Evangelists		(1918)	94.2
University of Michigan Medical School		(1903)	92
St. Louis College of Physicians and Surgeons		(1918)	83.5

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford Junior University		(1919)	California
University of Southern California		(1903)	California
Northwestern University		(1910), (1912)	Illinois
College of Physicians and Surgeons, Baltimore		(1910)	Penna.
Homeopathic Medical College of Missouri		(1898)	Illinois
Bellevue Hospital Medical College		(1888)	W. Virginia

Social Medicine and Medical Economics

COMPULSORY HEALTH INSURANCE

M. L. HARRIS, M.D.
CHICAGO

IN THE JOURNAL, March 6, attention was called¹ to the economic burden which workmen's compensation acts impose on the medical profession, owing to the inertia of the profession when it comes to economic matters. Tradition seems to have blinded the medical profession to everything but its work. Workmen's compensation acts were agitated publicly some time before they were made into laws, but physicians took no action in the matter. At the present time a proposition of much greater magnitude than workmen's compensation acts and of infinitely greater importance to the profession is being quite extensively agitated throughout the country, and unless the medical profession is alert it will wake up later to find itself again suffering under a burden from which it will be difficult or impossible to extricate itself.

THOSE INTERESTED IN HEALTH INSURANCE

Compulsory health insurance is one of the most important economic problems that has ever confronted the American people; therefore, it should be carefully studied in all its aspects. Without considerable thought and study, it is impossible for one fully to comprehend the magnitude of the undertaking. There is scarcely a class of persons who would not be affected more or less directly by it. There would be the great hordes of independent, free thinking individuals, who would be compelled to accept and pay for the insurance, whether they wanted it or not; the thousands of industries that would be forced to contribute to the fund; the medical profession that would be obliged to assume the responsibility of carrying out the terms of the insurance; the innumerable officials composing the working machinery, and finally, everybody else who would be taxed for the enormous upkeep of it all. The effect that a scheme of this kind would have on each of these groups is a study by itself. It is by no means clear that it would be an advantage even to the class that it is intended to benefit.

INDIVIDUALISM

That good health and a good physique are most desirable qualities in an individual and even essential to the welfare of a nation will be admitted without argument; hence, no time need be wasted on that phase of the subject; but if the events of the last few years have taught us anything, they have taught us that individualism is likewise an essential qualification of a people's greatness. Individualism, independence, freedom of thought and action are necessary to the upbuilding of a race of people sufficiently resourceful to meet successfully all the obligations and duties of life. Every time the state relieves the individual of a responsibility in life, it weakens the individual's character, which must inevitably react detrimentally on the evolutionary development of the people. The only restrictions to individualism which should be enforced are those made necessary by community existence, and that is too elementary a subject to require consideration here.

Before discussing further the effects of compulsory laws on the development of the individual, let us review briefly the arguments of the proponents of compulsory health insurance. The statement is frequently made that compulsory health insurance is but another step in the same direction

as workmen's compensation acts, and if the latter are sound in principle and beneficial in their effects, the former, being but a step forward in the same direction, must likewise be sound in principle and beneficial in its effects. This conclusion is erroneous because of a lack of relation between the premises. The principle underlying workmen's compensation acts is definite and distinct, namely, injuries to workmen arising out of, and in the course of, their employment are a direct charge on the cost of production; but no such principle underlies compulsory health insurance. If accidental injuries to workmen were always preventable, it would be the duty of the state to enforce such rules and regulations as would effectually prevent their occurrence, instead of enacting laws to compensate the workmen in some manner for the damage done. It would not only be much cheaper to prevent the damage but infinitely more humane.

Arguing along this line, the proponents of compulsory health insurance claim that as some diseases may be directly connected with the character of the work, all diseases in workmen should be compensated for the same as accidental injuries. There are many fallacies in this line of argument. In the first place, the diseases which are directly caused by the character of the work are very few indeed, and these can be readily prevented by proper working conditions. If a disease can be prevented by having proper working conditions, it is plainly the duty of the state to see that such conditions are provided, and not tax the people to cure a disease when it would be much easier and cheaper to prevent it. If there should be a disease which was caused directly by a particular line of work in an industry, and it were not preventable, then the care of a workman thus made ill should be a direct charge on the cost of production in the same manner as an accidental injury.

INFLUENCE OF ECONOMIC CONDITIONS

Much has been written about economic conditions and the influence which they may have in causing disease. Among these may be mentioned working conditions which cause fatigue; morbidity and mortality statistics according to occupation; effects of irregular employment on health; inadequate diet; bad housing conditions and overcrowding, and unfavorable community environment. It will be admitted that these conditions and others that might be mentioned may be factors of greater or lesser degree in the causation of some diseases, but it is not shown that compulsory health insurance would modify or change any of these conditions or in any way mitigate their effects. Bad housing conditions and overcrowding, unhealthful working conditions, and unfavorable community environment are all matters which are, or should be, under the supervision of municipal and state public health departments; irregular employment and unemployment are industrial problems, and inadequate and improper diet are matters of intelligence and education. A lack of intelligence and of education, both general and moral, and a disregard by the educated, as well as the uneducated, of the ordinary common sense rules of hygiene are much greater causative factors in the production of disease than all of those previously mentioned, but it is impossible to legislate effectually against conditions such as these. Certainly compulsory health insurance would be more likely to increase than to decrease the tendency to them, by reason of the removal of restraint and responsibility.

PREVENTIVE MEDICINE, THE PROPER ACTIVITY OF THE STATE

Wages and poverty and disease are familiar terms much used in the discussion of this subject. Wages below a certain point, which, though relative, is always definable, spell poverty, and morbidity and wages are associated within certain limitations in inverse ratio. The lower the wage, the

1. Harris, M. L.: The Physician's Burden Under Workmen's Compensation Acts, J. A. M. A. 74: 694 (March 6) 1920.

higher the morbidity; as wages rise, morbidity falls, until it reaches what may be termed the "normal" rate. Other things being equal, this ratio between wages and morbidity in general terms is quite constant. The point at which the normal morbidity line crosses the wage line indicates what may be called a living wage. It is recognized that this is not a fixed point for all individuals, or for all classes of individuals; but when dealing with numbers, the principle holds good. When the wage or the income falls below the point mentioned, poverty begins, and sickness increases. With increased sickness comes a further decrease in income, and consequently greater poverty. Thus a vicious circle becomes established, from which it is often difficult to escape.

These are fundamental facts in economics. The question now arises: What should be done to help those whose income falls below the normal living wage and who thereby suffer from increased morbidity? It is plainly the duty of the state to study this problem and to solve it if possible. Shall the state by a system of compulsory medical treatment simply attempt to cure the ills of the unfortunate, or shall it, by proper preventive measures and by aiding in the adjustment of sociological and industrial conditions, enable the people to rise to or above the normal income point, so that they may, by their own resources, fulfil their responsibilities and obligations in life? Viewed from the standpoint of the ultimate good of the people, it would seem that there can be no question as to the course the state should pursue. If the state will extend the work of its health department to a legitimate extent along the line of preventive medicine and endeavor to correct insanitary working and housing conditions and educate the public in personal hygiene, there will be no occasion for compulsory health insurance. These are all legitimate functions of the state. There are certain responsibilities and obligations in life that must always rest with the individual if he would remain free; and when the state attempts to assume these, even though it may seem expedient at the time, it does so to the eventual detriment of the individual.

The statistics of the draft showing physical defects sufficient to disqualify for the army in about 30 per cent. of the young men of this country is often used as an argument in favor of compulsory health insurance. It should be remembered, however, that ours was a select army, and only the most perfect specimens of manhood were taken. It does not mean that all those rejected were unfit for the usual occupations of life. The largest single cause of rejection was defective vision, due simply to errors of refraction, a condition which may be relieved by the use of glasses but which cannot be prevented or cured. The defects were found among the rich who have always been well taken care of medically, as well as among the poor; hence it is perfectly evident that compulsory health insurance would not have prevented the defects, but some of them might have been obviated by a reasonable amount of proper physical training. The same kinds of defects were found with equal frequency in men of the countries which have been the longest under compulsory health insurance; on the other hand, no finer specimens of young manhood, both physically and mentally, ever formed an army than composed the American Expeditionary Forces. It is certain, therefore, that compulsory health insurance finds no support in the draft statistics.

LOCAL NATURE OF THE DISPENSARY PROBLEM

There are a few eminent members of our profession who believe compulsory health insurance to be desirable. These gentlemen have studied the subject from the point of view of the large city dispensary and clinic. They see a large number of poor people who visit these dispensaries daily and who, they believe, are not receiving adequate medical

treatment. They argue that if all these patients were insured they would be able to pay the dispensaries for their treatments; the dispensaries would then be able to build up larger institutions, which could pay the attending physicians for their services, and thus provide the sick with better collective medical care. Any one who is familiar with the dispensary evil and the suffering of the poor in the tenement districts of large cities will appreciate the point of view of the gentlemen who earnestly desire the betterment of the condition of these people; but isn't the dispensary question rather a local one? The same conditions certainly do not obtain throughout the country or even throughout a state. The commissions that have been appointed by several of the states to investigate the question of health insurance report that conditions vary greatly in different states and in different parts of the same state, and some of the commissions see no necessity for the adoption of compulsory health insurance. It will be admitted that the dispensary question and inadequate medical care of the poor in large cities are serious problems, and it is even possible that compulsory health insurance might bring temporary relief; but it would be at the expense of future harm. In matters of such weighty importance, isn't it a short-sighted policy that acts only for today and disregards tomorrow? Why should a measure that is ultimately detrimental in its effects be imposed on an entire country or state for the temporary relief of a condition that is local, and which should be remedied by prevention rather than cure? It should not be inferred from this that there are no poor in small communities; but the conditions are very different from those existing in large cities. Again, no measure of the magnitude and importance of compulsory health insurance, the effects of which are in any way doubtful, should be thrust on a people, for it is a well known fact that a principle once written into the law seldom becomes erased, and the baneful influence of such laws are cumulative, and eventually drag a people down.

In a subsequent article the effects of compulsory health insurance on the medical profession will be discussed.

Medicolegal

Osteopath Not a Physician

(*Ex parte Rust (Calif.)*, 183 Pac. R. 548)

The Supreme Court of California, in denying in this habeas corpus proceeding the petitioner's application for release from custody on a conviction of violating the optometry law, says that he was licensed in 1907 to practice osteopathy, and contended that he was a physician and was entitled to practice optometry by reason of the exception contained in the optometry law that its provisions should not be construed to prevent duly licensed physicians and surgeons from treating or fitting glasses to the human eye. To support his contention that the practice of osteopathy was the practice of medicine, and hence that he was a physician, the petitioner relied on the general definition of a physician as one who practices the art of healing, and on cases in which those engaged in the practice of osteopathy have been held guilty of violating laws regulating the practice of medicine. He also claimed that he was a "physician" practicing "medicine" within the meaning of the Medical Act of 1901, in force at the time his license to practice osteopathy was issued, which provided that those, among others, should be deemed as practicing medicine or surgery within the meaning of this act who, for a pecuniary or valuable consideration, "perform any operation for the relief or cure of any bodily injury or disease." The question thus raised was not free from difficulty, for the reason that neither the medical act of 1876 nor any of the succeeding acts defines a "physician" or "surgeon," or a "physician and surgeon," or expressly provides for the

license of a "physician." The optometry law of 1903, in stating the exception, is similar to that of 1913, as is the amendment of 1907, in using the term "physician and surgeon"; but the amendment thereto in 1909 uses the expression "physician or surgeon." There was therefore some basis for the claim that at the time of the issuance of the petitioner's license (March 6, 1907) these terms "physician" and "surgeon," not being defined by statute, should be construed in their broad and general acceptation. However, the same legislature which adopted the optometry law of 1913 also adopted a law regulating the practice of all systems of healing. By this law provision was made for the issuance of a certificate known as a "physician and surgeon's" certificate, and another to be known as a "drugless practitioner's" certificate, the latter certificate covering the right to practice osteopathy; and the court holds that the provision of the optometry law of 1913 mentioned above refers to those holding a "physician and surgeon's certificate," as authorized by the medical act of the same year. Moreover, the court thinks it fairly apparent that the legislature has, in effect, always used the terms "physician" or "surgeon" and "physician and surgeon" as applied to those practicing medicine and surgery within the meaning of the various medical acts, as contradistinguished from the practitioners of osteopathy. Wherefore, the court holds that the license of the petitioner, although issued before the optometry act and the medical act of 1913, did not authorize him to practice optometry under the exception in favor of physicians and surgeons. Nor did the license to practice osteopathy issued under the law of 1901 authorize the licensee to practice every known healing art which did not involve the use of drugs, or major surgery, including optometry. The present laws authorize the petitioner to practice osteopathy, and nothing more, by reason of his license issued under the law of 1901. The court cannot say that the science of osteopathy includes optometry. The discrimination between the holder of a physician and surgeon's certificate and the holder of a certificate to practice osteopathy is not unreasonable, for it is based on different training.

Paralysis of Face Following Mastoid Operation

(Finke v. Hess (Wis.), 174 N. W. R. 466)

The Supreme Court of Wisconsin, in affirming a judgment on a verdict directed for the defendant in this action for alleged malpractice, says that it was insisted by the plaintiff that the defendant, in performing a mastoid operation, severed the seventh or facial nerve. At the close of the evidence, a verdict was directed for the defendant. The question was whether there was sufficient evidence to carry the case to the jury. Paralysis of the face was shown, and there was evidence that severance of the nerves would cause such condition. But the evidence also showed that the paralysis might, from other causes, well follow an operation skilfully and properly performed. It was shown that paralysis might have been caused by a dehiscence, or by bandaging after the operation, or by cold drafts, and possibly other causes. In order to warrant the court in submitting the case to the jury there must be some evidence that the defendant severed the facial nerve, and there was none in the record. On the other hand, there was positive evidence, not only by the defendant, but also by a specialist of Chicago, who opened up the old scar in an effort to relieve pressure on the nerve, that the nerve was not severed. It was contended that this specialist admitted that the nerve was severed, but the evidence did not support that contention. It was based on the testimony of a woman, but her evidence as to what the specialist said when he was not under oath was not competent, except as laying a foundation for impeachment. Moreover, she admitted on cross-examination that the specialist might have said that the nerve was injured, not severed. Some reliance was placed on the opinion of another physician, but his opinion could not raise a conflict with the positive undisputed evidence that the nerve was not severed, and that other causes existed for the paralysis. Proof of a bad result raised no presumption of negligence in this case.

Society Proceedings

COMING MEETINGS

- AMERICAN MEDICAL ASSOCIATION, New Orleans, April 26-30.
Air Service Medical Assn. of the U. S., New Orleans, April 26.
Alabama State Medical Association, Anniston, April 20-22.
American Association of Anesthetists, New Orleans, April 26-27.
American Association of Anatomists, Washington, D. C., April 1-3.
American Assn. of Pathologists and Bacteriologists, New York, April 2-3.
American Association of Physicians, Atlantic City, May 4-5.
American Dermatological Association, Asheville, April 22-24.
American Gastro-Enterological Assn., Atlantic City, May 3-4.
American Proctologic Society, Memphis, Tenn., April 22-23.
American Radium Society, New Orleans, April 26.
American Surgical Association, St. Louis, May 3-5.
American Therapeutic Society, Philadelphia, May 7-8.
Assn. for Study of Internal Secretions, New Orleans, April 26.
Assn. of Amer. Teachers, Diseases of Children, New Orleans, April 27.
Assn. of Military Surgeons of the U. S., New Orleans, April 24.
California State Medical Society, Santa Barbara, May 11-13.
Connecticut State Medical Society, New Haven, May 19-20.
Georgia Medical Association, Macon, May 6-8.
Illinois State Medical Society, Rockford, May 18-20.
Iowa State Medical Society, Des Moines, May 12-14.
Kansas Medical Society, Hutchinson, May 5-6.
Louisiana State Medical Society, New Orleans, April 24-26.
Medical Veterans of the World War, New Orleans, April 26.
Mississippi State Medical Association, Jackson, May 11-12.
Missouri State Medical Association, Jefferson City, April 6-8.
National Tuberculosis Association, St. Louis, Mo., April 22-24.
New Hampshire Medical Society, Concord, May 12-13.
North Carolina State Medical Society, Charlotte, April 20.
Oklahoma State Medical Association, Oklahoma City, May 18-20.
South Carolina Medical Association, Greenville, April 20-21.
So. Section Am. Laryn., Rhin. & Otol. Society, New Orleans, Apr. 27.
Tennessee State Medical Association, Chattanooga, April 6-8.
Texas State Medical Association, Houston, April 22-24.
The Radiological Society, New Orleans, April 23-24.
West Virginia State Medical Association, Parkersburg, May 18-20.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

Joint Annual Conference of the Council on Medical Education of the American Medical Association with the Association of American Medical Colleges and the Federation of State Medical Boards of the United States, held in Chicago, March 1-3, 1920

(Continued from page 826)

Research in the Teaching Laboratories

DR. OSCAR KLOTZ, Pittsburgh: My plea is for a closer cooperation of the various laboratories in modern medical schools. We are still working under the handicap of the tradition of the past, when the researches were undertaken by isolated individuals in apartments with closed doors. There are many problems of medical research which can be carried out equally well, without regard to the location of the institution. Certain necessary factors are essential: the personnel, the laboratory with all its accessories, and a library. But there are other problems which do not lend themselves to this ready approach. The yellow fever problem could not have been undertaken in Canada, nor industrial diseases in Washington. The present time lends itself very well to directing the energies of our laboratory system in the study of problems most nearly related to the local community life. For example, there is no better place to continue the study of shock than in our large industrial centers. The tropical and subtropical diseases logically belong to the South and the large seaport towns in close commercial contact with endemic centers. Can we not make greater headway by studying the questions which lie at our door? Jenner's opportunity was just such a one. Against advocating such a plan, and one whose disposition would best be placed in the hands of the National Research Council, may be brought the argument that we should be forgetting the emphasis to be laid on a study of the everyday fundamentals related to less localized problems. It is not intended to advocate the restricting of the activities of any one or group of individuals to concrete practical problems, but that each would also continue his investigations in the field of his personal choice. Moreover, the correlation of two such

divergent fields of investigation would tend to make the researchers broader men.

Problems for investigation and the opportunity for attacking them lie before every department of our medical schools, and there can remain only two reasons why more is not accomplished: We "cannot make brick without straw," and although our universities are realizing the value of research and are making the facilities available as quickly as funds will permit, this in not a few institutions has been a slow process. Rarely does a university appreciate the value of research to an extent to add to the departmental budgets money to be devoted for this purpose. The endowment of research fellowships within the teaching departments is to be encouraged, and sufficient money to provide the necessary equipment must be urged. Some schools of medicine have found it easier to obtain a research budget by establishing certain definite research departments whose personnel has no teaching responsibility nor a working relation to any particular department in the institution.

A word about undergraduate research in the medical sciences: From time to time a plea has been made by medical educators for the recognition of student researches, either as a part of their laboratory exercises or as a final thesis prior to graduation. Student research is distinctly different from the research performed by the graduate scholar. For the undergraduate, the carrying out or verifying of a technic previously devised, or his acting in the capacity of personal assistant to his instructor, may be perfectly adequate methods of training for research. It is inadvisable to assign true research problems to the undergraduate not only because of his inadequate training but also because of his essential studies in other departments. However, the summer months often offer an opportunity for the occasional student, and advantage is taken of this.

What is true of the fifth year in the hospitals may also apply to the laboratories of the teaching departments of medical schools. It should be possible in all states to credit work done in the fifth year under the direction of the medical school laboratories at the same rating as the hospital service. With such an arrangement it would be possible to produce a larger number of scientifically trained men for practice, and give them their first real insight into original laboratory research.

Research in Clinical Medicine

DR. G. CANBY ROBINSON, St. Louis: The establishment of clinical medicine on a university basis necessitates a revision of the usual divisions of the subject. Internal medicine, pediatrics, surgery and the specialties which have grown up about them must be brought close together, and all must be considered part of the science of clinical medicine, the study of disease in living human beings. The technic of treatment has made the division into the various groups desirable and necessary, and this division must be maintained. On the other hand, the study of all human disease affecting all organs of the body must be included in the science of clinical medicine and be pervaded by the same spirit of scientific research. No special consideration should be reserved for internal medicine which is not shared by surgery and by all the medical and surgical specialties. Obstetrics is excluded by our definition, but only so far as childbearing is to be excluded as a disease. There are many medical problems associated with it.

The department of clinical medicine should consist of a group of men which, by virtue of the special training of its individual members, can bring to bear on the problems of disease a knowledge of all the ancillary or contributing sciences. It is essential that there be men trained in chemical, physiologic, bacteriologic and biologic methods who have a knowledge of the present day conceptions of these sciences. Physical chemistry and physics are also becoming more and more necessary for the solution of clinical medical problems. This group of men must work together as a team, in order to bring research to its greatest development. That this is now being done is one of the most hopeful signs. The unit system, as the English call it, has great possibilities. The group must be presided over by a man who has gained the

headship of the department by virtue of scientific attainments and achievements, and because of demonstrated ability in the performance of the manifold duties he is called on to discharge. He should be alive to the contribution which each member of the group can make. He should not only coordinate the whole department, and himself participate in research, but he should also bring each member of the department and his work into sufficient intimacy with all the other members so that the entire group will go forward together in the study of clinical medicine.

The facilities necessary for the development of a university department of clinical medicine consist in an adequate hospital and outpatient plant under the control of the head of the department, and organized especially for carrying out the primary objects of the department, namely, research and teaching. The department must be built up about this plant and the needed laboratories and accessories must be conveniently placed and adequately equipped. It is very desirable that the hospital wards should constitute an integral part of the department. Even the most carefully planned affiliation between the university and a hospital controlled by an outside board of trustees may prove to have its disadvantages, no matter how much in accord each party in the agreement may be.

If research is recognized as an essential factor in education, then every effort should be made to foster it from this point of view alone. If clinical medicine is to be developed along the lines indicated in this paper, there can remain no arguments relating to the desirability of the so-called whole-time plan of clinical teaching. The head of the department and the principal members of the staff must devote their entire time to the demands of the hospital and laboratories and to the training, directing and teaching of the younger students. The salaries of men devoting themselves to research and teaching of clinical medicine should be adequate for their needs, and should be adjusted with consideration for the many added duties and responsibilities that arise from their care of and contact with sick and injured persons.

DISCUSSION

MR. ABRAHAM FLEXNER, New York: Nothing is too good in respect to ideals and equipment, facilities and resources for a medical school. A practical question in connection with the realization of any of these ideals or standards or criteria, is how, in a country in which educational funds are derived as they are in America, these things are to be paid for. We have told these medical schools what they ought to do and what to have in the way of equipment and facilities to remain in good standing. They have said: "That is all very well, but consider what these things cost, and who is going to pay for them?" The Council on Medical Education is the main factor in setting up criteria as to what is decent and desirable in respect to medical schools, but it has not yet, so far as I know, created a committee on finance which will help these schools in different parts of the country to find the means to do the things which the Council assures them ought to be done. The situation is different from that which exists, for instance, in Germany, where the government tells the medical school what it ought to do and what it ought to be, and then says, "Here is the money with which to do it." One of the devices that the Council on Medical Education early and properly resorted to in the efforts to secure ultimately the funds needed to finance medical schools was to take the position that a properly equipped, endowed and thorough medical school ought to be a department of a university. It does not mean that all medical schools have got immediately to be of one type. This is quite possible in Germany, where they have a sort of paternalistic government that does things, to which there is no opposition, to carry out these things on a more or less uniform basis; but in a country in which higher education is developed, as in American, that is physically impossible. We have enormous discrepancies in both private and taxable wealth; we have enormous discrepancies in public sentiment; and it is impossible for a public educational system, or a university system, to detach itself completely from these

varying local conditions. We must therefore accept the fact that for many years we are not going to have in America, in all probability, short of a miracle, of which I see no signs, standardized medical schools, but we are going to have considerable varieties. We hope to embody minimum standards in the way of preparation of students, preparation of teachers, and facilities, laboratory and clinical; but there is going to be a much greater discrepancy in this country for a long time to come than existed in Germany, where homogeneity was brought about by the leveling and elevating action of a powerful central government. I am a believer in the virtues of the full-time plan under certain conditions. It has never entered my mind that there will be in this country for a long time to come anything like a general uniform movement toward the installation of a rigid full-time plan in clinical branches. The fact of the matter is that the full-time plan covers relatively a small part of the activities of either school or hospital. It is, I think, a luxury, if we may call it so, to develop the highest possible improvement, because it promises to promote scientific development, to produce an improved teacher and investigator, and perhaps gradually to raise the entire level; but any premature movement toward the attainment of this end would in my judgment be a great mistake.

DR. FRANK BILLINGS, Chicago: Dr. Jessup did not mention some of the factors and functions of a state university when he omitted the question of prevention. I do not think he used the word prevention throughout his paper. During the last year the Illinois legislature enacted a law which enabled the state to go forward with the reconstruction and rehabilitation of the crippled. It defines those who are disabled as not only those injured but those who are disqualified because of disease, and those who were interested in the passage of that bill had no word put in it concerning prevention. One wonders, therefore, if in the function of the state through its university or officials we are going to care for the disabled without any question as to the prevention of these things, as was done so well in the army during the war.

The full-time clinical teaching policy originated twenty-two years ago in the brain of Dr. William R. Harper, who, as president of the University of Chicago, became interested in medical teaching. The founder of the University of Chicago, and the board of trustees at that time were not in favor of it; but President Harper persisted in a thing which he considered right, and hence Rush Medical College became affiliated with the University of Chicago. In this way President Harper thought he could more quickly carry out his ideas of medical teaching. He advanced the requirements for admission to that medical school rapidly. In 1902 he presented a proposition to the board of trustees, which was accepted, of making the university medical school with full-time teachers. I have been an advocate of full-time medical teaching since that time.

DR. J. WHITRIDGE WILLIAMS, Baltimore: The reason the full-time scheme became necessary was because, as Dr. Bevan has said, the men who attended to their business, giving half of their time to business, and the other half to teaching, knew perfectly well at the end of the year that they had done their duty neither to the university nor to their patients. The really provocative thing for the full-time plan was the fact that many of our best clinicians were financial hogs and prostituted their university positions for money, and expected their younger colleagues to do the work which they capitalized. We have had the full-time scheme in operation in Johns Hopkins for a number of years, and I have no hesitation in saying that, on the whole, it has been an unqualified success. Nothing is perfect, but there is no doubt about the general success of it.

DR. O. F. HENDERSON, Toronto, Ont.: If we are going to teach fifty or a hundred students adequately with only full-time men, it will mean a very large budget in the way of salaries, etc. I think it will be some time before we shall be able to carry out a full-time scheme on an extensive scale.

DR. RAY LYMAN WILBUR, Leland Stanford University, Calif.: One difficulty we have to contend with is the confu-

sion between college and university. We have comparatively few universities and comparatively few university men in the United States. The larger proportion are college men. The college teacher does not understand a medical school. The university teacher understands a medical school. There is a distinct difference in the type of men. Most of the criticism of medical schools comes from the college type of teacher. The same thing is true of members of boards of trustees in various institutions. I was much interested in what Dr. Flexner said about medical schools being taken over by universities, because I happened to have the unique position of being an individual who held a flirtation with the university, and now I have an opportunity to take care of a medical school, and while it has distinct problems of its own, it is probably the most pleasant duty I know of. There should be some definite, tangible result of the full personal service type rendered by the clinician. In carrying out the full-time plan we must remember the point Dr. Billings brought out—leadership outside the walls of the hospital from the great clinicians just as we get leadership in all other fields. If we lose track of that, we shall develop specialized branches of medicine, men that will be college men that will be interested in the medical field. The university must keep in touch with everything that is going on and supply the leaders, and in medicine we must particularly keep that in mind.

DR. E. P. LYONS, Minneapolis: With regard to the full-time proposition, in thinking the matter over in our environment, I have been influenced mostly by the Mayo Clinic, where no patient is a private patient. All classes and types of patients go there. I should like to see in our school a big university clinic to which people can come and go. I should dislike to have the university give its services to people free who can afford to pay. I should like to see that clinic developed as a service to all people—everybody who wants to go there—and that brings me to the plan outlined by Dr. Darrach, according to which the fees from patients are paid to the clinic. I think it is perfectly possible with that ideal in mind to have such a distribution that every man who is immediately taking care of an individual case will have the advantages of all the specialties, the laboratory and clinical departments, that can be of any assistance to him. The patient should not be referred from one specialist to another, receiving a separate bill from each specialist, but should have one bill for the whole work. That would be the scheme I would formulate to accomplish if I could in the University of Minnesota, and the only objection to it would come from the medical profession itself.

DR. ARTHUR DEAN BEVAN, Chicago: I am very optimistic. I think we are making wonderful progress. Mr. Pritchett told us a few years ago that we had accomplished more for education by these annual conferences than had been done by any other agency during the same period. The problem of inducting a medical school into a university is a difficult one, because medicine is more than a science. If it were simply a science it would be a simple matter to introduce it into a university and handle it without difficulty, just as the science of physics is handled; but it is an art, and it is a profession by which men make their livelihood. We cannot practice medicine as we would make matches or make shoes. We cannot practice medicine by machinery. There is an enormous personal element in medicine. We should attempt to develop our medical schools on business-like, common-sense, economical lines, and make such a combination with a great state for the interests of the people of the state as has been made in Iowa between the hospital that takes care of the people of the state and the medical school. I think that is a splendid scheme and should be copied widely wherever it is feasible.

Coordination of Effort in Medical Licensure

DR. DAVID A. STRICKLER, Denver: It should be the effort of every board to make it easily possible for a good man to obtain a license in any state and vice versa, increasingly difficult for a bad man to extend his field of labor. Each state must determine for itself the value of credentials presented; but in the matter of practice record, moral character and

those qualities which make the man and citizen, very important information may be best ascertained by his home board, the endorsement of which, under proper conditions, should mean much to the individual and to the board receiving it. My plea is for an interstate endorsement which shall represent the facts as they are ascertained on investigation or as based on personal knowledge of the executive officer, and not simply a statement of what the records show, though this should be included when of value to the board which is to determine whether a license shall or shall not be issued.

It has seemed to me that with the consistent efforts of the Council of Medical Education of the American Medical Association, combined with the Association of American Medical Colleges and other like bodies from the homeopathic and eclectic schools, a standard should be reached which may be accepted as evidence of medical knowledge without requiring an examination each time a man from choice or necessity changes his residence to a new state.

Report of Committee on Graduate Medical Education in the United States

DR. LOUIS B. WILSON, Rochester, Minn.: Owing to conditions since the war, probably 10,000 medical graduates sought opportunity for further study in 1919. This is probably three times the annual number in normal years. Probably 3,000 medical graduates are doing work in short courses in the United States during the current year. The supply of short courses in graduate schools is at present sufficient to take care of those seeking the kind of instruction offered, but probably more than as many more desire short courses of better grade. More good university schools might well offer opportunities for brief periods of study in limited fields to more adequately prepared general practitioners or practicing specialists.

Of 1,021 physicians recently requesting opportunity for graduate study for long terms, a large majority requested surgery. About one-sixth as many applied for medicine and one-tenth for otolaryngology. Only four applied for work in the fundamental medical sciences.

The average age at graduation of the 174 medical graduates in the University of Minnesota is 25.8 years, just a year less than the average age at graduation of the total number of graduates in 1916 from all medical schools which in 1912 required two or more years of collegiate work for entrance.

A questionnaire to representative men in special clinical fields shows that their average age at graduation was 24 years, though their average date of graduation was 1894. The respondents to this questionnaire advise a minimum of three years' graduate study after a year's general internship before beginning the practice of a clinical specialty. This is from one to two years less than the respondents themselves took for their own preparation. Of the respondents less than one-third as many advise foreign graduate medical study as had it during their own graduate preparation. Of the surgeons responding, half as many as had it advise special graduate work in anatomy. One-half more advise special work in pathology than had it. Of the internists, twice as many as had it advised special graduate work in biochemistry and physiology, and one-fourth less than had it advise special training in pathology. General practice preceding a specialty is advised by only 6 per cent. of the respondents. Seventy-six per cent. advise hospital residency or assistantship in the special field desired. Twenty-five per cent. advise assistantship to one specialist.

Attention is called to the urgent need of increasing the number of competent men in the fundamental medical sciences. To this end it is recommended that adequate endowments of teaching positions and fellowships be sought that full-time professorships in the fundamental medical sciences may pay the same salaries as proposed full-time professorships in surgery and internal medicine.

Interallied Medical Relations

DR. WALTER L. BIERRING, Des Moines, Iowa: The impressions gained by observation of the English plan of medical

education are, first, that the fundamental and general education of the English physician is on a higher plane than his medical colleagues in the United States applying particularly to those graduating previous to 1912; second, the emphasis given to the practical application of pathology, bacteriology and anatomy in the qualifying examinations has led to a lessened interest in special research studies in pure pathology, pure bacteriology and the other fundamental medical sciences.

Medical licensure in Great Britain is distinctive and vested entirely in the general council of medical education and registration of the United Kingdom, established when the first comprehensive British medical practice act was enacted in 1858. The general council does not conduct any examinations, but it decides which medical schools are in good standing, and by means of inspectors appointed from its membership determines whether courses of study and the examination of the faculties of the different medical schools as well as the three qualifying boards are satisfactory.

This plan has certain distinct advantages, the final licensure examination is done away with; and with such a representative body as the general council, with excellent means of supervising medical teaching and qualifying examinations, it is eminently fair to the interests of the profession, and the public is well protected.

An entirely different situation obtains in France. Medical education and the right to practice medicine are entirely under the control of the state, the one being dependent on the other, as the conferring of the degree of Doctor of Medicine from an authorized French university carries with it the privilege to practice.

Interstate Relations in Medicine

MR. FRANCIS W. SHEPARDSON, Springfield, Ill.: In considering interstate relations in licensure for medicine it was not the purpose to discuss the subject of reciprocity which, on first thought, might be associated with the topic. Even a casual examination, however, of the various application blanks for reciprocity required by the boards of medical examiners of various states suggests that there is much yet to be done in this field before ideal conditions are secured. The blanks differ materially in their form, language and requirements. It is at least worth a question whether it might not be possible through interstate cooperation to secure a greater degree of uniformity in these blanks and a much simpler type of application than that now generally used.

These are some of the matters relating to interstate relations in medicine which it seems to me might be worthy of consideration. The need of harmony and united effort on the part of licensing authorities of adjacent states of the Union is apparent. Through such harmony and united effort many of the evils which have attended medical licensure in the past, some of which still exist, might be ended forever.

DISCUSSION

DR. ARTHUR DEAN BEVAN, Chicago: As chairman of the Council on Medical Education, I had the opportunity to inspect a number of these institutions with Dr. Wilson. From inspection of these graduate schools, the kindest thing that one can say is that they are entirely inadequate to perform the functions which seem at this time to be required. It is quite clear this work should not be done by independent schools or by commercial schools. There is a legitimate and growing demand for the right sort of graduate instruction. The reason we have the class of institutions that we now have is that the universities of the country have not done their duty. The problem clearly belongs to the medical departments of our universities.

DR. GEORGE H. MEEKER, Philadelphia: The University of Pennsylvania has been considering this subject for a number of years, and in 1916, as a result of this movement, the Medico-Chirurgical College of Philadelphia ceased to exist as an undergraduate institution. In 1918 the former Philadelphia Polyclinic and College for Graduates in Medicine similarly joined the movement, but the war prevented any real progress from being made. At present we are giving

what we believe to be meritorious courses in internal medicine, neurology, ophthalmology, and otolaryngology, each of four months' duration, and of intensive work leading to degrees or certificates. The aim of the university is to supply the tremendous demand, although there will have been 100 such men handled during the present university session. Under the plan which the committee has been preparing for the University of Pennsylvania, it will involve a deficit of \$200,000 per annum. The income from students is estimated at a maximum of \$10,000 per annum, which is hardly a paying proposition financially. The University of Pennsylvania has about two and a half million dollars already invested in this work, and has expended in preparation for it about \$150,000 in equipment for teaching up to the present time, which by no means represents an idea of the final expenditure.

DR. HORACE D. ARNOLD, Boston: One point has not been sufficiently emphasized: Before the war a large number of our enterprising and best medical men were going to Germany and Austria for improvement in their medical knowledge and experience in various lines. Now that whole current has been disjointed by the war. Those men do not want to go to Germany and Austria at the present time, and yet that current is still in existence, and a number of men that have become interested in the improvement of their medical knowledge through the war experience are seeing and using better methods of dealing with the sick. They recognize their deficiencies, and where are those men going? It seems to me that it is up to the profession of the country, and particularly to the medical schools and universities of this country, to organize to meet this demand and to do it quickly.

DR. H. W. BRIGG, Wilmington, Del.: Dr. Strickler says it would be well to have a survey of the methods employed by the different state boards in licensing candidates after examination. This is an excellent suggestion because it would enable us to compare notes. That is the way progress has been made by the Council on Medical Education. If such a survey is to be made and brought to one of these meetings, we can derive benefit from it by analysis and comparison. His second recommendation is that we proceed with propaganda on legitimately advertising the better things of the medical profession; in other words, a propaganda of publicity.

DR. GEORGE M. KOBER, Washington, D. C.: It has occurred to me that new channels might be opened for graduate instruction in connection with the Public Health Service. This service is now preparing a large number of hospitals in different medical and industrial centers which need unquestionably to be properly supplied with an able consulting staff, and it is really the policy of that service to call to its aid the various medical and special surgical authorities as a consulting staff for these hospitals. In addition to the work in the hands of the Public Health Service, there is also a great work being done by the government of the United States in the operation of the workmen's compensation acts, which means the proper and adequate care for the sick and for the relief and recovery of men who have incurred accidents or diseases in the line of their duty when employed by the United States government.

DR. JOHN M. DOBSON, Chicago: The proper line of action is to make use of our proper resources for graduate instruction for these various groups. The most interesting experiment along this line which has ever been instituted in this country is in connection with the Mayo Clinic and the University of Minnesota. It is unfortunate that we do not have more clinics of the sort that can supply their own funds and then give to the universities ample promise of support, in Boston, Philadelphia, New York, etc. I think it should be the existing medical schools, strongly established, seeking to utilize the larger resources of the hospitals in those cities. Many of the outlying hospitals in smaller cities are available for this purpose. I should like to see a continuation of the work in these numerous hospitals, now very well organized under the auspices of or with the advice and help of existing university medical schools.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

February, 1920, 3, No. 2

- Methodical Examination of Pupils. M. Landolt, Paris.—p. 81.
Hypotony After Trephining. A. Knapp, New York.—p. 87.
Ocular Manifestations in Cerebellar Syphilis. W. G. Dickinson, Syracuse, N. Y.—p. 89.
Experimental Production of Iritis and Its Treatment with Foreign Protein. P. L. Veach, Minneapolis.—p. 93.
Atypical Coloboma of Iris and Choroid. S. R. Gifford, Omaha.—p. 97.
Multiple Vaccination of Eyelids. A. J. Bedell, Albany.—p. 103.
Proliferating Endophlebitis and Retinal Hemorrhage. Microscopic Examination of Excised Globe. B. S. Guyton, University, Miss.—p. 111.
Unusually Large Primary Epithelioma of Ocular Conjunctiva. C. A. Veasey, Spokane.—p. 113.
Possibilities of Muscle Operations. R. O'Connor, Oakland, Calif.—p. 116.
Removal of Foreign Bodies from Eye. F. Allport, Chicago.—p. 118.
Ophthalmic Education and Text Books. C. Loeb, Chicago.—p. 121.
Keratoconus Consecutive to Vernal Conjunctivitis. J. de J. Gonzalez Leon, Guanajuato, Mexico.—p. 127.
Five Ciliae in the Anterior Chamber. A. E. Bulson, Jr., Fort Wayne, Ind.—p. 128.
Unilateral Progressive Myopia. A. O. Pfingst, Louisville.—p. 129.

American Journal of Physiology, Baltimore

February, 1920, 51, No. 1

- *Studies on Cerebrospinal Fluid. F. C. Becht, Chicago.—p. 1.
*Id. F. C. Becht and P. M. Matill, Chicago.—p. 126.

Studies on Cerebrospinal Fluid.—Becht reports his results of a critical study of the methods employed in the observations on the cerebrospinal fluid, detailing the status of the formation and movements of cerebrospinal fluid; the mechanical factors influencing the cerebrospinal fluid; the normal rate of the formation of the cerebrospinal fluid and its absorption, and the effect of drugs on arterial, venous and fluid pressures.

Becht and Matill report the results of experiments undertaken to determine what effect the injection of tissue extracts has on the cerebrospinal fluid and, particularly, whether or not they possess a specific stimulating action, producing an actual increase in the amount of fluid produced. They found that nearly all tissue extracts have a depressor effect on the vascular system; extracts of suprarenal and of the posterior lobe of the hypophysis have a pressor effect.

Archives of Neurology and Psychiatry, Chicago

March, 1920, 3, No. 3

- *Morbi Neurales: An Attempt to Apply a Key Principle to Differentiation of Major Groups. E. E. Southard and H. C. Solomon, Boston.—p. 219.
Functions of Cerebrospinal Fluid; Spinal Drainage and Intraspinal Injections of Arsphenamized Serum. F. X. Dercum, Philadelphia.—p. 230.
*Case of Myxedematous Psychosis. S. Uyematsu, Hathorne, Mass.—p. 252.
Sensory Changes in Injuries of Musculospiral Nerve. A. S. Hamilton, Minneapolis.—p. 277.

Morbi Neurales: Key Principle to Differentiation of Major Groups.—A scheme of classification of nervous diseases is offered by Southard and Solomon. Five main groups are subdivided, and each subdivision is further divided. The main groups are: (1) infections; (2) historrhages, focal destruction (noninfectious); (3) neuronatrophies, sclerosis ("classical degenerations"); (4) imbalance exogenous (neurogenous); (5) miscellaneous, the algias, migraine, vertigo, tics, spasms, hydrocephalus, etc.

Case of Myxedematous Psychosis.—Uyematsu presents a case of typical myxedematous psychosis which showed, together with known symptoms, marked disturbance of coordination, vertigo and somnolence. The thyroid gland was found extremely atrophic with the gland tissue replaced by connective tissue fibers and with no isthmus. The remaining gland tissue was infiltrated by lymphatic cells. The author suspects some etiologic relationship between the congenital factor and this disease. The pituitary body was smaller than

normal, though microscopically there was no evidence of atrophy. The right ovary was removed ten years ago, the left remained atrophic, showing an evidence of chronic inflammatory process. Uyematsu suspects, having seen a similar condition of ovaries in a former case of the Danvers (Mass.) State Hospital series, some etiologic factors in certain diseased conditions of the ovaries. The pathologic changes in the brain and the cerebellum consist of arteriosclerotic alterations, general senile changes and cell changes associated with the edematous condition. The author attributes the arteriosclerotic alterations and the general senile changes to the effect of the myxedematous disease. The cell change associated with the edematous condition is considered as pathognomonic. Uyematsu believes also that there is a possible correlation between the marked atrophy of the cerebellum and the clinical symptoms of disturbed coordination and of vertigo.

Florida Medical Association Journal, Jacksonville

February, 1920, 6, No. 8

- Influenza and Its Relation to Pregnancy. R. R. Kime, Lakeland.—p. 150.
Extraction of Ureteral Stones by Non-Cutting Methods. E. P. Merritt, Atlanta.—p. 153.
Physician and the Harrison Law. E. B. Bowen.

Journal of Experimental Medicine, Baltimore

Feb. 1, 1920, 31, No. 2

- Mycosis of Bovine Fetal Membranes Due to Mold of Genus *Mucor*. T. Smith, Princeton, N. J.—p. 115.
*Experiments on Nasal Route of Infection in Poliomyelitis. S. Flexner and H. L. Amoss, New York.—p. 123.
*Etiology of Yellow Fever. X. Comparative Immunologic Studies on *Leptospira Icteroides* and *Leptospira Icterohaemorrhagiae*. H. Noguchi, New York.—p. 135.
*Id. XI. Serum Treatment of Animals Infected with *Leptospira Icteroides*. H. Noguchi, New York.
*Sterilization of Lipovaccines. P. A. Lewis and F. W. Dodge, Philadelphia.—p. 169.
*Coagulation in Embryonic Blood. V. E. Emmel, S. A. Levinson and M. E. Fisch, Chicago.—p. 177.
Crescentic Bodies in Aestivo-Autumnal Malaria; Their Migration and Attachment to Surface of Red Corpuscle. M. R. Lawson, New London, Conn.—p. 201.
The Hemic Basophil. G. S. Graham, Albany.—p. 209.

Nasal Route of Infection in Poliomyelitis.—The experiments described by Flexner and Amoss relate to the conditions underlying the states of susceptibility and refractoriness to infection with the virus of poliomyelitis applied to the nasal mucosa. The authors found that an effective nasal mucous membrane prevents the passage of the energetically applied virus to the brain and spinal cord. The protective power possessed by the nasal mucosa is not in itself adequate to prevent infection with the virus placed on it, since slight injury to such independent structures as the meningeal-choroid complex favors the passage of the virus from the nose to the central nervous organs. The normal nasal mucosa is, therefore, an invaluable defense against infection with the virus of poliomyelitis; and the number of healthy and chronic carriers of the virus is probably determined and kept down through the protective activities of this membrane. Antiseptic chemicals applied to the nasal mucosa on which the virus has been deposited exhibit no great protective action and are of doubtful value. Indeed, it is not impossible that to the extent to which they may affect unfavorably the destructive properties of the nasal mucosa, they may be even objectionable. Infection with the virus of poliomyelitis applied to the nasal mucosa under conditions favorable to the extension to the central nervous organs and multiplication there may be blocked or prevented by the injection of poliomyelitic immune serum into the blood. While the exact manner and site of attack of the immune serum on the virus is somewhat conjectural, when all the available data are considered, it seems probable to Flexner and Amoss that the meeting place of the virus and immune serum is in the subarachnoid space.

Immunologic Studies on Yellow Fever.—It is stated by Noguchi that monovalent immune serums prepared by several successive injections in an animal naturally refractory to *Leptospira icteroides* possess the power to agglutinate in

vitro not only the homologous strains, but also all other strains of *icteroides* tested. On the other hand, a slight effect, or none at all, has been observed when these immune serums have been mixed in vitro with various strains of *Leptospira icterohaemorrhagiae*. A similar relation exists between the monovalent anti-icterohemorrhagic serums and the various strains of *Leptospira icteroides*; that is, there is a slight agglutinating effect in some instances on the *icteroides* strains, but it is never so strong as that occurring in tests against the *icterohemorrhagic* strains. The Pfeiffer reaction gave a sharper differentiation between the two groups, for in most instances the phenomenon was specific for the group. There were occasional doubtful reactions, but not enough to warrant a confusion of the two groups. Noguchi is of the opinion that there is not much doubt that an *icteroides* attack brings about, in some instances at least, a certain degree of resistance to the *icterohemorrhagic* infection. Hence, the study of the phenomena of active immunity strongly indicates that *L. icteroides* is closely related immunologically to *L. icterohaemorrhagiae*.

Serum Therapy in Yellow Fever.—The use of a polyvalent immune serum of high potency in the treatment of an experimental infection of guinea-pigs with *Leptospira icteroides* Noguchi found to be of definite advantage in checking the progress of the infection. When administered during the period of incubation, the serum was found capable of completely preventing the development of the disease, although on subsequent examination hemorrhagic lesions of greater or less number and extent were found in the lungs of the guinea-pigs which survived. Moreover, the serum modified the course of the disease, and when used in the early stages of infection prevented a fatal outcome. Employed at a later stage, however, when jaundice and nephritis had been present for several days and the animal was near collapse, the serum had no perceptible beneficial effect.

Lipovaccines.—Pneumococcus lipovaccine, according to Lewis and Dodge, confers a definite protection against pneumococcus infection in mice. The protective quality is not destroyed, and apparently is not greatly diminished, by heating to 130 C. for three hours or 120 C. for twelve hours. Typhoid lipovaccine gives rise to the formation of agglutinins in rabbits but to a lesser degree than saline suspensions. The antigenic qualities of the typhoid lipovaccine are greatly injured by heating to 130 C. for three hours.

Influence of Blood Platelets on Coagulation of Blood.—The fact that the average coagulation time of the blood (about twenty-three minutes) of pig embryos represents a coagulation time six to eight times greater than that obtained for the adult, suggested to Emmel and his associates that the number of blood platelets might be responsible. They found that numerically the blood platelets varied from 415,000 to 800,000 per cubic millimeter, a content not differing in any significant degree from that of the adult. The addition of platelet material obtained from adult pig blood reduced the coagulation time for embryonic blood to an average of 8.4 minutes, a decrease of 75 per cent. The addition of 2 drops of 0.5 per cent. calcium chlorid solution reduced the coagulation time for embryonic blood to an average of 10.3 minutes, a reduction of more than 50 per cent. The addition of tissue extract to embryonic blood reduced the coagulation time to an average of 3.7 minutes, a time essentially equivalent to that obtained for adult blood. The clot was of a much firmer character than that obtained either in the normal coagulation or in the calcium experiments. Chemical analysis demonstrated a calcium content in embryonic blood in excess of that of the adult, in the proportion of 7:5. On the whole, the results of this study suggest that the normal coagulation of embryonic blood, as far as bile is concerned, involves a process comparable with that obtained after the addition of tissue extract or kephalin, but on a small scale. In the embryonic blood in vitro, through the gradual disintegration of cellular elements, a certain amount of tissue substance (kephalin [?]) is slowly set free in the plasma, neutralizing the bile and ultimately liberating a sufficient amount of calcium to bring about coagulation.

Hemic Basophil.—Graham suggests that the basophil is a degenerated or degenerating cell. It is probably derived from the eosinophilic cells and, perhaps, in rare cases from those of neutrophilic type.

Journal of Laboratory and Clinical Medicine, St. Louis

February, 1920, 5, No. 5

- *Bacteriology and Pathology in Six Cases of Lethargic Encephalitis. P. F. Morse and E. S. Crump, Detroit.—p. 275.
- *Protein Fever: Effect of Egg White Injection on Dog. S. J. Cohen, Chicago, Ill.—p. 285.
- *Leukocytes in Anaphylaxis of Serum Sickness. J. H. Barach, Pittsburgh.—p. 295.
- *Studies in Metabolic Changes in Experimental Tetany. D. T. Togawa, Tokyo, Japan.—p. 299.
- *Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease of White Rat. H. P. Hoskins and A. L. Stout, Detroit.—p. 307.
- Bacteriology and Control of Contagious Nasal Catarrh (Snuffles) of Rabbits. N. S. Ferry and H. P. Hoskins, Detroit.—p. 311.
- Toxicity of Lung Extracts. P. Morse, Detroit.—p. 319.
- *Simplified Method for Detection and Estimation of Distribution of Morphin. A. Morgulis and V. E. Levine, Omaha.—p. 321.

Bacteriology and Pathology of Lethargic Encephalitis.—Cultures made by Morse and Crump from fluid aspirated from the lateral ventricles of the brain in six cases resulted in securing uniformly pure cultures of a nonmotile coccus, small in young cultures, as large as a staphylococcus in old cultures, with a tendency to grow in diplococcus and tetrad forms and to bunch in small clusters. It divides similarly to a staphylococcus in three planes, stains readily with the aniline dyes, and is gram-positive. The pathologic findings seem to indicate that "encephalitis lethargica" is not a true encephalitis in the sense that general paresis or the cerebral form of poliomyelitis are examples of encephalitis, because ganglion and pyramidal cell destruction does not characterize lethargic cases. But it is a typical example of low grade "meningomyelitis," the characteristic lesions being in the meninges and white matter of the basal ganglia, pons and upper cord. Marie, in 1890, described cases similar to "encephalitis lethargica" and called them "acute multiple sclerosis." From a pathologic, as well as clinical, point of view, Morse and Crump feel that this term has much to justify its use.

Effect of Egg White Injection.—Repeated subcutaneous injections of egg white in guinea-pigs produce a constant fever, associated with most of the signs of infection, whereas the same procedure in dogs does not affect the temperature curve and does not produce fever. Cohen is unable to explain the difference of the reactions.

Leukocytes in Anaphylaxis of Serum Sickness.—In a case of serum sickness with a delayed anaphylactic reaction recorded by Barach, the blood showed at the time of the anaphylactic reaction, a primary polynuclear leukocytosis followed by the appearance of myelocytes after the organism had appropriated the available leukocytes of the circulating blood, and at the same time an increased number of blood platelets. A leukopenia followed; at which time the polymorphonuclear counts were low and the mononuclears relatively high. The eosinophilia, which has been said to accompany anaphylactic reactions in general, was absent throughout. Therefore, Barach concludes that eosinophilia is not the criterion of an anaphylactic reaction.

Metabolic Changes in Experimental Tetany.—In parathyroidectomized dogs, showing typical tetanic symptoms, an acidosis condition was always observed by Togawa, and the antitryptic power and the nonprotein nitrogen content of the blood serum were usually increased. In thyroidectomized dogs, showing no tetanic symptoms, however, an acidosis condition was never observed. On the contrary, a slight alkalosis condition was sometimes induced. The antitryptic power and the nonprotein nitrogen content of the blood serum remained almost unchanged.

Bacillus Bronchisepticus as Cause of Infectious Respiratory Disease.—Bacillus bronchisepticus was isolated by Hoskins and Stout from the nostrils, nasal sinuses, trachea, lungs and heart blood of white rats affected with a serious disease of a distemper-like character. The organism was recovered in pure culture in about one half the cases. Other organisms were found in the nostrils and nasal sinuses, and

once in the trachea. Agglutination tests pointed to the identity of the rat organism and *B. bronchisepticus* from a canine source. The serum of rats affected with the disease agglutinated both homologous as well as heterologous strains of *B. bronchisepticus* in comparatively high dilutions. One rat serum showed strong agglutination at a dilution of 1:1,024.

Simplified Method for Detection and Estimation of Distribution of Morphin.—The presence of morphin in food, or in tissues and body fluids has been determined by Morgulis and Levine by heating with 2 per cent. tartaric acid (if solid, the material should first be ground or finely minced) to convert all morphin into the soluble tartrate. The mixture is rapidly cooled, preferably on ice, to solidify the fatty material. The solid residue is removed by straining through cheese cloth, and is washed until the washings are no longer acid to litmus. The liquid, after being filtered through paper, is evaporated to a pasty consistency. The tartrate is then decomposed by the addition of an excess of solid bicarbonate which sets the alkaloid free. The evaporation is then continued to complete dryness, and the mass is powdered and extracted with chloroform to remove the free morphin. The volume of the chloroform extract is noted, and the smallest quantity of the extract is found which on evaporation (in a porcelain crucible over the water bath) leaves a residue which yields a definite morphin test. In this way the relative amount of morphin in several extracts can be determined. Besides knowing the limit of sensitivity of the reaction an approximate estimate of the amount of morphin in the original sample is possible. Inasmuch as the authors found that morphin, whether given subcutaneously or by mouth, is widely distributed throughout the animal body, finding its way into almost every tissue, they state that it is not advisable to limit the toxicologic examination for morphin to the alimentary tract alone, an examination of at least the kidney and urine and liver being indispensable.

Modern Hospital, Chicago

February, 1920, 14, No. 2

- Home for Tuberculous on San Francisco Bay. H. H. Meyers, C. Bush and O. L. Tiedebohl.—p. 83.
- Hospital and Community. C. G. Parnall, Ann Arbor.—p. 92.
- Hospital and Home Isolation of Infectious Diseases: Their Relatives. D. L. Richardson, Providence.—p. 99.
- Need of War Trained Physiotherapy Experts in Hospital. F. J. Cotton, Boston.—p. 101.
- Making Toys for Children out of Newspapers and Paper Bags. M. H. Barker, Worcester.—p. 103.
- Anesthetics—Their Use, Value and Methods of Administration. H. A. Britton, Minneapolis.—p. 106.
- How to Meet Need of Rural Hospitals. J. J. Ross, Middlebury.—p. 108.
- Air Control and Reduction of Death Rate after Operations. E. Huntington, New Haven.—p. 111.
- Misericordia Hospital (Philadelphia) Distinguished by Beauty of Grounds, Structure and Interior. J. O'Grady, Washington, D. C.—p. 115.
- Hospital Survey in Interchurch World Movement. F. Clare, New York.—p. 123.
- Blind Men Taught New Occupations at Chicago Lighthouse. E. L. Swift, Chicago.—p. 126.
- Group Practice Problem. O. V. Huffman, Brooklyn.—p. 127.
- Better Eye, Ear, Nose and Throat Service in Hospitals. F. Allport, Chicago.—p. 129.
- Health Problems Among Wealthy Rural Populations. E. E. Wick, Worthington.—p. 131.
- Reconstruction of Hospitals from Nursing Standpoint. E. A. Greener, New York.—p. 134.
- Detecting Hospital Food Waste. E. E. Irons, Chicago.—p. 143.
- Social Service Dietetics in Relation to Jewish Problems. M. L. Schapiro, New York.—p. 147.
- Statewide Cooperation in Industrial Health Education. A. M. Staebler, Boston.—p. 158.

New Orleans Medical and Surgical Journal

February, 1920, 72, No. 8

- Medical Aspect of Enteroptosis. A. E. Fossier, New Orleans.—p. 444.
- Food Conditions in Europe; Etiology of Pellagra. S. Harris, Birmingham.—p. 452.
- Results of Unerupted and Impacted Teeth in Adult in Reference to Neuritis and Other Lesions. A. G. Friedrichs, New Orleans.—p. 467.
- Eye Examination as Factor in Diagnosis of Transmitted Hereditary Syphilis. T. J. Dimitry, New Orleans.—p. 474.
- Syphilitic Fibrosis of Penis (Keloid Type) in Negro; Report of Case. H. W. E. Walther, New Orleans.—p. 481.

- Prophylaxis, Pathology, Tongue Cleansing, Tongue Indications. J. J. Sarrazin.—p. 483.
Persistent Occipito-Posterior Positions. H. E. Miller, New Orleans.—p. 494.
Considerations Suggested by Publications of Dr. Noguchi on Experimental Yellow Fever. M. E. Lebrado, Havana, Cuba.—p. 499.

New York Medical Journal

Feb. 14, 1920, **111**, No. 7

- Fluctuations of Thyrosuprarenal Activity in General Diseases. C. E. de M. Sajous, Philadelphia.—p. 265.
Pineal Body: Structure, Function and Diseases. S. E. Jelliffe, New York.—p. 269.
Endocrine Tropisms; Thyrotropisms. D. M. Kaplan, New York.—p. 275.
Thyroidal Constipation. S. G. Strauss, New York.—p. 280.
Hyperthyroidism. A. B. Webster, Philadelphia.—p. 283.
Treatment of Goiter. H. L. Foss, Danville, Pa.—p. 285.
Endocrinologist and Internist. W. W. Herrick, New York.—p. 286.
Toxic Goiter. J. C. O'Day, Honolulu.—p. 287.
Treatment of Early Hyperthyroidism. F. L. Meredith, New York.—p. 289.

New York State Journal of Medicine

February, 1920, **20**, No. 2

- Blood Clot Dressing in Mastoidectomy: Modified Technic Which Insures Primary Painless Healing Without Deformity. G. E. Davis, New York.—p. 38.
Aural Significance of Vertigo. I. W. Voorhees, New York City.—p. 42.
Neutrophilic Granules of Circulating Blood in Health and in Disease. G. S. Graham, Albany.—p. 46.

Northwest Medicine, Seattle

February, 1920, **19**, No. 2

- Clinical Manifestations in Gallbladder Disease. F. Smithies, Chicago.—p. 31.
Special Requirements in Nutrition. G. E. Burget, Portland.—p. 39.
Relationship Between General Digestive Conditions and Mouth Conditions. M. M. Null, Seattle.—p. 43.
Vincent's Angina: Report of Eighty Cases. C. L. Shields, Salt Lake City.—p. 45.
Plea for Early Operative Intervention in Acute Suppurative Affections of Mastoid. O. M. Rott, Spokane.—p. 46.
Nerve Block Anesthesia in Superior Thyroid Pole Ligation. J. Hunt, Seattle.—p. 49.

Public Health Journal, Toronto

February, 1920, **11**, No. 2

- Child Health. A. Brown, Toronto.—p. 49.
Some Problems of Child Hygiene. M. Sherwood, Baltimore.—p. 54.
Antenatal Work and Stillbirths. J. G. Gallic, Toronto.—p. 62.
Plan for More Effective Federal and State Health Administration. F. L. Hoffman, Newark, N. J.—p. 88.
Raising Standards of Living as Weapon in Anti-Tuberculosis Campaign. B. B. Burritt, New York.—p. 89.

Pennsylvania Medical Journal, Athens

February, 1920, **23**, No. 5

- *Intussusception: Report of Case. S. E. Tracy, Philadelphia.—p. 247.
*Epidemic Cerebrospinal Meningitis. J. Sadler, Philadelphia.—p. 250.
*Prevention of Communicable Respiratory Diseases Based on Observations in Army Camps. O. H. Petty, Philadelphia.—p. 255.
*Cardiovascular Phenomena Associated with War Neuroses. G. M. Piersol, Philadelphia.—p. 258.
*Significance of Heart Murmurs Based on Examinations in U. S. Army. E. H. Goodman, Philadelphia.—p. 263.
*Early Recognition of Diseases of Heart. T. McCrae, Philadelphia.—p. 267.
Advantages of General Over Local Anesthesia in Tonsillectomy. H. M. Becker, Sunbury.—p. 273.

Intussusception.—In the case reported by Tracy, the intussusception took place high up in the small bowel and the mass was tucked over against the lateral wall of the abdomen on the left side and gave a distinct area of dullness and resistance over the entire length of the descending colon.

Epidemic Cerebrospinal Meningitis.—This paper was abstracted in THE JOURNAL, Nov. 15, 1919, p. 1549.

Prevention of Communicable Respiratory Diseases.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Cardiovascular Phenomena Associated with War Neuroses.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Significance of Heart Murmurs.—This paper was abstracted in THE JOURNAL, Nov. 22, 1919, p. 1634.

Early Recognition of Diseases of Heart.—McCrae says that there are no set rules which we can apply to the early

recognition of cardiac disease in every case. The determination to observe carefully and investigate thoroughly will lessen mistakes. It is wiser to start with the idea that there is some disturbance present and prove the contrary than to make light of symptoms and fail to recognize changes which might be aided by early treatment.

Psychobiology, Baltimore

February, 1920, **2**, No. 1

- Temporal Maze and Kinesthetic Sensory Processes in White Rat. W. S. Hunter, Lawrence, Kans.—p. 1.
Behavior of White Rats in Presence of Cats. C. R. Griffith, Champaign.—p. 19.
Biologic Basis of Association of Ideas and Development of Perception. K. Dunlap, Baltimore.—p. 29.
Studies of Cerebral Function in Learning. K. S. Lashley, Minneapolis.—p. 55.

South Carolina Medical Ass'n Journal, Greenville

February, 1920, **16**, No. 2

- Röntgen-Ray Study of Esophageal Diverticula. R. Taft, Charleston.—p. 27.
Anaphylaxis and Anti-Anaphylaxis. C. V. Akin, Columbia.—p. 32.
Annual Report of the State Health Officer. J. A. Hayne, Columbia.—p. 50.

West Virginia Medical Journal, Huntington

February, 1920, **14**, No. 8

- Joseph Price. A. P. Butt, Elkins.—p. 281.
To Hell with Sanitation Anyway. H. G. Steele, Bluefield.—p. 288.
Relations of Physician to Hospital. J. R. Hunter, Huntington.—p. 293.
Ocular Lesions Due to Focal Infections. H. H. McGuire, Winchester.—p. 295.
Principles Preliminary to Treatment of Functional Nervous Disorder. T. A. Williams, Washington, D. C.—p. 300.

Wisconsin Medical Journal, Milwaukee

February, 1920, **18**, No. 9

- Infection of Kidney. H. Cabot, Boston.—p. 341.
Value of Military Surgery in Civilian Practice. G. W. Crile, Cleveland.—p. 349.
Tuberculosis with Pregnancy. C. H. Davis, Milwaukee.—p. 355.
Conservation of Vision. G. I. Hogue, Milwaukee.—p. 361.
Mouth Infection as Source of Systemic Diseases. M. N. Federspiel, Milwaukee.—p. 365.
Etiology of and Prophylactic Inoculation in Influenza. E. C. Rosenow, Rochester, Minn.—p. 370.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

Feb. 14, 1920, **1**, No. 3085

- Modern Treatment of Functional Nervous Disorders. B. Hart.—p. 207.
*Appendicectomy by a New Route. R. H. A. Whitelocke.—p. 211.
*Results of Protective Inoculation Against Influenza in British Army at Home, 1918-1919. W. B. Leishman.—p. 214.
Roentgen-Ray Treatment of Neoplasms. G. E. Vilvandre.—p. 215.
Chronic Infection of Facial and Postnasal Lymphoid Tissue in Children. P. W. Leathart.—p. 217.
Ruptured Gastric Ulcer in a Man Aged 78; Laparotomy: Recovery. A. Fullerton.—p. 218.
*Method of Treating Dhobie Itch. C. J. Glasson.—p. 219.

Appendicectomy by a New Route.—The operation described by Whitelocke removes the appendix through the right iliac fossa in cases in which no general exploration of the abdominal cavity is called for—that is, in acute cases rather than chronic cases. The incision is made one-half inch or less internal or medial to and parallel with the anterior superior spine of the ilium, or as near to it as practicable. The cut is carried above and below this point to an equal extent and parallel with the iliac crest and spine and the attached Poupart's ligament. The length of the incision usually need not be greater than 2½ inches. The cut at once divides the skin, subcutaneous fascia, and aponeurosis of the external oblique muscle to its full length. At this stage a white line of varying distinctness may usually (roughly in about 58 per cent. of cases noted) be seen passing across the muscle almost horizontally, in a direction from the anterior superior spine of the ilium to the middle line of the body; this line which is bloodless, indicates a natural division of the muscle into an upper and lower section. With this line as a guide

the thick fibers of the muscle are incised and separated. The subjacent transversalis muscle is then similarly treated. In uncomplicated cases, and whenever there is no evidence of suppuration, as may usually be determined by palpation of the peritoneum through the transversalis fascia, this fascia and the peritoneum are divided in a direction parallel with the skin incision, medial or internal to the reflection of the parietal peritoneum on to the iliac fossa, deep to and parallel with Poupart's ligament. Where, however, an abscess is present or suspected it is safer to turn the peritoneum inward or medialward from its seat of reflection behind Poupart's ligament and to open it posteriorly from the iliac fossa. The transversalis fascia and peritoneum may be cut transversely as with the deep muscles, if the incision is likely to require enlargement. When the abdomen is opened the viscus first seen is generally (86 per cent. of cases noted) large intestine, either the first part of the ascending colon or, less frequently, the cecum. The cecum with its appendix is delivered through the wound. The appendix is removed in the usual manner and the wound is closed in layers.

Results of Protective Inoculation Against Influenza.—The results recorded by Leishman confirm and even strengthen his original anticipations, that at least a moderate degree of protection against infection might be expected, while more decidedly beneficial effects might be hoped for in a diminution of both the frequency and the gravity of the pulmonary complications.

Method of Treating Dhobie Itch.—Glasson claims to have treated many persons with Dhobie itch with success by a combination of roentgen rays and chrysophanic acid ointment (30 grains to 1 ounce of wool fat).

Dublin Journal of Medical Science

February, 1920, 3, No. 578

Sir Patrick Dun's Library. T. P. C. Kirkpatrick.—p. 49.

Eusol and its Intravenous Uses. A. L. Gregg.—p. 68.

*Influence of Salts and Other Substances on Agglutination. V. M. Synge.—p. 76.

Influence of Salts and Other Substances on Agglutination.—The substances experimented with by Synge were glucose (0.6 per cent. solution, and 6 per cent. solution); glycocoll (0.6 per cent. solution); alanine (0.6 per cent. solution) asparagin (0.6 per cent. solution and 6 per cent. solution). The conclusions drawn from his results are: 1. The presence of any substance in solution is not sufficient to cause agglutination. 2. Asparagin has a marked influence on agglutination. 3. Other amino-acids, e. g., alanine and glycocoll have no influence on agglutination. 4. Glucose has no influence on agglutination.

Edinburgh Medical Journal

February, 1920, 24, No. 2

Hypertonus of Sympathetic in Relation to Intestinal Toxemia. J. J. G. Brown.—p. 71.

Binet Scale for the Blind. W. B. Drummond.—p. 91.

Introduction to Psychotherapy. G. Robertson.—p. 100.

Tuberculides and Their Relation to Tuberculosis of Skin and Other Organs. R. C. Low.—p. 114.

Metal Disc in the Esophagus, Esophagotomy; Recovery. R. C. Alexander.—p. 120.

Indian Medical Gazette, Calcutta

January, 1920, 55, No. 1

Impassable Strictures of Urethra. J. Roberts.—p. 1.

Epidemic of Fifty-Four Cases of Relapsing Fever in Birjand, East Persia. A. S. Fry.—p. 2.

Alimentary Rest Treatment of Diabetes. E. E. Waters.—p. 8.

Quinin Prophylaxis and Treatment of Malaria in Coolie Population of Assam. C. E. P. Forsyth.—p. 12.

*Cinchonidin in Malaria. D. S. Ollenbach.—p. 14.

Influenza. B. Singh.—p. 15.

Cinchonidin in Malaria.—Twenty-four patients were injected deep in the deltoid with cinchonin bihydrochlorid. The first dose for adults was 7 minims and subsequent ones 10 minims or about 3 and 5 grains, respectively. From two to four injections were given on successive days where possible, or about 8 to 18 grains. All the cases were genuine malaria. No local or constitutional disturbance of any kind took place, except that a man who was given six injections had rather a painful arm, and another was cinchonized the very evening he was first injected; but both symptoms passed

away quickly. Quinin and arsenic were given in two obstinate cases as after-treatment. There were two relapses, showing 91.7 per cent. recoveries out of twenty-four cases.

Journal of Laryngology, Rhinology and Otology, London

February, 1920, 35, No. 2

*Otomycosis. A. Cheatle.—p. 33.

*Carcinoma of Postcricoid Region (Pars Laryngea Pharyngis) and Upper End of Esophagus. A. L. Turner.—p. 34.

Sellar Decompression for Pituitary Tumors. W. Howarth.—p. 49.

Brain from a Patient Who Presented Nystagmoid Movements in Pharynx and Larynx. A. B. Kelly.—p. 53.

Simple Method of Recording Diagrammatically Movements of Vocal Cords, with Special Reference to Tremors. (Epidiastroscope Demonstration.) A. B. Kelly.—p. 54.

Epithelioma of Larynx Removed by "Window" Resection of Thyroid Cartilage. H. L. Lack.—p. 54.

Otomycosis.—Cheatle has seen seven cases of otomycosis in nine months. In all of these one ear only was affected, and the trouble involved the deep meatus. They were easily diagnosed, presenting textbook symptoms and signs, and were quickly cured by textbook treatment. The clinical diagnosis was verified by microscopic examination.

Carcinoma of Postcricoid Region and Upper End of Esophagus.—Turner reviews the history of 140 cases; in ninety-eight of these the tumor was situated in the post-cricoid region. Most of these patients (86 per cent.) were females.

Lancet, London

Feb. 14, 1920, 1, No. 5033

*Blood Vessels and Pressure. L. Hill.—p. 359.

Results of Protective Inoculation against Influenza in the Army at Home, 1918-1919. W. B. Leishman.—p. 366.

*Complement Fixation Experiments in Influenza. H. J. B. Fry and C. Lundie.—p. 368.

Periodicity of Influenza. C. O. Stallybrass.—p. 372.

*Efficient and Economical Pylon. W. M. Johnston.—p. 373.

Three Cases of Acute Pancreatitis. G. P. Mills.—p. 376.

Traumatic Rupture of Intestine Without External Injury. G. M. A. Herzfeld.—p. 377.

*Intravenous Administration of Mercuric Iodid in Treatment of Syphilis. R. L. Spittel.—p. 378.

Blood Vessels and Pressure.—Not increased capillary pressure and filtration are in Hill's opinion the cause of edema, but stagnation of flow with consequent oxygen want and increased imbibition.

Complement Fixation Experiments in Influenza.—An antigen prepared by Fry and Lundie from an organism isolated in the third wave of an epidemic showed fixation of complement with serums derived from cases of influenza, both recent and those occurring in previous waves of the epidemic. This complement fixation is absent in the case of serums from normal individuals who have never had influenza. It is absent in the case of serums from individuals who are suffering from other specific diseases and are free from any recent history of influenza. An antigen prepared from another organism showed no fixation of complement with serums from cases of influenza.

Efficient and Economical Pylon.—The important features of this pylon are: (1) a bucket molded to fit the stump, and supported by a fiber cone with a satisfactory rim at the top; (2) simplicity of design; (3) light weight and low cost of production.

Intravenous Administration of Mercuric Iodid in Treatment of Syphilis.—An experience of over 4,000 of these injections, during a period of four years, convinces Spittel that this procedure is a valuable adjunct to the treatment of syphilis with arsphenamin; the combination establishing a cure (as gaged by Wassermann tests, provocative and otherwise, at varying intervals) more quickly and permanently than by any other method. The solution has the following composition: mercuric iodid, 50 grains; sodium (or potassium) iodid, 8 drams; phenolphthalein (0.5 per cent. solution), 20 minims; sodium hydrate (25 per cent. solution), about 2 drams; distilled water, to 40 ounces. The dose for an adult is from 8 to 12 c.c. given intravenously. The injection is tolerated well. The results are not only far quicker than those obtained with mercury and iodids given by any

other methods, but often even a single injection produces an effect almost as phenomenal as arsphenamin. In nerve syphilis, especially, some of the finest results are obtained. The number of injections and the interval between them vary with the particular case. An ordinary case of secondary syphilis may be treated with five or six injections each of arsphenamin and mercuric iodid, given at intervals of from seven to ten days alternately, in varying sequence or in successive courses. Often after such a series a negative Wassermann reaction is permanently obtained; if not, further courses are given to meet particular needs.

Practitioner, London

February, 1920, 104, No. 2

- *Phantom Limbs of Amputés. E. M. Corner.—p. 81.
- Painless Operations. P. L. Mummery.—p. 89.
- Medicolegal Notes. J. Colli. Cont'd.—p. 98.
- Heart in Acute Febrile Diseases. H. L. Cronk.—p. 102.
- *Estimation of Sugar in Blood in Diagnosis and Treatment of Diabetes. P. J. Cammidge.—p. 114.
- Syphilis of Throat, Nose, Ear; Diagnosis and Treatment. D. Guthrie.—p. 131.
- *Pernicious Anemia at an Advanced Age. G. Ward.—p. 145.
- Ionization. M. Wardle.—p. 149.
- Ruptured Popliteal Aneurysm. C. P. Lankester.—p. 151.
- *Cerebrospinal Fever Relapse. P. N. Randall.—p. 152.

Phantom Limbs of Amputés.—More than 500 cases were investigated by Corner. His enquiries established these facts: 1. Phantoms made their appearance immediately after operation. 2. They were very unusual in the young, but were more frequent among the older patients. They were of much greater frequency and severity in military than in civil practice. 3. As a rule, they obtruded themselves less in frequency and sensation as time went on, and within eight months or a year the patient slept well, did not dream, and was only conscious of the phantom limb when he thought of it. It was a sign of considerable clinical importance if the patient was undisturbed by his missing limb in sleep and unaffected in dreams. The presence of or variations in the phantoms are often of considerable clinical value, particularly in conjunction with other physical signs, in distinguishing whether the symptoms in a particular patient are physical or psychic, bodily or mental, peripheral or central.

Estimation of Sugar in Blood in Diagnosis and Treatment.—A study of more than 700 cases of diabetes by Cammidge has shown that there is no constant blood sugar level for the appearance of sugar in the urine in quantities recognizable by ordinary tests; also, that there is no definite relationship between the percentage of sugar in the blood and either the percentage or total amount of sugar excreted by the kidneys. Patients with a permanently high blood sugar may pass comparatively little sugar in their urine, while, in some instances, a normal, or even a subnormal, blood sugar curve may be associated with frank glycosuria. In either condition, examination of the urine alone does not give a correct picture of the case, and, if it is not checked by blood sugar estimations under controlled conditions, may readily lead to mistakes in diagnosis and treatment. As a rule, young diabetics have a lower threshold point for clinical glycosuria than those of middle age, and the threshold rises with advancing years. It is, therefore, important that the presence of even small amounts of sugar in the urine of persons of middle age should not be dismissed as of little significance, unless a series of blood tests have shown that their tolerance for carbohydrates is not seriously defective. Hyperglycemia may exist without clinical glycosuria, that is with an insufficient percentage of sugar in the urine to give the ordinary tests for sugar. The reverse condition, glycosuria with a normal or subnormal percentage of sugar in the blood, is not as uncommon as is generally supposed. Cammidge's observations suggest that many cases of latent diabetes are essentially hepatic in origin, and that so long as the patient avoids sugar and foods containing sugar as such, he may take any starchy food in moderation without harm, provided that the protein and fat content of the diet are also controlled. He warns that too hasty a diagnosis of diabetes should not be made from the presence of an excess of sugar in the blood nor even from an abnormal blood sugar curve after a test

meal of sugar, for other diseases may be associated with hyperlycemia. In the later stages of nephritis, for example, the percentage of sugar in the blood is usually high, often equalling the amount met with in severe diabetes when uremia is imminent, but the blood picture is one of complete metabolic failure, and the end products of nitrogen metabolism are correspondingly increased. Some excess of sugar in the blood is usually found in patients suffering from cardiovascular diseases with high blood-pressure, even when there is little or no indication of renal disturbance. Carcinoma is another condition in which it is said that there is often moderate hyperglycemia.

Pernicious Anemia at an Advanced Age.—Ward's patient was 85 years of age. Her family history was wholly negative, and she had always enjoyed good health until she reached the age of 82, when she first noticed a progressively increasing weakness, nausea and flatulence. When Ward first saw her, which was six months before her death, she presented characteristic symptoms which permitted a very confident diagnosis of pernicious anemia before the blood was examined. She also had certain gastro-intestinal symptoms with glossitis, and numbness of the extremities. The patient's chief complaints were of sore tongue and pain in the abdomen. Ward states that chronic or acute glossitis with anemia is practically always pernicious anemia.

Relapse in Cerebrospinal Fever.—Randall reports a case in a man, aged 33, in which a true relapse occurred, ten weeks after recovery from the original attack.

South African Medical Record, Cape Town

Jan. 24, 1920, 18, No. 2

- Tympanic Membrane: Its Correct Form and Reflecting Areas. J. L. Aymard.—p. 21.
- *Cirrhosis of Liver; Suggestion as to Treatment. F. P. Fouche.—p. 24.

Treatment of Cirrhosis of Liver.—Fouche suggests that in his case the subcutaneous injection of ascitic fluid, withdrawn from the patient, prolonged life.

Archives des Mal. du Cœur, etc., Paris

October, 1919, 12, No. 10

- *Analysis of the Normal Venous Curve. W. Janowski.—p. 433.
- *Dissociation of Pulse in Aortic Stenosis. L. Gallavardin and L. Tixier.—p. 447.
- The Circulation with Aeroparesthesia from Chilling. J. Cottet.—p. 457.

The Venous Pulse.—Janowski discusses the rational interpretation and nomenclature of the elements of the normal venous pulse tracing, according to the prevailing ideas as to their origin.

Dissociation of Pulse Findings.—The oscillogram and the auscultation findings did not parallel each other in the case reported by Gallavardin and Tixier in which aortic stenosis and aortic insufficiency were accompanied with pulsus tardus and anacrotism.

Archives de Médecine des Enfants, Paris

February, 1920, 23, No. 2

- *The Arterial Circulation in Infants. E. Lesné and L. Binet.—p. 69.
- *Inherited Syphilis and Dystrophies. V. Hutinel and H. Stévenin.—p. 77. Cont'n.
- Senile Skin in Children. Variot and Cailliau.—p. 106.
- Management of Acute Appendicitis. J. Comby.—p. 112.

Arterial Circulation in Infants.—Lesné and Binet found that the differential pressure increases with the infant's age, as also the arterial pressure in general. Feeding and crying raise the maximal pressure but sleep reduces it, as also gastro-intestinal derangement. The arterial circulation did not seem to be modified with mild infections and pleurisy. After feeding, the pulse dropped from 120 to 96. The pulse varied widely, but was over 100 in infants less than 4 months old; all after this age averaged 95. Testing the excitability of the vagus by the oculocardiac reflex induced more vigorous responses than in adults. Even in infants only 2 weeks old, the heart beat dropped from 120 or 130 to 90 when the pressure was applied to both eyeballs, but it ran up again at once. Inhalation of amyl nitrite caused pronounced vasodilation in infants 3 months old but not in infants less than a month old. This test is not borne well by infants.

Inherited Syphilis and Dystrophies.—In this second instalment, Hutinel and Stévenin discuss the direct, partial, and the indirect, generalized, dystrophies for which syphilis is responsible, and also the hereditary dystrophies, with examples of each. In some of the children the head is large, the veins in the scalp and chest are prominent, and there is occasional headache or there are signs of colitis, or the hands and feet show a tendency to cyanosis—all with positive Wassermann reaction. Under specific treatment the children began to thrive at once. The writers comment on the sclerosis and sensitization, and on the arousing of lesions from inherited syphilis by some accidental infection or intoxication, especially during epidemics of scarlet fever, diphtheria or typhoid. Grave symptoms are often noted from the liver, brain, pancreas or suprarenals which would be ascribed to the acute infectious disease if the positive Wassermann reaction did not suggest that syphilis had provided a point of lesser resistance. They have seen typhoid fever induce the flaring up of an old syphilis that had long been apparently extinct, and lead to a fatal termination. On the other hand, the syphilis may imprint an especially severe character on an acute disease, enhance its severity, prolong it and entail complications. When tuberculosis develops in a syphilitic, or the tuberculous acquire syphilis, the tuberculous lesions often tend to sclerosis, and may be favorably influenced by specific treatment and hygiene. Or the tuberculosis may pass into a torpid stage, with amyloid degeneration, the tuberculous lesions affecting preferentially the organs already impaired by the inherited syphilis.

Bulletin de l'Académie de Médecine, Paris

Jan. 27, 1920, 83, No. 4

*Lethargic Encephalitis. F. Widal.—p. 81.

*Hypernephroma in the Uterus. H. Hartmann.—p. 90.

*Electric Treatment of Tuberculous Osteitis. E. Doumer.—p. 93.

Undernutrition as Factor in Deficiency Disease Phenomena in Pigeons. A. Lumière.—p. 96.

Lethargic Encephalitis.—Widal observes that the virus causing this disease seems to affect scattered small patches of the nervous system, skipping the intervening areas. This imprints a peculiar physiognomy on the malady. In one case, typical ankle-clonus and the toe phenomenon were the only signs beyond the fever, somnolency and ptosis, with none of the other disturbances which usually accompany ankle-clonus.

Hypernephroma in the Uterus.—Hartmann does not know of any case on record like the one he reports in which a large tumor, evidently of aberrant suprarenal tissue, had developed in the uterus. The term corticosuprarenaloma seems preferable, he says, as tumors of this kind develop exclusively from aberrant suprarenal cortex cells. He knows of ten or twelve cases of such aberrant suprarenal cell tumors in the broad ligament and ovary. In the uterus case related, there were several local recurrences, but the suprarenals proper have shown no signs of disease during the three years to date.

Electric Treatment of Tuberculous Osteitis.—Doumer now announces that the cases he published eight years ago as cured by application of the high frequency current have had no recurrence since. The permanent efficacy of this treatment for tuberculous osteitis is thus established. In four of his later series of twenty cases the lesion was in the foot and of long standing. In the only two cases in which the treatment failed, the lesion was on the hand, and there was one recurrence in another case requiring repetition of the treatment. The sitting was for ten minutes daily or three times a week, the current 80,000 volts interrupted up to 800,000 or 1,000,000 times a second.

Bulletin Médical, Paris

Jan. 31, 1920, 34, No. 6

*Acute Purulent Pleurisy. C. Villandre.—p. 87.

*Chronic Empyema. A. Cauchoiy.—p. 91.

Suppuration in Traumatic Hemothorax. P. Ameuille.—p. 94.

Roentgen Ray Findings with Purulent Pleurisy. P. Cottenot.—p. 98.

Acute Purulent Pleurisy.—Villandre opens this pleurisy number of the *Bulletin* by describing the preferable technic for pleurotomy as the proper treatment for purulent pleurisy.

The condition of the lung and the general condition must be such as not to contraindicate the intervention, knowing the exact site of the abscess and draining at the lowest point. Another indispensable precaution is the determination of the micro-organisms involved: The tubercle bacillus contraindicates pleurotomy, while the streptococcus, associations of germs, and putrid pleurisy demand immediate pleurotomy. Pure pneumococcus pleurisy does not always require pleurotomy, he adds. Local anesthesia is all that is needed, except for restless young children. Rib resection must accompany the pleurotomy to allow removal of the false membranes with pneumococcus or streptococcus pleurisy. Provision for drainage should be ample, but managed so as not to promote the collapse of the lung. Antiseptic lavage or intermittent flushing of the cavity is necessary with the streptococcus or associated microbes or the germs of putrid or gangrenous pleurisy. As soon as the temperature is normal, breathing exercises should be begun and kept up and the spirometer used to combat the tendency of the lung to retract.

Chronic Empyema.—Cauchoiy discusses the reasons why empyema has so often resisted all treatment. Defective drainage or a persisting foreign body is usually to blame, a scrap of drain or of gauze or a chip from an instrument or piece of suture material—all of these have been found in empyemas. Osteitis of a rib close to the fistula may be a factor, and raying may reveal a second pus pocket. An instructive case is related by Picquet in which an empyema that had lasted for six years healed up at once when a secondary pus pocket in the lumbar region was incised and a long drain passed through this incision and up through the diaphragm into the pleura. The various methods for repair when suppuration has been arrested are compared. The prognosis is much better since Carrel-Dakin irrigation or insufflation of oxygen has been applied to these old cases.

Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 5, 1919, 43, No. 35

*Pathologic Arterial Tension. M. Villaret and L. Dufour.—p. 1018.

Epidemic of Paratyphoid from Laundering without Boiling. A. Louste and H. Godlewski.—p. 1021.

*Dysentery Spread by Baker. A. Louste, and H. Godlewski.—p. 1022.

*Meningitis in Gonorrhea. Boivin.—p. 1024.

Tardy Sequelae of Chest Wounds. E. Sergent and P. Pruvost.—p. 1029.

Remote Results of Chest Wounds. Tuffier.—p. 1047.

The Arterial Tension in Disease.—Villaret and Dufour report the application in various pathologic conditions of their method of studying the pulse by simultaneous oscillometry, palpation and auscultation. This provides a constant, the variations in which are characteristic and instructive.

Bacillary Dysentery Spread by Baker.—In the village of 600 souls there had been thirty-one cases of bacillary dysentery with six deaths in less than a month. The district health officer had visited the village and given the usual advice to disinfect the water, etc., and then left, but the military inspector investigated conditions more closely and found that all in the family of the village baker had had the disease among the very first. After the baker had been instructed and elementary hygienic measures enforced in his business, the epidemic was at once arrested.

Meningitis in Gonorrhea.—In the case reported by Boivin, violent headache and fever developed three or four weeks after the onset of gonorrhea. The urethral symptoms had been mild, but signs of inflammatory processes in the testicles, meninges and joints had followed, shifting about, like metastases. During the meningeal reaction, the lumbar puncture fluid was turbid but aseptic, and the polynuclears were intact. The meningeal symptoms were severe, suggesting epidemic meningitis, but the storm blew over in six or seven days, without leaving a trace. The young man had had epidemic meningitis four years before.

Paris Médical

Jan. 17, 1920, 10, No 3

*Roentgenotherapy of Cancer. C. Regaud.—p. 53.

Pulmonary Sequelae in the Gassed. Leclercq and Boëz.—p. 59.

*Jaundice in Scarlet Fever. P. Meurisse.—p. 63.

Roentgen-Ray Treatment of Cancer.—Regaud expatiates on the necessity for even irradiation throughout the whole of the cancer, and gives an illustrated description of how to realize this. Only by this means is the maximal effect induced with the minimum of chances for harm.

Jaundice in Scarlet Fever.—In the case reported by Meurisse the jaundice developed suddenly in the course of severe scarlet fever, the symptoms and retrospective diagnosis indicating a primary angiocholitis or angiocholecystitis coming on with the eruption. The jaundice and other symptoms subsided in a week without any special polyuria or azoturia.

Presse Médicale, Paris

Jan. 24, 1920, 28, No. 7

*Inaugural Lecture of Obstetrics and Gynecology Course. G. Schickelé.—p. 61.

*Furunculosis. A. Mauté.—p. 64.

*Asthma and Anaphylaxis. P. Pagniez.—p. 65.

Obstetrics at Strasbourg.—Schickelé relates that the first manual on childbirth was published at Strasbourg (1513); the first school of midwifery was organized by Fried in 1728. It was maintained by the city as Fried had no connection with the medical school. Pasteur's first work was done at Strasbourg, and W. A. Freund there was one of the pioneers in the treatment of uterine cancer. Schickelé discusses the physiologic factors involved in producing delivery, saying that distant changes specific to pregnancy are evident in the pituitary, suprarenals and ovaries, but that we must not try to explain all the phenomena by the internal secretions alone.

Furunculosis.—Mauté has been studying vaccine treatment of furunculosis since 1900. He begins at once with a stock vaccine and follows it with an autovaccine, as the latter is always more effectual in warding off recurrence. In the usual adjuvant tonic treatment he warns against arsenic, as this drug seems to rather favor the staphylococcus.

Asthma and Anaphylaxis.—Pagniez reviews the literature on this subject, and on the treatment of asthma with an autoserum, or by desensitization with peptone or by digestive antianaphylaxis. Auld's method of intravenous or subcutaneous injections of peptone, Pagniez' method with peptone by the mouth, and Cordier's with peptone in enemas, are all effectual, but the benefit is short-lived. Hence they are inferior, he says, to the American method of gradual desensitization by vaccination. But the peptone methods are so simple and easy that they encourage further research and experiments in this line. He adds that in the most authentic asthma there may be a psychic element. "The asthma with heart and kidney disease and emphysema is merely a form of dyspnea resembling asthma. In true asthma, the attack is a manifestation of anaphylaxis induced by the introduction into the system of some substance which acts as an antigen in the sensitized organism in contact with the substance inducing the anaphylaxis. This condition of anaphylaxis can be made to disappear, at least temporarily by appropriate treatment, even although the nature of anaphylaxis is still a mystery. The Americans cited are Meltzer (1910), Ramirez (1919), and C. Walker (1917 and 1918).

Jan. 28, 1920, 28, No. 8

*Internal Treatment of Skin Disease. P. Ravaut.—p. 73.

*Functioning of Gastro-Enterostomy. G. Metivet.—p. 75.

Internal Treatment in Dermatology.—Ravaut declares that it is irrational to attack skin disease only from without. "Imagine any one treating the skin lesions of syphilis by local applications alone! And yet the dermatologist is too apt to focus his attention exclusively on the local process. He must be a biologist, not a mere botanist." By modifying the secretions it may be possible to break up the vicious circle, and he has often accomplished this with sodium cacodylate or sodium thiosulphate (hyposulphite) after failure of all local measures. He gives the cacodylate by the vein in a 10 per cent. aqueous solution, giving thus up to 15 or 20 gm. of the cacodylate in the course of three weeks. Some patients were given up to 40 or 50 gm. in two or three months. After improvement of the skin disease, small doses of the drug are kept up for some time to ward off recurrence.

In his experimental research on causes liable to augment the toxicity of arsphenamin, he confirmed the findings of others in regard to the importance of oxidations in this respect, and he found that sodium thiosulphate prevented or neutralized these oxidations. His further assumption that oxidations are an important factor in certain skin diseases was confirmed by the effect of this drug, sodium thiosulphate, on certain long intractable pathologic conditions in the skin. The skin cleared up promptly when the sodium thiosulphate was given by the vein in a 20 per cent. solution, in doses ranging from 4 to 15 gm. a day. He has also given it by the mouth in the same doses but with sugar: 25 gm. of sodium thiosulphate to 125 gm. each of syrup and distilled water. Fine results, he says, were obtained in urticaria, furunculosis, eczema and in arresting the arsenical abnormal redness and puffiness of the skin after arsphenamin treatment. In a case of pityriasis the skin slowly cleared up without any external treatment whatever.

Gastro-Enterostomy.—Metivet suggests that the condition of the stomach ought to be heeded more in making the gastro-enterostomy opening large or small. When there is atony of the stomach, the contents will pour out too quickly unless the opening is small, but it should be at the lowest point. With hypertony and necessity for resting the stomach, the opening should be large and in the antrum, near the lesser curvature. If conditions require it later, the pylorus can then be shut off.

Progrès Médical, Paris

Jan. 11, 1920, 35, No. 2

*Convulsions in Adults with Pleuropulmonary Lesions. A. Barbé and R. Glénard.—p. 13.

*Tropical Ophthalmology. Terrien.—p. 14.

General Treatment of Syphilis. Bory.—p. 16.

Vaccine Therapy of Influenza. Loche-longue.—p. 18.

Sodium Vanadate and Persulphate in Psychoses with Anorexia. H. Damaye.—p. 19.

Convulsions of Pleuropulmonary Origin.—Barbé and Glénard report five cases of convulsions in male adults, the attacks commencing after unilateral pleuropneumonia. The attacks resembled in some respects epileptic seizures but differed from them in others. They are probably explainable by reflex action from irritation from the preceding pleural and pulmonary disease.

Tropical Ophthalmology.—In this lecture of the colonial medicine course, Terrien discusses filaria, hemeralopia and toxic amblyopia.

Revue de Chirurgie, Paris

September-October, 1919, 38, No. 9-10

*Streptococcus Septicemia with Jaundice. E. Quénu, G. Küss and M. Brulé.—p. 785.

Chilling Main Factor in Trench Foot. E. Chauvin.—p. 793.

*Mastoiditis and Pott's Disease. G. Portmann.—p. 808. To be cont'd.

*Wounds of Blood Vessels. N. A. Dobrovolskaia.—p. 848

Septicemia Simulating Bile-Duct Disease.—Quénu and his co-workers call attention to the difficulty of the differential diagnosis in cases such as the one described in which recurring attacks of fever with jaundice suggested angiocholitis except for the absence of gallstone colic pains. The woman of 67 had been having these attacks for over a month; the stools were not clay-colored, and tests for spirochetes were negative, but the general condition was growing grave and an operation was being considered when finally the streptococcus was found in the blood, clearing up the diagnosis. An abscess developing served for revulsion; after evacuation of the thick, fetid pus, recovery soon followed.

Mastoiditis and Pott's Disease.—Portmann declares that the connection between mastoiditis and tuberculous caries of the upper spine has not been sufficiently emphasized to date. He analyzes the anatomic and clinical relations, giving instances of suboccipital Pott's disease mistaken for mastoiditis, and vice versa, and the involvement of one region from the other. His long illustrated article is to be continued.

Traumatic Aneurysms, and Wounds of Vessels in General.—Dobrovolskaia tabulates the details of sixty-two cases at a

Petrograd hospital, and describes how it is possible to estimate the collateral circulation with an aneurysm by means of the sphygmomanometer records of the pulse below the aneurysm. The local, general and collateral blood pressure reveal the conditions in the circulation of the limb. Oppel argues that the vein must be ligated along with the artery, even when the vein is normal. This reduced circulation favors development of collaterals, he claims, but the experiences here related did not show any advantage from this in the eighteen cases in which it was applied. In one case there was aseptic gangrene of the leg muscles after ligation of the popliteal vein. The foot kept its normal aspect throughout, as the subcutaneous venous system had maintained the circulation.

Revue de Médecine, Paris

November-December, 1919, 36, No. 6

*Mild Tuberculous Pleurisy. A. Dufourt and M. Ségard.—p. 545.

*Antitoxic Treatment of Typhus. W. Vignal.—p. 562.

*Apical Pleuritis. C. Roubier.—p. 576.

Recovery from Homicidal Delirium of Jealousy. R. Benon and P. Gouriou.—p. 587.

Mild Recurring Tuberculous Pleurisy.—Dufourt and Ségard ascribe to the exceptional energy of the defensive forces the atypical course of certain tuberculous processes in the lungs and pleura. In this article they refer in particular to what they call benign tuberculous corticopleuritis, with recurring foci, and to chronic congestions of the lungs of the so-called arthritic type. The foci and the physical signs change about in the former, and periods of latency intervene. A special feature of this form is the occasional intense pain, not paralleling the physical signs. Another feature is that the lesions gradually subside, never passing into the ulcerative-cheesy stage. They have encountered cases of this kind at all ages. The most constant symptom is the dyspnea. Patients complain of this even before the appearance of the pain. They get out of breath at every prolonged exertion, and this dyspnea persists to some extent even in repose, reflecting with some precision the intensity of the congestion in the cortex of the lung and in the pleura. After a climbing exercise, there may be paroxysmal dyspnea with a sensation of constriction of the chest, anguish and extreme tachycardia. Then for an hour or two the patient expectorates profusely, an actual alveolar serous effusion. In an hour or two the whole paroxysm is over. The pains that come and go throughout the whole course are of the dull, permanent neuralgia type, or like a set of needle pricks, brought on by laughing or coughing or abrupt movement of the chest. The asthenia, tenacious pains, hampered breathing, palpitations and tachycardia often entail neurasthenia in time in the rare cases presenting the complete clinical picture.

Dufourt and Ségard never found tubercle bacilli, but they explain the spurts of congestion as the result of local anaphylactic shocks to tuberculin manufactured in the lesions. Anything such as extra physical exertion, climbing, or injection of tuberculin, mobilizing the bacillary toxins in the focus, brings on this wave of congestive phenomena. The anaphylaxis gradually merges into immunity, and the symptoms finally subside completely. Sanatorium treatment and repose, revulsion to relieve the pain, and other physical measures to soothe the heart and reduce the tendency to congestions are indicated. High altitudes and exposure to wind are formally contraindicated. A weakly arsenical-sulphur water has sometimes hastened the cure when the acute phase is past. One patient improved with sea bathing on the Mediterranean coast in calm summer weather. Drugs, they say, are useless or harmful, except possibly calcium; some patients inclined to hyperacidity improved under alkalines.

Antitoxic Treatment of Typhus.—Vignal treated nineteen patients at Bucharest, with an exceptionally toxic form of typhus, with infusion by the vein in the twenty-four hours of 500 c.c. of a solution of 6.5 gm. sodium chlorid and 0.4 or 0.5 gm. chlorin to the liter. This was prepared according to Danielopol's directions by passing a current of chlorin through distilled water and adding the sodium chlorid. The chlorid content is determined with sodium hyposulphite,

Vignal found that the symptoms of profound toxic action became rapidly attenuated under these infusions. He analyzes his experience in detail, saying that the few deaths in the series occurred from pleurisy or streptococcus sepsis after the typhus had subsided, but the leukocytes still numbered 40,000. In one case the condition was not regarded as grave enough for the infusion as the leukocytes numbered only 20,000, but the fourteenth day they ran up to 23,400, and the infusion then came too late, the man dying the next day. The drop in the leukocyte count and the improvement of the other symptoms from toxic action followed promptly on the infusions.

Apical Pleuritis.—Roubier describes the sounds characteristic of pleuritis at the apex and their interpretation. In thirty of the fifty-three cases in this category, the auscultation findings were exclusively or predominantly restricted to the left apex. The condition has a favorable prognosis, whether of tuberculous origin or not.

Schweizerische medizinische Wochenschrift, Basel

Jan. 15, 1920, 50, No. 3

*Varicella and Herpes Zoster. E. Feer.—p. 41.

*Legal Status of Abortion in Switzerland. P. Jung.—p. 42.

*Therapeutic Abortion. A. Gautier.—p. 46.

*Vernes Serologic Test for Syphilis. R. Preiswerk.—p. 51.

Chickenpox and Herpes Zoster.—Feer relates from the children's hospital at Zurich that a boy of 9 developed herpes zoster fourteen days after an infant in a connecting room had shown signs of chickenpox, and had been removed to another part of the building. The boy with herpes was not removed, and seventeen and twenty days after the onset of the herpes the two other children in the same room (three beds) developed chickenpox. The intervals thus from the first case of varicella were thirty-one and thirty-four days, and Feer thinks there can be no doubt that the herpes represented the second generation of the varicella, bridging the gap between the first and the two late cases. No other cases were known in the environment. In Bokay's compilation of thirteen cases, most of them from his own experience, the herpes was the first to appear, and the varicella developed secondarily, while in Feer's epidemic the varicella opened the sequence.

Legal Status of Abortion in Switzerland.—Jung suggests a rewording of the bill pending in the legislature to legalize therapeutic abortion and prevent abuses. He urges that therapeutic abortion should be ranked the same and be governed by the same laws as any operation. In the following article, Gautier, professor of penal law, discusses therapeutic abortion from the legal standpoint, and emphasizes that the presence of the third interested party, the *nasciturus*, imprints a unique stamp on abortion proceedings. But, he remarks in conclusion, whatever laws may be passed, conditions will continue the same: Good physicians will do what they think is right under the circumstances, and the unscrupulous will do as they please. *Les mocurs peuvent ici plus que la loi.*

The Vernes Colorimeter Serologic Test for Syphilis.—Preiswerk applied the Vernes technic in 1,200 cases and obtained parallel results to the Wassermann test in 76.7 per cent.; totally contradictory results in 1.1 per cent., and slighter divergence in the others. The technic is comparatively simple and easy, but the ingredients are not so constant as Vernes claims. Fresh pig serum is used instead of the rabbit amboceptor, and guinea-pig hemolysis is determined with a color scale. The organ extract is made with ethylene tetra chlorid acting on desiccated myocardium tissue from the horse.

Annali d'Igiene, Rome

September, 1919, 29, No. 9

*Lice and Typhus. G. Alessandrini.—p. 557.

Cultivation of *Micrococcus Gonorrhoeae*. M. Carpano.—p. 599.

Pathogenic Blastomycetes. A. Ori and M. Ciaccia.—p. 604. Conc'n.

Typhus During the War. G. Sampietro.—p. 620. Cont'n.

Lice and Typhus.—Eight plates of the microscopic findings in lice confirm Alessandrini's statements as to prophylaxis of lice-borne diseases. The only rapid, practical and certain

means for extermination of lice, he reiterates, are with dry heat and with sulphurous anhydrid. It is immaterial whether the latter is generated by burning sulphur or by the method he has found most convenient from the action of sulphuric acid on sodium thiosulphate (hyposulphite). He places the clothing to be deloused in a jar containing a 4 per cent. solution of commercial sulphuric acid. When the clothing is saturated throughout, he pours in double the amount of a 20 per cent. solution of sodium thiosulphate, and the contents of the jar are turned and shaken up together. An airtight cover is desirable, but not indispensable. The chemical reaction between the two fluids generates sulphurous acid gas, while the sulphur is precipitated on the insects, and is found deep in their respiratory organs, and the nits are killed at the same time. He adds that the cotton, wool, silk and linen articles, in seven different colors, used in his tests, kept in the fluids from ten to twenty minutes and then rinsed thoroughly in water, were not altered in their substance, and only a very few, after drying, were found to be slightly uniformly faded, especially the pink and yellow tints. His tests were made with both head and body lice, and with several types of similar parasites of the pig, etc.

Pediatria, Naples

February, 1920, 28, No. 3

*Whooping Cough. O. Cozzolino.—p. 113.

*Progressive Muscular Dystrophy. Giulio Milio.—p. 118.

*Influenza and Lactation. M. Rollandini.—p. 135.

Whooping Cough.—Cozzolino denounces the theory preached by A. Czerny that whooping cough is merely the form imprinted by a neuropathic predisposition on an ordinary catarrhal infectious process in the air passages. Czerny's pupil, A. Niemann, has recently presented what he thinks is further evidence to sustain this theory, namely, that when influenza swept through the infant asylum in his charge, nine of the sixty-two infants developed whooping cough as the acute stage of the influenza subsided. Cozzolino refuses to accept this evidence, as no search was made for the Bordet-Gengou bacillus in the throats. Although no visitors were admitted to the asylum, there might have been a carrier among the nurses. The scattered appearance of the whooping cough among the inmates merely confirms that all infants are not susceptible to whooping cough. On the other hand, the vanishing of the Bordet-Gengou bacilli from the throat after the fourth week of whooping cough; the recent success with prophylactic vaccination with this bacillus, and the development of antibodies in the vaccinated; the immunity conferred by one attack, and the possible transmission of the disease from the mother to the fetus, form a solid basis for assumption of a specific causal micro-organism.

Progressive Muscular Dystrophy.—Milio reports nine cases in children from 6 to 11 years old encountered in the last ten years. They represent the five types of this pathologic condition. No hereditary tendency was apparent, but the condition developed after an acute infectious disease in some of the children; after measles at 11 months in one, but in others no factors were known that could throw light on the origin.

Influenza and Lactation.—Rollandini concludes from the experiences at the children's clinic at Turin that there is no need to interrupt lactation if the mother has influenza. She should be encouraged to continue nursing the child, unless there are grave complications. But precautions should be taken against infecting the child. It should not be kept in the room with the mother, and should be brought in only for feedings. The nipples should be washed each time before giving to the child, and the mother should be warned not to speak or cough. She should hold a handkerchief over her mouth as long as the child is near. No resort should be made to artificial feeding unless absolutely necessary, and then only partially, if possible.

Policlinico, Rome

Jan. 12, 1920, 27, No. 2

Present Tendencies in Study of Pathology. A. Zeri.—p. 31.

Poisoning from Castor Oil Seeds; Two Children. M. Gioseffi.—p. 39.

Jan. 19, 1920, 27, No. 3

*Cultivated Digitalis. G. Gaglio.—p. 63.

*Heredity in Cardiovascular Disease. G. Galli.—p. 65.

Calcium Treatment in Surgical Tuberculosis. L. Durante.—p. 68.

December, 1919, 26, Surgical Section No. 12

Painless Childbirth. G. Cuzzi.—p. 385.

Local Use of Ether in Surgery. G. Fantozzi.—p. 390. To be cont'd.

Ultraconservative Operations on Limbs. Laurenti.—p. 406.

Cultivated Digitalis.—Gaglio reports the results of pharmacologic study of some cultivated *Digitalis purpurea* which demonstrated that it was as potent as the best from other sources. It requires an acid soil and protection against excessive heat.

Heredity in Cardiovascular Disease.—Galli remarks that few physicians seem to appreciate the frequency of the inherited tendency to cardiovascular disease in certain families. A number of instances from his own practice are compared with some on record. Rapid pulsation of the heart is often observed in several members of a family; he noted paroxysmal tachycardia in one man and in two of his children. What he calls hereditary myocardism is even more common, the subjects not able to stand as much physical exercise as others, panting after moderate exertion; the heart and the aorta are smaller than the average and the blood pressure lower. The young sometimes outgrow this under careful hygiene and progressive exercising, but exertion beyond what the subject can bear may do irreparable harm, as in a case described in which a mountain climbing excursion was too much a strain, and the young man died within two years. His father died a few years later of heart disease, and a sister at 13 from acute asystole. One brother of 16 is weak and tires readily and his heart is unusually small. Another younger brother has a more robust constitution but he too tires easily. The family tree of another patient shows the great grandfather dying of apoplexy at 70 and one of his sons at 64, while two other sons died of heart disease at 51 and 70, and the fourth of tuberculosis in childhood. In the six children of the third generation one died at 41 of heart disease, three of cerebral hemorrhage at 51, 46 and 45, and the others of tuberculosis or Adams-Stokes disease. One of the thirteen great grandchildren has a cylindrical thorax. Galli has been preaching for years the importance of compiling data on heart disease, following the cases decade after decade and investigating the family tree. The military systems of the world have it in their power now, he continues, to inaugurate and carry out this systematic and organic study of pathologic conditions in the circulatory system, amplifying and continuing the work done during the war in this line. By this means positive data will be accumulated to offer to hygienists and legislators for prophylactic action.

Riforma Medica, Naples

Nov. 29, 1919, 35, No. 48

*The Intermediate Metabolism in Nephritis. A. Barlocco.—p. 1041.

Paratyphoid A in Macedonian Campaign. C. Vallardi.—p. 1046.

Neurosyphilis and Predisposing Factors. G. Pighini.—p. 1050.

*Prophylaxis of Renal Tuberculosis. D. Taddei.—p. 1056.

The Metabolism with Uremia.—Barlocco reports ten cases of nephritis studied by Bang's micromethod, including one of so-called pseudo-uremia and one of uremia with convulsions. In both of these latter cases the blood and urine findings were normal for a time after the symptoms had developed. Only later came the period with evidences of profound derangement of the nitrogen metabolism. In the eight other cases the uremia seems to be merely from retention of nitrogenous waste, but in two of these latter cases there seems to be a primary exaggerated production of nitrogenous waste in the tissues, and the excess passes only tardily into the blood and urine. These cases confirm Maragliano's theory that primary or secondary lesions in the tissues may be an important element in the clinical picture of nephritis. They also sustain the analogy between uremia and the toxicosis from splitting of albumin. Even in some of the other cases there were certain features suggesting increased production of waste, in addition to the decreased elimination. In still another class of cases, he adds in conclusion, the uremia may be traced to changes in

the vessels alone, and the metabolism is not a direct factor, or has merely a slight, secondary influence.

Prophylaxis of Renal Tuberculosis.—Taddei asserts that renal tuberculosis is widely prevalent and that it almost always escapes detection, at least during the period when a nephrectomy offers the greatest chance of success. It is an essentially chronic disease, and it may develop insidiously with periods of remission. One of his cases was inoperable from bilateral pyonephrosis when first seen, but the patient is still under observation ten years later. The first, the albuminuric phase, is followed by the pyuric phase, with or without slight symptoms from the bladder. The involvement of the bladder forms the third phase. Usually it is only after the practitioner has wasted some time trying to cure the "cystitis," that he thinks of the kidney and calls in a surgeon, just before the fatal progression into the fourth, the terminal stage. Renal tuberculosis is of blood-borne origin, Taddei reiterates, and every young person with albumin and pus or blood in the urine (not explainable by gonorrhea or other infectious disease or adnexitis), should be suspected of renal tuberculosis even although the general condition is good. Note the transparency of the urine, the tender points for the kidney, palpating for them with the hands superposed, working from above downward and from within outward along the line from the umbilicus to the thigh, following the pulsation of the iliac artery down to the passage of the ureter into the superior strait of the pelvis. An absolute diagnosis is possible only with discovery of the tubercle bacillus, and with this, the surgeon should be called in at once. Krönlein found a tuberculous process in the kidney in 29.8 per cent. of the cadavers examined, and all authors agree that renal tuberculosis is unilateral in the first stages in 88 per cent. of the cases at least. By the time severe cystitis has developed, both kidneys are usually involved.

Archivos Españoles de Enf. del Ap. Digestivo, Madrid

November, 1919, 2, No. 11

- Diagnosis of Gastric Cancer. T. Hernando.—p. 641; Idem. J. González Campo.—p. 645.
Gastric Ulcer. L. Urrutia.—p. 676. Idem. F. Gallart and F. Ribas.—p. 702. Idem. C. G. Peláez.—p. 705.
*Remote Results of Gastro-Enterostomy. J. MacDonald and W. A. Mackay.—p. 726.

Gastric Ulcer.—This entire issue of the *Archivos* is devoted to the transactions of the subsection on disease of the digestive apparatus at the First National Medical Congress in Spain last spring. Urrutia insists that international statistics show that ample resection of the stomach does not have a much higher death rate than simple gastro-enterostomy while the results are incomparably better. In a recent series of 82 cases of resection the mortality was 4.8 per cent., these patients succumbing to acute dilatation of the stomach, pneumonia, paralytic ileus or chloroform jaundice. In a previous series of 117 cases the mortality was 6.6 per cent., while it was 6 per cent. in 115 gastro-enterostomy cases. He mentions C. Alvarez' proposal to treat gastric ulcer by stretching the fifth, sixth and seventh intercostal nerves on both sides and resecting the fifth. This may be useful with rebellious hyperchlorhydria, but seems irrational for an already established hard ulcer.

Gallart and Ribas say that the cicatricial changes found in the pylorus and elsewhere in the stomach testify that gastric ulcers can and sometimes do heal spontaneously. They applied Alvarez' nerve stretching technic in 2 cases, but are unable to pass a decisive judgment on it. In only 8 per cent. of their gastric ulcer cases were conditions favorable for an operation; in all the others there were adhesions, multiple ulcers in 12 per cent., and extensive and intense gastritis was the rule. They state that the mortality from resection is from 20 to 30 per cent. in general, while gastro-enterostomy has a death rate of only 3 or 4 per cent. and definite results are realized in 65 per cent. of the cases. In 2 of their cases cancer developed later. When there were disturbances they were almost always from growing up of the new opening, or from peritoneal bands, or adhesion to the pancreas, or irreparable lesions of the gastric glands. Peláez' mortality in 128 gastro-enterostomy cases was direct in 2.14

per cent.; total, 11.42 per cent. In 37 of his 140 peptic ulcer cases, the lesion was in the duodenum.

Gastro-Enterostomy.—MacDonald and Mackay report 1.27 per cent. mortality in 314 gastro-enterostomy cases. In 6 of 19 cases of ulcer on the lesser curvature the operation brought little if any relief.

Medicina Ibera, Madrid

Dec. 13, 1919, 9, No. 110

- Reinfection with Syphilis? J. Sáenz de Grado.—p. 185.
Presbyopic or Adynamic Astigmatism. J. González.—p. 186.

Dec. 20, 1919, 9, No. 111

- Exercise and Repose in Tuberculosis. García Triviño.—p. 193.

Dec. 27, 1919, 9, No. 112

- Surgical Complications of Influenza in Children. Blanc y Fortacín.—p. 201.
Cheesy Tonsillitis. Sicilia.—p. 202.

Progresos de la Clínica, Madrid

November, 1919, 7, No. 83

- Drug Treatment of Uricacidemia. R. Mollá.—p. 191.
*Renal Tuberculosis. M. Barragán Bonet.—p. 199. Conc'n.
*Thyroid Insufficiency After Influenza. W. López Albo.—p. 217.
Temporizing with Extra-Uterine Pregnancy. Vital Aza.—p. 220.
Malaria in Morocco. J. A. Romera y Domingo.—p. 228.

Renal Tuberculosis.—Barragán affirms that medical treatment of renal tuberculosis should be considered only when operative measures are out of the question, but heliotherapy and other general measures are useful adjuvants at all stages. He declares that one is safe in removing the kidney for unilateral renal tuberculosis when the Ambard constant is good, even when it is impossible to explore the bladder. But as a rule, catheterization of both ureters is the only means for a positive diagnosis of whether one or both kidneys are affected. When both are involved, nephrotomy of one and nephrectomy for the other may give unexpectedly favorable results.

Thyroid Insufficiency After Influenza.—López Albo has reported two cases of extreme somnolency and headache after influenza, cured or materially improved by thyroid treatment. He here describes a third case in which the postinfluenzal hypothyroidism took the form mainly of neuralgias, which disappeared likewise under thyroid treatment. This patient was a man of 35.

Revista Cubana de Obstetricia y Ginecología, Havana

May-July, 1919, 1, Nos. 5-7

- *Dermatoses of Pregnancy. V. Pardo y Castelló.—p. 235.
Cancer in Stump of Uterus. M. Costales Latatú.—p. 249.
Criminal Abortion. A. Barreras y Fernández.—p. 336.
*Metrorrhagia in Virgins. M. Costales Latatú.—p. 350.

Certain Dermatoses of Pregnancy.—Pardo reviews the types of herpes, molluscum and impetigo peculiar to pregnancy, and comments on the grave prognosis with the latter as it is a sign of septicemia. With other dermatoses frequent in pregnant women, he warns against the use of starch in powders, especially for eczema of the vulva as the vegetable granules ferment readily. Añ 8 per cent. solution of aluminum acetate or diluted Burow's solution helps to dry up oozing eczema in this region. Pruritus requires treatment of the causal autointoxication, restriction to a milk diet, and sedatives. Local measures give only transient relief, but a chloral lotion or cocain salve, or touching with silver nitrate may be indicated. The roentgen rays, $\frac{1}{4}$ H. twice a week may reduce the pruritus and cure it completely in two or three applications. Pardo warns against the factitious dermatoses of hysteria: "Note the regularity and symmetry of the lesions, the fact that they occur only on regions readily reached by the hands, and the track of a drop of caustic running down."

Metrorrhagia in Virgins.—Costales relates an extreme case in which the robust girl of 18 had been almost exsanguinated by two months of persisting uterine hemorrhages. She had been given iron, cod liver oil, etc., without avail, but under ovarian treatment the hemorrhages ceased and she soon recuperated. Polyglandular treatment proved effectual in

some other cases of the kind, but this young woman had two relapses under polyglandular treatment. The improvement became constantly progressive only after the ovarian treatment alone was pushed.

Revista Médica Cubana, Havana

August, 1919, 30, No. 8

Clinical Value of Electrocardiography. J. M. Martínez Cañas.—p. 463.
Conc'n in No. 9, p. 532.

*The Medical Literature of Cuba. J. Le-Roy y Cassa.—p. 481.

The Medical Literature of Cuba.—THE JOURNAL has already mentioned Trelles' compilation. Le-Roy remarks that Cuba is the only country of the American continent that has its scientific bibliography complete.

October, 1919, 30, No. 10

*Bronchopulmonary Spirochetosis in Cuba. A. A. Méndez.—p. 593.
Caesarean Section for Placenta Praevia and for Eclampsia. J. A. Ortiz.—p. 595.

*The Arterial Tension in Tuberculosis. Amador Guerra.—p. 604.

Bronchopulmonary Spirochetosis.—Méndez has encountered one acute and three chronic cases of Castellani's spirochetosis in eastern Cuba. The diagnosis in all had been pulmonary tuberculosis until corrected by discovery of the spirochetes in the sputum and the absence of tubercle bacilli. Under arsenic treatment, the spirochetes disappeared in the acute case and the chronic were much improved, and some recovered completely under this treatment.

Arterial Tension in Tuberculosis.—Guerra comments on the favorable prognosis when the arterial tension in tuberculosis is found normal or above. A sudden rise in the blood pressure is liable to induce hemoptysis. A sudden drop is a sign of acute exacerbation or generalization of the process. The habitual low pressure in the tuberculous may be explained by bacterial toxins or by suprarenal insufficiency.

Revista de Medicina y Cirugía Prácticas, Madrid

December, 1919, 125, Nos. 1581-1584

Unusual Form of Mastoiditis. E. Botella.—p. 299.

Parenteral Injection of Milk in Eye Diseases. S. Garcia Mansilla.—p. 329.

Case of Excessive Somnolency. R. del Valle y Aldabalde.—p. 361.
Value of Tonics in Treatment of Psychoses. Idem.—p. 364.

*The Internal Secretions in Their Relations with the Skin and Its Appendages. Eusebio de Oyarzabal.—p. 393.

The Internal Secretions in Relation to the Skin.—De Oyarzabal reviews this large field, telling of the various data accumulated by different clinicians in this line. In his own practice, as scleroderma developed in one girl of 18, menstruation stopped. Others have reported similar experiences, and have noted the relative frequency of scleroderma with symptoms of the menopause. He cites Sabouraud's theory that alopecia is traceable to the excessive internal secretion of the sexual glands. In seborrheic alopecia, the secretion of sebum is excessive, and this does not occur until the sexual glands are developing. "Children never have seborrhea." The question of the relations between the endocrine and the sebaceous glands may repay study and may throw light on baldness. Organ extract treatment is justified in all cases of disease of the skin or appendages in which endocrine deficit is suspected. But we are disarmed with disease traceable to excessive functioning of endocrine glands, unless we can learn to stimulate the antagonist glands. Some have reported favorable experiences with mesenteric gland extract in treatment of scleroderma, and others with epinephrin in erythromelalgia. In one case the vasomotor disturbances in hands and feet for twelve years subsided under suprarenal treatment.

Revista Sud-Americana de Endocrinología, Buenos Aires

September, 1919, 2, No. 9

*Vaccine Treatment of Typhoid. G. Grapiolo.—p. 329. Conc'n.

Vaccine Treatment of Typhoid.—Grapiolo gives a very favorable verdict on vaccine treatment as applied in 234 cases of typhoid fever. No untoward effects were noted in any instance. The death rate was from 7.62 to 7.96 per cent.

Deutsche medizinische Wochenschrift, Berlin

Nov. 20, 1919, 45, No. 47

Acute Injuries of Female Genital Organs. R. T. von Jaschke.—p. 1289.
Salvarsan in Recurrent Fever. B. Glaserfeld.—p. 1296.

*Diagnostic Value of Glycemic Reactions. Hahn and Offenbacher.—p. 1298.

*Botulism. L. Bitter.—p. 1300.

The Role of Heredity in Disease. H. W. Siemens.—p. 1302.

Pupil Changes in Barbitol Poisoning. C. Römer.—p. 1305.

*Tendon Transplantation for Radial Paralysis. Gaugele.—p. 1306.

*Radical Operation for Inguinal Hernia in Infant. G. Schmidt.—p. 1308.

The Diagnostic Value of the Glycemic Reaction.—Hahn and Offenbacher remark on the great value for practical diagnosis of the behavior or "reaction" of the blood sugar in response to a definite, uniform test meal: The blood sugar value was determined fasting. Then 50 gm. of glucose were given in 300 c.c. of tea. Every hour the urine and the blood sugar values were determined, with care to prevent the patient from eating or drinking anything, or moving about too much, during the experiment. This moderate dose (50 gm.) was used because it would be readily absorbed and furnish distinct differential values. It was also feared that diabetics might be harmed by larger doses. Double determinations were made which agreed very closely, as a rule. Bang's iodine micromethod was used for the determinations. The experiment was applied to healthy subjects as well as to patients with various diseases. The results are shown in glycemic-reaction curves. The writers give up to 0.11 per cent. blood sugar as the normal figure, fasting; values from 0.12-0.16 per cent. they designate as slightly above normal or suspicious, and a sugar content of more than 0.16 they characterize as pathologically hyperglycemic.

Botulism.—Three different outbreaks of botulinus poisoning in Kiel within a year, which resulted in three deaths, induced Bitter to study into the question. The eating of salted herring caused the first of the three fatal cases. The herring had a typical rancid odor, and *Bacillus botulinus* was cultivated from two herring. Others fed to mice exerted a toxic effect. Too little vinegar had been used in preserving them, the pickle containing only 0.6 per cent. acetic acid. Experimentation showed that botulinus strains of various origin grew almost unchecked in nutrient agar containing up to 0.1 per cent. acetic acid. It was found, however, that a pickle containing 2 per cent. or more of acetic acid would prevent the development of poison from *B. botulinus*. It has also been shown that a 10 per cent. brine, such as is usually employed, will protect food preserved in it against the botulinus. The second outbreak in Kiel, comprising four cases, resulted from the eating of rancid-smelling raw ham. There were no fatalities, although the cases were typical and severe. In the third outbreak three persons were affected by eating salted herring, and two of these died. Bitter recommends that in the case of meat, fish and sausage poisoning all manifestations resembling botulism should be made reportable by law. He places the case mortality from botulinus poisoning in Germany at 16 per cent. Greater publicity should be given to the fact that if preserved vegetables and meats have a peculiar disagreeable odor, taste or appearance there is great danger in their consumption, and that if they are used, though they look suspicious, they should be thoroughly cooked, though it is true that cooking sometimes fails to protect. As a rule, *B. botulinus* is found only in food carelessly preserved or stored in too warm a place. Bitter knows of only one instance in which *B. botulinus* has been isolated from other than damaged foods. Kempner and Pollack succeeded in isolating *B. botulinus* from the feces of pigs.

Tendon Transplantation in Radial Paralysis.—Operations on the nerves in radial paralysis having failed to accomplish the expected results, Gaugele thinks that Perthes and others have done a good service in reintroducing the method of tendon transplantation. Tenodesis, as recommended by Perthes, may be indicated if the paralyzed muscles look pale or yellow, but ordinarily he thinks it can be dispensed with, since the operation is thus made more complicated. He does not approve of separating the paralyzed muscles from the tendons, as he finds that such muscles often recuperate when put to work. In place of Perthes' method of uniting

the flexor and extensor muscles, he prefers Vulpius' button-hole method. The distribution of the flexor muscles is best made, he thinks, in the direction that the extensor muscles run, that is to say, the flexor carpi ulnaris is attached to the extensor communis and extensor pollicis longus, and the flexor carpi radialis to the other muscles of the thumb. The extensor carpi ulnaris and the extensor carpi radialis longus may, likewise, be attached to the flexor muscles.

Radical Operation for Inguinal Hernia in Infant.—Schmidt reports an operation for inguinal hernia on a 10-month-old infant. Some of the noteworthy features of the case were the presence of the appendix in the hernial sac (especially strange in an infant); repeated inflammation of the appendix in the hernial sac, and the favorable course, which supports the view that inguinal hernia should be operated on in earliest childhood. If the operation had been postponed, the child would have been continually exposed to incarceration of the hernia and to appendicitis. A truss might have aggravated the danger from appendicitis. The operation was performed without anesthesia and was borne well in spite of the fact that the infant was not sturdy.

Deutsche Zeitschrift für Chirurgie, Leipzig

June, 1919, 150, No. 1-2

*Keloids. L. Freund.—p. 1.

*Operation for Inguinal Hernia. Drüner.—p. 7.

*Trophic Changes After Injury of Nerve. F. Breslauer.—p. 50.

*Traumatic Aneurysm in the Liver. K. Käding.—p. 82.

*Exuberant Callus. P. Sudeck.—p. 105.

Keloids Without Known Cause.—Freund describes a case which not only throws light on the origin of keloids, but points the way to effectual treatment. The keloids developed spontaneously on the man of 31, different ones presenting the features of all known varieties of primary and secondary keloids. There was always some local defect of the skin that invited the keloid, but the keloid growth did not develop at every defect. He seemed to display both a general and a local predisposition for the development of keloids. Freund accomplished the cure by excision into sound tissue and then exposing the field, without suturing, to the roentgen rays, up to the erythem dose, allowing only two or three days to elapse before beginning the raying. No effect was apparent from radium treatment of some of the keloids. He has applied this operative plus postoperative irradiation in nine cases to date, and all seem to be permanently cured.

Inguinal Hernia.—Drüner compares the various technics in vogue for correction of inguinal hernia, and gives an illustrated description of the modified Hackenbruch operation. He has applied it with superior results in 509 cases of inguinal hernia, all in hard-working men in a coal mine district. The hernia returned after the Bassini operation in 21.4 per cent. but after his modified technic in only 4 per cent. It aims to give the spermatic cord more room while insuring the greatest solidity in the region.

Trophic Changes After Injury of Nerve.—Breslauer has been studying on himself, on men with war wounds of nerves, on other patients, and on dogs, the local effect of heat or of mustard oil applied to the area innervated by a damaged nerve. The region loses in a few weeks the capacity to react with active hyperemia to irritation from heat, mustard oil or other stimulus. This suggests that the lack of this normal hyperemia defensive reaction allows irritating factors to injure the skin, and thus to set up processes which we call trophic changes. They are thus essentially the result of defective conditions in the circulation, and the nerve injury is responsible for this. Breslauer's experiments showed further that although the capacity was lost for active hyperemia reaction to the irritation from the mustard oil, etc., yet the capacity for vasoconstriction under the application of cold or epinephrin persisted unimpaired and indefinitely. He theorizes to explain this opposite behavior of the vasodilating and constricting apparatus. The skin does not redden under mustard oil when all sensation has been abolished by nerve blocking. As sensation returns, and the area begins to smart, it begins to turn red too. But the vasoconstricting action of epinephrin proceeds the same whether there is sensation in the region or not.

Aneurysm in the Liver.—Käding summarizes forty-two cases of aneurysm in the hepatic artery, all fatal but one, and four cases in which the aneurysm was inside the liver, all fatal. In a personal case the aneurysm had developed after a gunshot wound, and it had opened into the gastrointestinal tract, but the man recovered after ligation of the hepatic artery. The circulation of the liver is still adequate as the complete recovery in this case testifies, confirming the results of ligation of this artery in dogs.

Exuberant Callus.—A scrap of periosteum torn off may explain the tendency to excessive production of callus in certain cases, Sudeck explains, with roentgenograms of some typical cases demonstrating this etiology. They disprove the theory of traumatic ossifying myositis as responsible for redundant callus around the bone.

Zentralblatt für Chirurgie, Leipzig

Jan. 10, 1920, 47, No. 2

*Mammary Cancer and Postoperative Raying. G. Perthes.—p. 25.

*Differential Pressure Mask for Empyema. O. Goetze.—p. 29.

*Reconstruction of Urethra. W. Budde.—p. 32.

Mammary Cancer.—Perthes compares the ultimate outcome in 88 cases of mammary cancer rayed after mamnectomy, with 130 cases not given the postoperative irradiation, and 70 cases in which only inadequate exposures were made. There was recurrence within a year in 41 per cent., 28 per cent. and 38.5 per cent. in these groups respectively, but among the recurring cases there was no local recurrence in 18, 11 and 11 per cent., respectively. These figures speak decidedly against any improvement of the statistics from the postoperative raying. The recurrences within a year were almost twice as numerous as in the unrayed cases, and the deaths from internal metastasis without local recurrence were four times as numerous.

Mask for Differential Pressure in Treatment of Pleural Empyema.—Goetze refers to after-treatment when the aim is to realize expansion of the long compressed lung. The mask he has constructed for the purpose is just the reverse of Kuhn's aspiration mask, as inspiration is free and only expiration is checked with an adjustable valve. The mask has been worn day and night by various patients, and complete expansion of the lung resulted even under the most unfavorable conditions. The mask is also useful during resection of ribs and other operations on the thorax.

Subcutaneous Pedunculated Skin Flaps.—Budde describes his technic as applied in reconstruction of the urethra, although he says it can be applied to any passage or area. He also asserts that it is based on a new principle, namely the use of a square of skin, the sides sutured together to form a tube, while enough subcutaneous tissue is taken up with the skin to permit of suturing without the needle passing through the epidermis. The subcutaneous tissue below the lengthwise center of the flap is not severed so the skin tube is pedunculated its entire length. The flap for the urethra is taken from the lower aspect of the scrotum; it is about 3 cm. wide and the peduncle is thus formed by the septum tissue. The tube thus formed over a large catheter is then worked through a tunnel dug for it under the skin to the gap in the urethra, exposed through the perineum. As the tube is drawn through the tunnel, its "mesentery" is dragged along with it. The tube is turned over endwise to be drawn through, to bring the suture on top. Depilation of the skin of the scrotum is usually a necessary preliminary from fear of incrustation of hairs. The reconstruction of the urethra by this technic can be accomplished at one sitting, thus providing an epithelium-lined, strong and almost normally nourished tube. Flaps with this subcutaneous pedunculization might be utilized to repair defects on the cheek, etc.

Zentralblatt für Gynäkologie, Leipzig

Jan. 10, 1920, 44, No. 2

*Brain Lesions from Birth Trauma. R. Beneke and F. Zausch.—p. 34.

*Ovarian Tumors with Fetal Teratoma. L. Fraenkel.—p. 41.

Latent Microbism of the Vagina in Relation to Leukorrhea. A. Loeser.—p. 46.

Local Injection of Turpentine in Treatment of Adnexitis. A. Fuchs.—p. 52.

Obstetric Injury of the Brain.—In the first two of the three infant cadavers described there was extensive hemorrhage in the ventricle. The hemorrhage evidently proceeded from the deep cerebral vein. Undue stretching of the corpus callosum would explain this, and also the laceration of the tentorium sometimes observed. In the other cadaver the findings were those of patches of softening of the brain, probably the result of ischemia from vascular spasm. Kruska has compiled twenty such cases. The child seemed to be normal at first. Then left hemiplegia developed, and finally hemorrhage in the affected region of the brain, with death the twelfth day.

Ovarian Tumors with Pathologic Pregnancy.—In Fraenkel's case a tumor had developed in each ovary along with the teratomatous fetus in the uterus, with hydramnion. After expulsion of the macerated fetus at the sixth month the ovarian tumors gradually retrogressed. Conditions thus were like those in fifty cases on record in which ovarian tumors developed with vesicular moles, and retrogressed after their expulsion. In the roentgen study of this case the advantages of preliminary injections of oxygen into the abdominal cavity were striking.

Zentralblatt für innere Medizin, Leipzig

Jan. 10, 1920, 41, No. 2

*Micro-Analysis of the Blood. J. Feigl.—p. 17.

Micro-Analysis of the Blood.—Feigl suggests other lines in which Bang's micromethod can be instructively applied, with slight modifications, as in Ljungdahl's research on volatile substances in the blood. The latter uses capillary tubes for the weighing procedure, instead of Bang's paper, for determination of the acetone in the blood. This capillary technic has a certain number of advantages for research of different kinds in this line, especially for analysis of lipoids. Instead of Bang's paper, Feigl uses asbestos fibers. They take up the blood as well as the paper, and allow estimation of the ash and even of its separate elements. Extremely small quartz beakers with platinum loops, and platinum iridium beakers—eventually filled with loose quartz—also answer the same purpose. Another field for research is with microcolorimetry. Feigl has succeeded in this way with extracts from as little as 200 mg. of blood. Determination of cholesterol is possible also with this technic. Picric acid reduction of sugar is another progress. In short, he concludes, "the reactive instrumental and theoretical possibilities of colorimetry and the wonderful nephelometric findings open prospects of applying Bang's fundamental principle in untried fields which promise great progress." (Nephelometry is the method of analysis by measuring the brightness of light reflected by particles in suspension in a tube.)

Jan. 17, 1920, 41, No. 3

*The Freezing-Point of the Blood in Diabetes. A. Lippmann.—p. 41.

Low Freezing Point of the Blood in Diabetes.—Lippmann calls attention to the lowered freezing point of the blood in eleven diabetics examined. In six of the eleven cases the freezing point was between -0.59 and -0.62 C., instead of the normal -0.56 to -0.58 . The intensity of the glycosuria or glycemia did not parallel the drop in the freezing point. This permanently abnormal freezing point indicates, he declares, some disturbance in the mechanism regulating the osmotic tension of the blood, and that other reducing substances, besides the glucose, are retained in the blood.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Dec. 13, 1919, 2, No. 24

*Reform in Medical Teaching. G. van Rijnberk.—p. 1933. Conc'n.
*Cancer of the Esophagus. Praag and C. E. Benjamins.—p. 1939.
*Cataract and Syphilis. J. A. Roorda Smit.—p. 1945.
Duties of Medical School Inspector. A. van Voorthuysen.—p. 1953.
Recurrence of Scarlet Fever. M. W. Marsman.—p. 1955.

Reform in Medical Teaching.—Van Rijnberk's article was summarized in these columns, March 20, p. 838.

Cancer in the Esophagus.—The age (25), the long duration, and the survival for fifteen months after a fistula had been made into the stomach, the metastases in the skin, and the

absence of metastases in organs nearby were special features of the case reported by Praag and Benjamins, as also the shortening of the esophagus. It measured only 16.5 to 19 cm. from the cricoid to the cardia, while the normal figure is said to be from 23 to 30 cm.

Cataract and Syphilis.—Smit recalls that potassium iodid and other drugs have been given empirically in treatment of cataract, but all except potassium iodid have been abandoned, and the absolute inefficacy of internal treatment has been proclaimed by Fuchs and others. Undaunted by others' experiences, Smit gave potassium iodid systematically to 6 patients with cataract. No benefit was apparent in 4 cases but in the 2 others marked improvement followed. The improvement in 11 other patients treated with mercury was pronounced in all and was most striking in some cases. All these patients have been under observation for several years; as also other cases not included in these statistics. The mercury was given intramuscularly every day; 0.01 c.c. in the form of the peptonate, in 3 c.c., plus 0.05 c.c. sodium cacodylate in 1 c.c. subcutaneously.

Norsk Magazin for Lægevidenskaben, Christiania

February, 1920, 81, No. 2

*Deformity of Clavicles. J. Yttri.—p. 129.
Was Influenza Pneumonia Contagious? K. Motzfeldt.—p. 165.
*The Leukocyte Count in Influenza. R. Bache.—p. 176.
Endemic Oxyuriasis. M. Solberg.—p. 184.
*Carcinoids in Appendix. K. Nicolaysen.—p. 186.

Malformation of Clavicles and Skull.—Yttri has compiled considerable literature on congenital deformity of the clavicles, and describes an extreme case of cleidocranial dysostosis in a man of 66, and two similar cranial cases. The tendency to this malformation has been noted through two and three generations. Gegenbaur has reported a case in which a woman with this deformity transmitted it to her children by two different husbands; some of her children were normal. This type of dysostosis may affect the clavicles alone or the skull alone, but the two are generally combined, and there were often other bone deformities. The cleidocranial anomalies form a special type, although certain features suggest rachitis, inherited syphilis, etc. Puberty is late but not impaired. The anomalies seem to be of the mutation type, as de Vries uses this term for plants. That is, the changes appear apparently spontaneously and are transmitted to the offspring, but disappear by cross breeding. Among the 70 cases on record, 20 were reported from Germany and Austria, 15 from France, 9 from Sweden and 6 from North America.

The Leukocyte Count in Influenza.—Bache found leukopenia the rule in his influenza cases, but the leukocyte count ran up when empyema developed. In influenzal pneumonia, the death rate was lowest in the group with high leukocytosis.

Carcinoid in Appendix.—Nicolaysen reports three cases in women and two in men, and remarks that these carcinoid tumors certainly do not belong in the carcinoma group. In two of his cases the symptoms had been those of acute appendicitis; in one, of chronic appendicitis, and two had never caused any symptoms.

Svenska Läkaresällskapetets Handlingar, Stockholm

Dec. 31, 1919, 45, No. 4

*Physiology of Physical Exercise. T. Resmark.—p. 383.
Psychic Constitution and Psychoses. H. Sjöbring.—p. 462.
Height of Swedish Recruits. G. Backman.—p. 494.

The Physiology of Physical Exercise.—Resmark has previously published eight reports on research on the physiology, balance, automatic action, statics and other elements of physical exercise. He here discusses the practical application of what is now known in respect to the physiology of exercise, applying it to school gymnastics, and urges the complete discarding of the traditional systems of exercising based on incorrect conceptions of the physiology of movement. Then we can build up a new pedagogic system when the ground is swept clear. The fundamentals for this are already provided.

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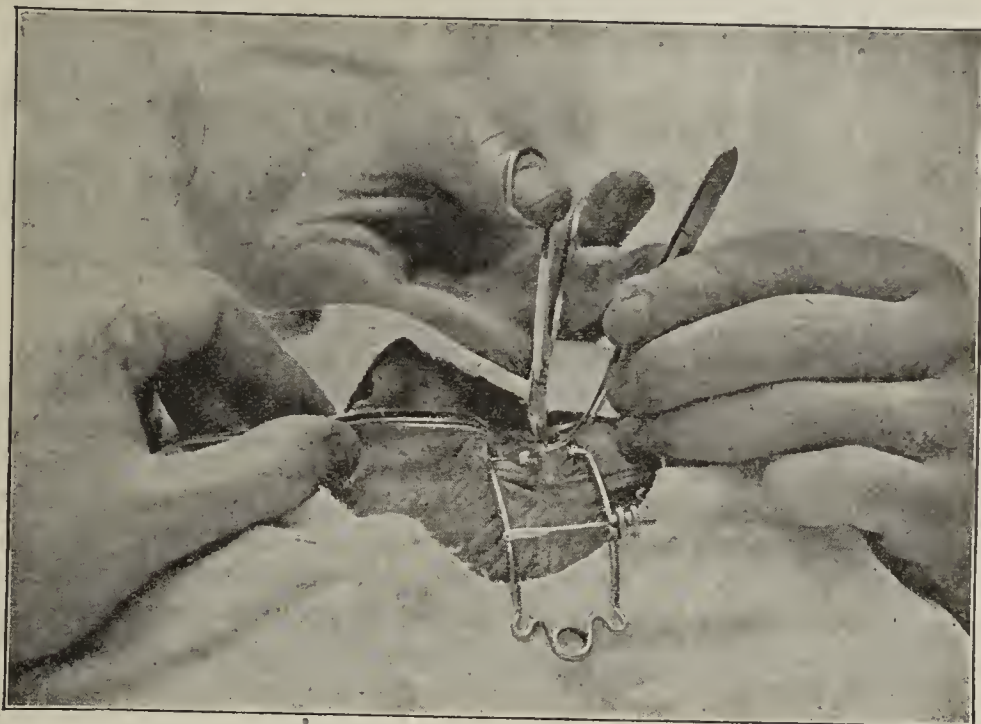
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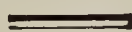


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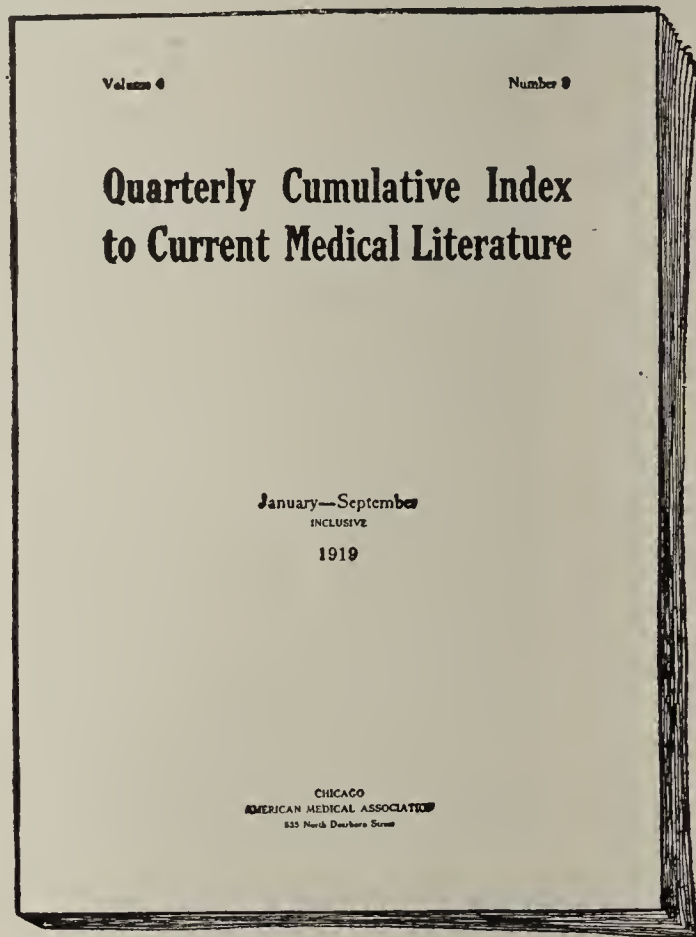
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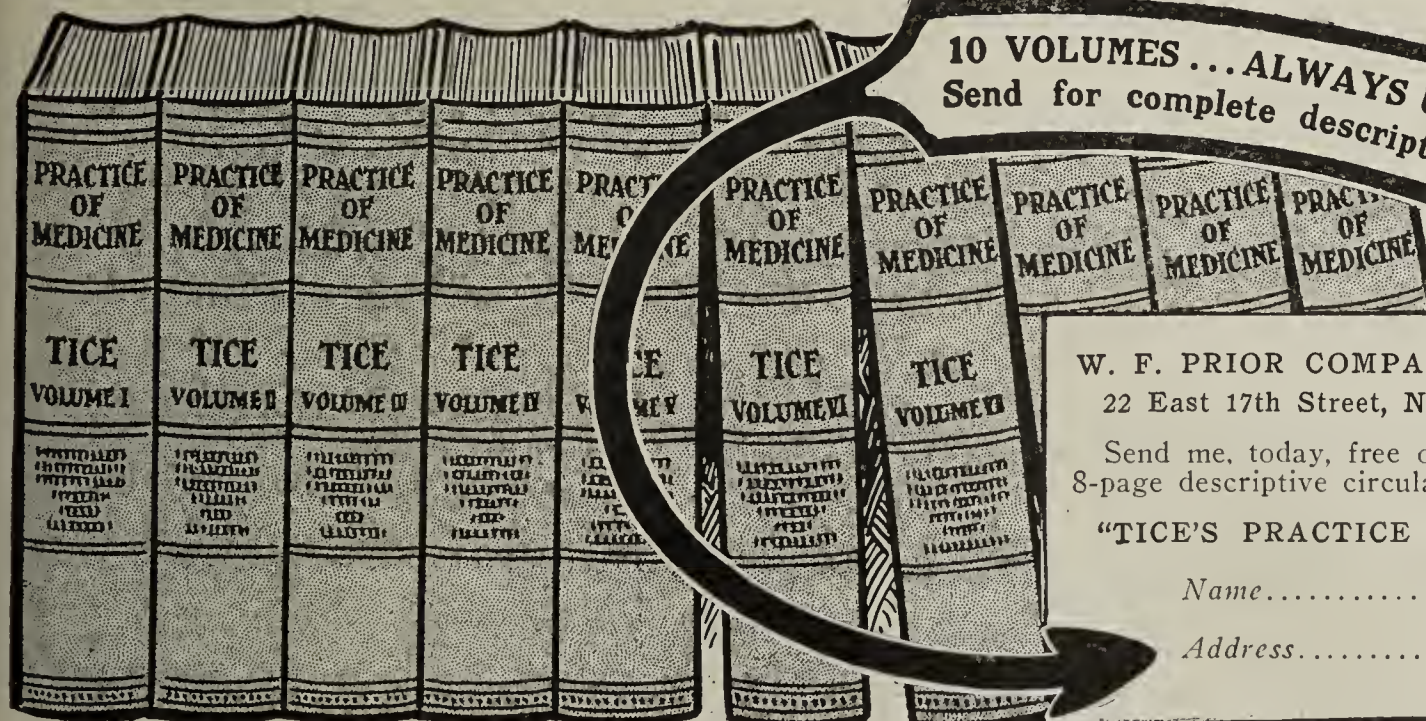
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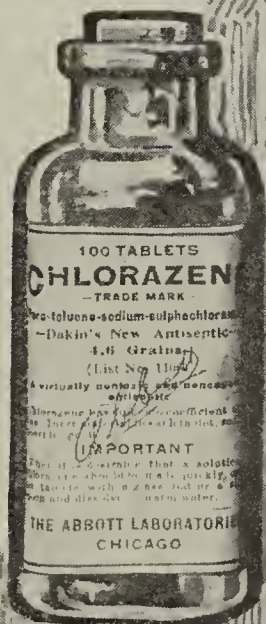
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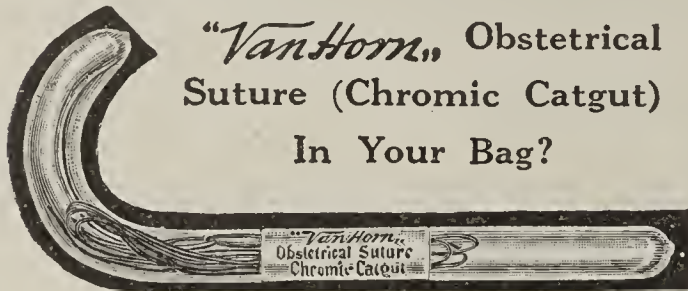
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Classified Ads. are payable in advance. To avoid delay in publishing, remit with order

OVER 50% of the classified ads are keyed, answers being sent in care of The Journal; each week we transmit to advertisers over 600 replies.

Occasionally we receive notification from one who has answered an advertisement stating that he has had no reply and asking if his letter was transmitted. Letters sent in our care are forwarded promptly, but naturally we cannot compel an advertiser to answer all replies he receives.

It is advisable to send copies instead of original references. For current issue, ad must reach us by 4:30 p. m. Monday.

Journal A.M.A., 535 N. Dearborn St., CHICAGO

N. B.—We exclude from our columns all known questionable ads. and appreciate notification from our readers relative to any misrepresentation.

ASSISTANTS WANTED

WANTED—FIRST ASSISTANT AT THE National Jewish Hospital for Consumptives, Denver, Colo.; good salary and maintenance; only single men of Class A schools with experience in tuberculosis work need apply; give full information in first letter. Add. Dr. Samuel Swezey, Superintendent. B

WANTED — FULL-TIME ASSISTANT BY Chicago ear, nose, throat specialist; fairly recent graduate Class A school and good hospital preferred; state experience if any, reference and salary desired. Add. 8350 B, % AMA.

WANTED—AN EYE, EAR, NOSE AND throat specialist of good habits and appearance, not over 35 years old; salary to start and will pay what man is worth commensurate with his ability; must have had at least two years' special training; practice located in Iowa; send qualifications in first letter and church affiliations. Carroll Clinic, Carroll, Iowa. B

WANTED—ASSISTANT WITH WEST VIRGINIA license, contract coal mine practice; salary \$200 per month; answer only if you mean business. Add. 8352 B, % AMA.

WANTED — TWO ASSISTANT PHYSICIANS at the Newberry State Hospital; one man and one woman; state qualifications, including general education, time of graduation and medical school. Add. the Medical Superintendent, Newberry State Hospital, Newberry, Mich. B

(Continued on page 22)

Food, Properly Used, Is an Aid to the Physician

NATURALLY in prescribing a diet the physician expects that the food supplied on this feeding program will be the best obtainable. Food that does not possess the most digestible qualities—the greatest food value—cannot produce the most beneficial results.

We are working to one great idea, namely: to contribute to the well-being of the American people by making good food, conveniently accessible; to identify such purity, quality and goodness by a distinctive mark, and to pursue this policy dependably, efficiently and economically.

For these reasons we feel sure that when the physician knows of the care that enters into the production of Armour's Oval Label Products, he will recommend them without hesitation.

ARMOUR  COMPANY
CHICAGO



The Oval Label takes the guess-work out of buying and puts contentment on the table.

"The Great Teacher of Surgery—PRACTICE"



POSTERIOR GASTRO-ENTEROSTOMY

If your technique is good make it still better; if you lack confidence for certain operations, acquire it by actual, intensive practice and adequate repetition. This opportunity is offered by the

LABORATORY of SURGICAL TECHNIQUE

through its 50 hour post-graduate course in general surgery. Here the student performs the actual operations—himself—on the stomach, intestines, gall-bladder, kidney and ureter, thyroid, hernia, etc.—under competent instruction with strict attention paid to anaesthesia, table toilet, etc. A review of surgical anatomy is embraced in the course.

X-RAY INSTRUCTION

Roentgen Diagnosis,
Fluoroscopy
Deep Therapy
Radiographic
Technique

Write for Details

Now established 5 years, with a record of hundreds of satisfied students. The work embodies the best technique of the time, together with many original improvements. Course completed in seven days (50 hours), thereby saving time and money for the doctor. Special arrangements may be made for courses in orthopedics, eye, ear, nose and throat, x-ray, surgical anatomy, etc.

For descriptive literature, terms, etc., address

DR. EMMET A. PRINTY, Director, 7629 Jeffery Ave., Chicago, Ill.

FACULTY

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Dr. Philip H. Kreuscher
Dr. Kellogg Speed

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CONSULTING FACULTY

Dr. E. Wyllys Andrews
Dr. Carl Wagner
Dr. William E. Morga

Dr. A. A. Strauss
Dr. Gustav Kolischer
Mr. Arthur E. Willis

Tonics and Sedatives

SPRING FEVER

Laziness, weariness,
Cheeriness, dreariness,
Happiness, I'll confess
I'm feeling tired!
A stretch and a yawn,
A feeling your're gone—
Spring fever, son!
Wake up! You're fired!

Absolute Proof

Cleveland Plaindealer

Editor Plain Dealer—Sir: I have been traveling through this state for the last six months and I never saw the general public's vitality so low in appearance. The majority of the people have some touch of a hacking cough, with thin faces and much sneezing and sniffing noses. I am honestly and thoroughly convinced that it is lack of sufficient alcohol for the people on account of prohibition. This thing has had and is having a depressing effect upon the people generally which is lowering the people's vitality. Man cannot live without alcohol.

If you do not think this is true, will show you that this is more right than wrong. The people have no buoyancy about them any more. Every hotel has its lobbies filled with a kind of restless dreamers, and every other place, except when ardently at work. There has developed a kind of sameness of spirit of everyone that is depressing to most and non-interesting to each.

A. COLTON PARKER.

Greenville, Pa.

THE BETTER PART

Jones.—What part did he take in the argument?

Smith.—He listened!

(Continued on page 24)

X-Ray Technique Fluoroscopy, Plate Reading X-Ray Therapy

Special Personal Instruction
Complete Course (6 Weeks)
Arrangements can be made for short
courses of parts of work.

Post Graduate Medical School
of Chicago

2400 S. Dearborn St. Dept. B.

Cystoscopy Urethroscopy Genito-Urinary & Venereal Diseases

Dr. Leo Michel and staff will continue their classes and courses of individual instruction in these subjects at the N. Y. School of Clinical Medicine. Apply to

Dr. Leo Michel

15 Central Park West, New York City, N. Y.

A Private Post-Graduate Course

in Urology includes all modern
methods of diagnosis and treat-
ment. Classes limited.

For particulars address the

BREMERMAN UROLOGICAL HOSPITAL
1919 Prairie Ave., Chicago

DON'T WAIT

for that suitable opening to
just "happen." Find it by
means of a Classified Ad in

THE JOURNAL

(Continued from page 20)

WANTED—ASSISTANT IN PRIVATE HOSPITAL and general practice, 1919 or 1920 graduate of Class A college; salary and maintenance. Add. M. J. Kenefick, Algona, Iowa. B

WANTED — TWO ASSISTANT PHYSICIANS in mining district of northern Michigan; hospital connections; salary \$150 per month; drugs and supplies furnished; must be registered in Michigan. Add. 8314 B, % AMA.

WANTED — ASSISTANT PHYSICIAN—Gardner State Colony, Gardner, Mass. B

WANTED — ASSISTANT PHYSICIAN AT state hospital; one with some psychiatric experience preferred. Apply to C. F. Applegate, Superintendent State Hospital, Mt. Pleasant, Iowa. B

WANTED — BY INTERNISTS, CLINICAL assistant; recent graduate in medicine; either man or woman, with an aptitude for and some training in technical work along laboratory lines. Add. 8302 B, % AMA.

WANTED—CLINICAL ASSISTANT WHO is a good roentgenologist and technician; must be graduate in medicine; give references and state when services would be available. Add. 8303 B, % AMA.

WANTED—ASSISTANT PHYSICIANS AT the New Jersey State Village for Epileptics, men or women; must be single, have good general education and hospital experience; give full particulars in first letter as to salary expected, age, height, weight, preliminary education, medical college, hospital and other experiences; date can accept appointment; include references and copy of recent photograph. Add. David F. Weeks, M.D., Superintendent, Skillman, N. J. B

WANTED — ASSISTANT IN PENNSYLVANIA mining practice; single; able to do industrial surgery and general practice; salary \$185 per month and all supplies furnished; if not qualified, don't reply. Add. 8345 B, % AMA.

WANTED — A YOUNG ASSISTANT OR associate to eye, ear, nose and throat specialist; must be good operator; kindly give full particulars, such as age, experience, religion, social state and salary expected. Add. 8209 B, % AMA.

WANTED—ASSISTANTS—INDIANA HOSPITAL for the Insane; single men, preferably experienced in psychiatry; give full information concerning education, hospital experience, religious affiliation, age and nativity. Add. 8184 B, % AMA.

WANTED — YOUNG PHYSICIAN WITH hospital experience, unmarried, must be in good health, active and energetic; also able to register in Minnesota; to assist in large mining practice in connection with a hospital, where all equipment is furnished, including transportation; give age, school, experience, salary expected, including board and room, in first letter. Add. 8187 B, % AMA.

WANTED — TWO ASSISTANT PHYSICIANS, experienced in psychiatry, in state hospital; must be graduate of A plus school, eligible to register, energetic, industrious and unmarried; salary \$1,200 to \$1,500 and maintenance; forward recommendations with full information letter. Add. 8181 B, % AMA.

WANTED — ASSISTANT PHYSICIAN IN state hospital for insane in the middle west; good position; single man preferred; state qualifications. Add. 8252 B, % AMA.

WANTED—A PERMANENT ASSISTANT for morning hours at a West Side charitable eye clinic, Chicago; give age, school, experience and all details in first letter; position affords valuable experience in ophthalmology. Add. 8250 B, % AMA.

WANTED—ASSISTANT PHYSICIAN, Louisiana Hospital for Insane, Pineville, La.; experienced single man preferred; salary, \$200 with maintenance; if married with small family same salary, with water, fuel, lights and laundry and unfurnished cottage but no maintenance. Write Dr. John N. Thomas, Superintendent. B

WANTED — ASSISTANT TO EYE, EAR, nose and throat specialist; applicant must be fairly young, pleasing personality and willing; salary according to previous experience and training; send photograph; give height and both general and special training you have had; must be good in refraction. Add. 8287 B, % AMA.

(Continued on page 24)

Whatever Individual Thought May Be

on the general merits of coffee as a table beverage for all the family—

Individual observation inevitably leads to the conclusions that among adults, coffee does sometimes re-act harmfully; and that with children, coffee is indeed a dangerous servant.

Where coffee is contraindicated, a safe and satisfying alternative is found in

Instant Postum

The agreeable coffee-like flavor conveys no sense of loss from taste; the absence of coffee alkaloids, insures freedom from ill results; and its composition from different parts of wheat, roasted with molasses, naturally provides some nourishing value.

Users of Postum Are Its Best Advocates

“There’s a Reason”

Samples of Instant Postum, Grape Nuts, and Post Toasties, for personal and clinical examination, will be sent on request to any physician who has not received them.

POSTUM CEREAL COMPANY, Inc.
Battle Creek, Michigan

(Tonics and Sedatives Continued)

WHEN EXPERTS DISAGREE

ON THE ONE HAND

A Paris dermatologist writing to the *Paris médical* recalls that before the war "women had decided to expose to wind and weather most of the sternum, in a triangle totaling about 167 square centimeters. It was a new medio-thoracic dermatosis for which the physicians were consulted then, and this open-door policy allowed Spanish influenza to obtain a foothold in the trachea of the women. From thence to the men was only a step." . . . "During the war the women helping in the hospitals at the front shrouded themselves in veils and collars, but the women at home kept enlarging their triangle until the raw surface exposed can no longer be estimated by plane geometry but requires a complicated calculation to compute it" . . . "The pathology, too, has shifted. Now it is pneumonia of the base, pleurisy, nephritis *a frigore* and even lumbago that menace our *grandes déshabillées*." Milian adds "the largest expanses of skin thus exposed are those of the menopause or beyond," and he fears that new chapters in pathology may be opening before us. A report of five cases of an atypical erythema nodosum, developing between shoe-top and short skirt, was recently published in a German journal.

AND ON THE OTHER

London. (By Mail).—A low-necked blouse isn't a "pneumonia" blouse at all—it's a health-giving, life-saving garment.

Anyone doubting this statement is at liberty to consult Professor Leonard Hill, who has been making investigations for the medical research committee.

A bashful man would shrink from investigating so flimsy and decollete a portion of women's apparel. But Professor Hill isn't bashful.

He investigated and made discoveries, all in the sacred cause of science.

He asserted that the blouse does not cause pneumonia, but is conducive to good health—the open neck acting as a chimney to the clothes, letting heat and moisture escape.

A VERY SICK MAN

Letter received by Dr. G. V. C., —, Ia.

Dr. C——. Will you come down look Mr. Bates over, he is all in all over. Mrs. Bates.

Here! Kitty! Kitty!!

Boston Herald

Mickey Devine, scrappy, and lightweight catcher with the Red Sox squad, is scared pink. He thinks he is bleeding to death from the results of having a molar yanked here Friday afternoon. It has been bleeding ever since. He had expert advice today and was told that as long as the gum bled, everything was all right, for there was a puss sack at the foot of that molar.

A SLIGHT FAVOR

Jones was awakened one night by burglars. He got up and went downstairs, and as he entered the dining-room, where the thieves were engaged in wrapping up the silverplate, they covered him with their revolvers. This, however, did not disconcert Jones at all.

"Pardon me for disturbing you, gentlemen," said he, "but I should like you to do me a favor. If it is not too much to ask, will you be so good as to post this letter for me? It must go tonight. It's the premium for my burglary insurance."

A Spring Warning

Dawson (Ga.) News

The death of George McPhilimy, a farmer of near Atchinson, Kan., was caused by a horse fly, which he swallowed last summer. The insect entered a lung and caused tuberculosis.

(Continued on page 26)

The LABORATORY of
SURGICAL TECHNIQUE

7629 Jeffery Ave., Chicago

Personal Instruction. Actual Practice
and Exceptional Equipment

Particular attention to General Abdominal Surgery, including resection of intestine, lateral and end to end anastomosis, gastroenterostomy, pyloroplasty, partial gastrectomy, cholecystostomy, cholecystectomy, appendectomy, etc. Course is completed in 7 days (50 hours) —minimizing time away from practice.

Those interested in perfecting surgical skill in minimum time should write for descriptive folder. See our adv. on page 22.

PRACTICE—REPEAT—MASTER
SURGICAL TECHNIQUE

SPECIAL SHORT COURSE

Demonstration on Cadaver by

INSTRUCTOR

Operation on animal by

STUDENT

DEMONSTRATIONS AND OPERATIONS

include Thyroid, Stomach, Intestine, Gall Bladder, Appendix, Hernia, Prostate, etc., etc.

Post-Graduate Medical School of Chicago

2400 S. Dearborn St. Dept. B. EMIL RIES, Sec

THE MASSEY HOSPITAL

For the Treatment of Cancer and Other Tumors

Special facilities are installed for the Ionization and Electric Heat treatment of malignant growths, in conjunction with the more generally employed methods, and for the Apostoli and Roentgen Treatment of fibroid tumors.

For information address DR. G. BETTON MASSEY
1823 Wallace St., Philadelphia.

Wassermann Laboratory

2159 Madison St., CHICAGO

Alcoholic Luetic Liver Extract, Amboceptors, Laboratory Materials, Hypodermic Syringes, Gravity Outfits, Neo-Arsphenamines, Wassermann Tests Our Specialty.

GUINEA-PIGS FOR SALE

X-RAY DIAGNOSIS

SPECIAL short course in x-ray plate and screen interpretation. Limited to physicians only. Small classes permitting individual instruction. Large clinic in gastro-intestinal, pulmonary and cardiac lesions, bone and joint diseases. Also available an extended course in technique, therapy, diagnosis, etc.

For detailed information or reservations, write

EDW. S. BLAINE, M.D. (Roentgenologist,
1825 W. Harrison Street Cook Co. Hospital.)
CHICAGO

Bargains in Medical Books

Med. & Surg. Therapy, 5 vols.,
\$30.00 for \$25.00.

Sajous, Cyclopedia, 9 vols., \$56.00
for \$42.50.

Forsheimer, Therapeutics, 5 vols.,
\$35.00 for \$26.50.

Keen, Surgery, 6 vols., \$48.00 for
\$36.00.

All books are last edition, like new

LOGIN BROS.

1814 W. Harrison St. Chicago, Ill.

Second Hand Equipment

CAN BE BOUGHT OR SOLD THRU A
CLASSIFIED AD IN THE JOURNAL

(Continued from page 22)

WANTED—WOMAN AS ASSISTANT PHYSICIAN, graduate of Class A medical school; a recent graduate with experience in a general hospital preferred. Apply to Dr. J. A. Houston, Supt. State Hospital, Northampton, Mass., stating qualifications and experience. B

PHYSICIANS WANTED

WANTED—INDUSTRIAL PHYSICIANS—Salary \$2,500-\$3,000; state full particulars. Add. 8356 C, % AMA.

WANTED—PHYSICIAN AND SURGEON capable of doing major surgery, to take position giving him a large established practice of \$1,500 to 2,000 families, income from which is entirely his own; free office rent, light and telephone; no investment; must have office furniture and instruments; salary \$150 per month; name states licensed to practice in. Add. 8353 C, % AMA.

WANTED—PHYSICIAN FOR SIX TO eight weeks in Wyoming mining camp; work light; all expenses paid; give particulars and salary wanted. Add. 2307, % F. V. Kniest, Bee Bldg., Omaha, Neb. C

WANTED—FOR RAILROAD SERVICE IN central eastern section of United States, physicians 25 to 35 years of age, from New York, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Ohio, Indiana and Illinois, for full-time service; salary \$2,400 per year; after four years, \$2,700; further advancement according to seniority. Add. 8339 C, % AMA.

WANTED—EXPERIENCED CLINICAL pathologist for private laboratory; hospital connections; middle west; good salary. Add. 8326 C, % AMA.

WANTED—AT ST. LUKE'S HOSPITAL, Bethlehem, Pa., an experienced internist as chief of the department of internal medicine; must be well qualified and recommended. For particulars add. St. Luke's Hospital, Bethlehem, Pa. C

WANTED—HOUSE OFFICER—BY MODERN general hospital of 175 beds near New York City; service mostly surgical; salary and maintenance. Add. 8317 C, % AMA.

WANTED—AT ONCE, A MAJOR SURGEON to help organize a hospital in railroad town of 3,000 in West Virginia with drawing territory of about 15,000; good proposition if acted on at once. Add. 8312 C, % AMA.

WANTED—A PHYSICIAN FOR MEDICAL mission of Presbyterian Church among the Navajo Indians of western New Mexico; salary \$2,000, residence and traveling equipment; a man of business ability, missionary motive and not too old to learn the Indian language is desired at once. Add. Superintendent, Department of Indian Missions, Home Mission Board, 156 Fifth Ave., New York. C

WANTED—EYE, EAR, NOSE, THROAT specialist, city 20,000, central Illinois; fine rich territory; great opportunity for right man; nothing for sale except new equipment; great bargain; quick action wanted. Add. 8063 C, % AMA.

WANTED—YOUNG WOMAN WITH M.D. degree to take charge of clinical laboratory and give anesthetics; one with knowledge of x-ray preferred; small private hospital south; salary to begin \$100 per month and maintenance. Add. 8238 C, % AMA.

WANTED—DOCTOR WITH EXPERIENCE in treating tuberculosis to take charge of our county tuberculosis hospital, 125 beds; permanent position for properly qualified man. Add. Dr. L. C. Chenoweth, Joplin, Mo. C

WANTED—FIRST-CLASS PATHOLOGIST, graduate in medicine; only those having had number one experience need apply; must be capable of starting and equipping a pathological laboratory; hospital in middle west; in first letter give experience, etc. Add. 8259 C, % AMA.

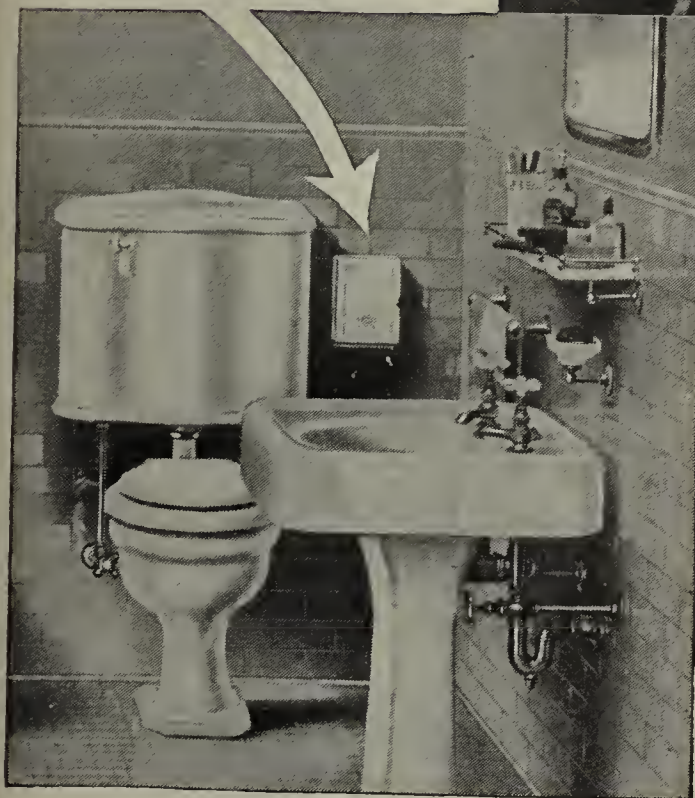
WANTED—PHYSICIAN—SOUTH DAKOTA town; sponsorship druggist; large territory; ideal small town location; population 1,200; good crops; Catholic and Protestant churches; good schools; married doctor desired. Add. 2252, % F. V. Kniest, Bee Bldg., Omaha, Neb. C

WANTED—A WELL-TRAINED PHYSICIAN to take charge of Sydenham Hospital (infectious diseases); salary \$2,000 a year, with residence and food. By the Commissioner of Health, Baltimore, Md. C

(Continued on page 26)



Office of the modern practitioner



Lavatory in Physician's Office

THE Onliwon Paper Towels
REGISTERED U. S. PATENT OFFICE

THE ONLIWON HYGIENE
REGISTERED U. S. PATENT OFFICE

are protected from dust and germs in a white enameled cabinet that operates without knobs for the hand to touch. Each towel is served singly and *folded once*—a towel served folded is doubly absorbent and firm.

ONLIWON TOWELS are made in *three* types—all *equally sanitary* but each a *different texture*. You may choose the kind best suited to your needs.

Send us your name and address and we will supply you with sample Onliwon Towels and an Illustrated Folder describing the Onliwon Cabinets.

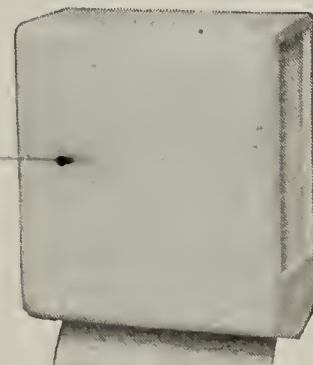
A. P. W. PAPER COMPANY, 1291 Broadway
Albany, N. Y.

is the automatic service of satin-finished tissue from the Onliwon Protecting Cabinet—two firm, full-sized sheets at a time. The cabinet holds one thousand sheets.

ONLIWON TOILET PAPER CABINETS are *neat* and *unobtrusive* in size. They are made in nickel, white porcelain and set-in-tile—a cabinet that fits into a recess in the wall.



The hand touches no part of the cabinet.



This Porcelain Cabinet will harmonize with your white tiled lavatory.

The Three Scourges:

**Syphilis
Gonorrhea
Tuberculosis**

have been recognized and are being controlled by laboratory methods coupled with clinical investigations.

THE HECHT-GRADWOHL

control test materially enhances the laboratory recognition of these three diseases.

We offer, therefore, exceptional service to physicians interested in

Wassermann

Gonorrheal Complement Fixation

Tuberculosis Complement Fixation

Send your blood specimens to us for these tests. We have convinced many of the value of the Hecht-Gradwohl Test by a practical trial.

**PASTEUR TREATMENT
BY MAIL**

**BLOOD CHEMICAL
ANALYSES**

(to better control the diagnosis and treatment of nephritis, diabetes, gout, etc.).

Free Containers and Literature

Gradwohl Laboratories
7 West Madison St., Chicago, Ill.
926 N. Grand Ave., St. Louis, Mo.

(Tonics and Sedatives Continued)

ADDITIONS TO SLANG

6. *Schnook*.—noun, sing.—A physician who forgets to send bills.

Example.—Dr. Smith, the well known and beloved schnook went over the hill to the poorhouse yesterday.

7. *Excoliptosis*.—noun, sing.—The habitual taking of laxatives.

Example.—After practicing excoliptosis for three years, John Dorando won the international 100 yd. dash at Athens.

Nanny Was a Lady

Ad in Upland (Calif.) News

LADY GOATS — Listen — Pure bred Toggenburg X. L. Glen Rock, 3901, grandson of \$1500 Allessandro — wishes to meet you at N. W. corner 21st and San Antonio. Don't call Sundays. Phone 336-J-5. Chester C. Clewett. 50tf

THE ORDER IN ORDER

He had been sick. For two days he was forced to stay abed. Naturally he had to eat, and the doctor told him just what Le Hi, the veteran Chinese cook, could prepare for him. The doctor wrote it down just as he wanted it. It was all soft food, easily digested, and it eliminated, as doctors always do, everything the patient wanted.

"First you may have some clear soup for your dinner," said the doctor, and he put it down thus:

1. Clear soup.
2. Celery root salad.
3. Oyster stew.
4. Green tea.
5. Rice pudding.

That sounded fair, so the patient called the cook. Up came Le Hi, all smiles and good nature, to see what the sick man would have.

He gave the cook the menu the physician had made up. About an hour later Le Hi, smiling, from ear to ear, struggled up the stairs and lugged into the room one bowl of clear soup, two celery root salads, three oyster stews, four pots of green tea and five dishes of rice pudding.

Advanced Mathematics

San Francisco Chronicle

JERSEY CITY (N. J.), February 26.—Mrs. Richard Doherty, wife of Judge Doherty of the Court of Common Pleas in Jersey City, today gave birth to twins for the fifth time in their married life of ten years. The youngsters and the mother are doing well. The family now includes six girls and boys, two children having died.

A NEW PROOF OF INSANITY

Headlines in N. Y. Journal

**MRS. SPRANG NOT SANE;
WILL VOID.**

**VERDICT UPSETS TESTA-
MENT OF**

THEY DUG OUT

It happened at Camp Jackson, South Carolina, during the war. The major was giving a lecture on dugouts to a class of officers. Although not well prepared on the subject, he decided during the course of the lecture to use the blackboard in order to show the inside of a dugout. To represent the beds, he wrote: "Bunk, bunk, bunk, bunk." The class broke up.—Judge.

(Continued on next page)

(Continued from page 24)

WANTED — MINNESOTA — TWO OR three physicians for country clinic; all expenses; \$200 per month and commission outfit furnished, including auto; one must be Bohemian; others any nationality. Add. 8158 C, % AMA.

INTERNS WANTED

WANTED—WOMAN INTERN—ONE YEAR service in general hospital in Chicago; excellent opportunity for acquiring general experience. Add. 8174 D, % AMA.

WANTED—INTERN FOR STATE INSTITUTION; salary \$600 per year. Add. 8280 D, % AMA.

NURSES WANTED

WANTED—POSITION AS NIGHT SUPERVISOR will be vacant April 1; applicant must have institutional experience; salary \$90 a month. For particulars apply to Miss Edith P. Whicher, Superintendent, Greenwich Hospital Association, Greenwich, Conn. T

WANTED—ILLUSTRATOR — GRADUATE nurse who can do illustrating; partnership surgeons; Pacific Northwest Hospital; duty mornings; office afternoons. Add. 8328 T, % AMA.

WANTED—REGISTERED NURSE, SUPERINTENDENT for 15-bed hospital, northwest Iowa, begin May 1; ability to handle patients tactfully more essential than experience; good wages and pleasant place. Add. 8266 T, % AMA.

NURSES FURNISHED FOR ANY KIND work any where. Quick service; also attendants, institutional employees, office help, etc. F. V. Kniest, Bee Bldg., Omaha, Neb.

WANTED — SUPERINTENDENTS — SURGICAL and general duty nurses, dietitians; send for free book, Aznoe's Central Registry for Nurses. 30 N. Michigan Blvd., Chicago.

STENOGRAPHERS

WANTED—STENOGRAPHER-CLERK FOR medical department Mexican railway; man preferred; must be single, knowledge Spanish desirable; also some experience with medical work; salary \$125 U. S. currency, with maintenance and transportation; position open May; describe qualifications fully. Add. Chief Surgeon, S. P. de Mexico, Empalme, Sonora, Mexico.

LAB. TECHNICIAN WANTED

WANTED—TECHNICIAN IN NEW MODERN hospital located in central Ohio; one competent to take charge of up-to-date laboratory; preference given applicant who can also operate Victor x-ray machine; excellent salary to right person. Add. 8337 V, % AMA.

WANTED—LABORATORY TECHNICIAN—Only very capable person need apply; one thoroughly familiar with Wassermann test; to assist in x-ray laboratory; experience not necessary in latter; \$200 per month with liberal increase if satisfactory; references required. M. H. Glover, M.D., % General Hospital, Wichita Falls, Texas. V

WANTED — BY SURGEON, A WELL-trained woman for technical work in office, x-ray and clinical laboratory; send photo, references, age, religion and salary in first communication; location in western state. Add. 8318 V, % AMA.

WANTED — YOUNG WOMAN TO TAKE charge of x-ray laboratory in hospital of 150 beds; must have thorough knowledge of the work; give references; state experience, salary desired first letter. Add. 8310 V, % AMA.

WANTED—WOMAN LABORATORY AND roentgen technician in physician's and surgeon's office, Des Moines, Iowa; state whether practical or graduate nurse, age and salary expected. Add. 8308 V, % AMA.

WANTED — DIRECTOR FOR GENERAL laboratory in hospital of 250 beds in middle western city of 250,000; must be qualified in blood chemistry, serology, bacteriology, tissue work and general laboratory diagnosis; attractive salary and additional financial privileges to qualified man. Add. 8225 V, % AMA.

PARTNERS WANTED

WANTED — A NEW YORK PHYSICIAN, with well located and equipped office suite, desires to share same with a recent graduate doing general medicine or pediatrics. Add. 8141 G, % AMA.

WANTED — OPTHALMOLOGIST AND otolaryngologist as assistant with view to partnership; exceptionally clean and steadily growing practice, capable of expansion; can with right man be doubled in short time; location Seattle, 400,000 population; unexcelled climate; promising future; applicant must be well schooled and of unimpeachable character; state full particulars, personal as well as professional. Add. 8023 G, % AMA.

PARTNERSHIP WANTED

WANTED — BY A WELL-TRAINED EYE, ear, nose and throat specialist permanent association in a city with a high class man who contemplates retiring; high credentials exchanged. Add. 8338 H, % AMA.

WANTED — EX-SERVICE PHYSICIAN with eight years' experience in genito-urinary and skin diseases, serology, pathology and laboratory techniques, desires association with physician or group of physicians in west or southwest; temporarily employed; aged 36, single. Add. 8346 H, % AMA.

WANTED — NOILVWROBNI — as assistant, associate or partner by eye, ear, nose and throat man of long civilian and army experience; highest references. Add. 8148 H, % AMA.

WANTED — PARTNERSHIP WITH OLDER surgeon or association with group, Iowa preferably; graduate Iowa, 1911; B.S., '09; postgraduate work; 37, married; references exchanged. R. E. Gunn, 1104 Tower Bldg., Chicago.

WANTED — CARDIOVASCULAR AND electrocardiographic specialist, at present director of cardiac department of Class A hospital and attending physician to Class A hospital in the east, desires association with high class group in the southwest, preferably California. Add. 8208 H, % AMA.

WANTED — PARTNERSHIP WITH SUR-geon or physician wishing to develop surgery; by graduate A plus university; college A.B.; Protestant; aged 33; internship in large surgical hospital; postgraduate work; financial means for first-class proposition. Add. 8171 H, % AMA.

WANTED — INTERNIST DESIRES PART-nership with surgeon or group of physicians; Am Rush, 1906, graduate; served 18 months' internship, St. Luke's, Chicago; was in general practice 8 years before entering army; been base hospital chief of medical service since return from France; expect release from service in near future; prefer practice in western states; licensed Illinois, Montana, Washington; will consider location in large city only; with salary or guarantee of at least \$3,000 annually, with opportunities for rapid increase; prepared to give references. Add. 8140 H, % AMA.

WANTED — PARTNERSHIP OR ASSOCIA-tion with group or older surgeon; A plus schools and hospitals and practical experience; thoroughly trained in general surgery and urology; American; army service; 34, married; Shriner and F.A.C.S.; affable and industrious; kindly state full details. Add. 8115 H, % AMA.

DIETITIANS' LOCATIONS WANTED

DIETITIANS FURNISHED HOSPITALS anywhere in U. S. A. without charge. Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago.

LOCATIONS WANTED

WANTED — A YOUNG ARMY OFFICER with a wide experience and with A1 references, desires to buy a practice in a town of 10,000 in Massachusetts, or will consider a hospital appointment. Add. 8355 E, % AMA.

WANTED — PHYSICIAN AND SURGEON desires position or location; graduate Harvard Medical College; qualified in surgery and general practice; excellent references; consider position or contract or income; prices. Add. 2308, % F. V. Kniest, Bee Bldg., Omaha, Neb.

WANTED — LOCATION OR ASSISTANT-ship with busy physician, country practice preferred; graduate Ann Arbor; young, thoroughly reliable, married, no children, Protestant; special training in obstetrics; Wisconsin or reciprocating state. Add. 8336 E, % AMA.

(Continued on next page)

Safety first, and then Saving and Service



Two men sitting in a club, after luncheon: one interested in what the other is saying, himself says, "I didn't know any company helped policyholders safeguard their health." The other says, "The Postal Life does. Here's one of the Company's Health Bulletins about 'Exercise' and I tell you it's worth while."

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(Tonics and Sedatives Continued)

How to Grow Slender*Akron (Ohio) Times*

"No one accumulates superfluous flesh unless he eats more than he can utilize. Or rather, he eats more than he does utilize, for as a rule the fault is rather in his careful avoidance of real exercise than Yowow ktaged."

All out! End of the line!!

NOT VALUE RECEIVED

He.—It doesn't pay.

She.—What doesn't?

He.—It took me twenty years to learn to like olives and now I'm afraid to eat them.

A Tragedy in Seven Lines*Ad in Chicago News*

WILL PERSONS WHO SAW MAN knocked down by a brown taxicab on 12th-st., betw. Blue Island and Racine-av. on Sunday, Feb. 22, 1920, at about 10:30 a. m., please communicate with his widow. Address X S 133, Daily News.

MORE CAUSES OF DEATH*L. O. T., Maryland*

Cause of death:—Washed her weekly laundry yesterday.

Age:—Three months in uterus.

Cause of Death:—He was simple and eat too much and it killed him.

E. G. B., Kansas

Cause of death:—Chronic nephritis, became unconscious and died without my being called.

ANIMAL INSTINCT

"Lawdy, niggah, what am dat er buzzin' rund mah haid?"

"Dat am er hoss-fly."

"Er hoss-fly? What-what am dat?"

"Why, er hoss-fly is a lil' fly wot buzzes 'round hosses, cows an' jackasses."

"Look heah, niggah, does you mean t' sinuate dat I'm er jackass?"

"No, sah, chile, Ah doan' mean t' 'sinuate nuffin. But you-all can't fool er hoss-fly."

Ossified*Columbus (Ohio) Dispatch*

Findlay—Mrs. George Sullivan aged 27, of Bowling Green, is near death because ossification has nearly reached her heart. Four years ago she suffered an operation for the removal of her tonsils. Soon after that her body began passing through a state of ossification.

GRAVE YARD SOLILOQUY

I've been here now some twenty years
A victim of my doubts and fears.
Before I was quite five years old
A hundred stories I'd been told
Of ghosts and spirits, cats and mice,
Lions and tigers, but nothing nice.
And so, upset by fear and dread
I used to hate to go to bed.
When darkness came I could not sleep
I covered up, and dared not peep.
Became a coward, afraid to stand
Fearing my shadow and each man's hand.

One day while walking on the street
I heard the taps of running feet.
Trembling, I too began to run
When bang—somebody fired a gun.
I could not stop, my terror great
Would not consent to hesitate.
"Stop" someone cried, I ducked my head—
For look of guilt they shot me dead.

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ALWAYS READY—Just add water. No time lost—no waste.

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(Continued from preceding page)

WANTED—LOCATION BY GRADUATE A school, Virginia or Maryland, in good community; good roads and schools and bear full investigation; can buy equipment or moderately priced property. Add. 8323 E, % AMA.

WANTED — IN APRIL, BY REGULAR Army medical officer, general practice in New York, New Jersey or Connecticut; town 10,000 or under; require good roads and collections; will buy real estate and equipment. Add. 8056 E, % AMA.

WANTED — UNOPPOSED PRACTICE IN prosperous village, near Chicago preferred; buy drugs and rent house with option of buying later; state details first letter; must bear investigation. Add. 8321 E, % AMA.

WANTED—LOCATION WITH GROUP OF physicians by internist, preferably west; graduate A1 school; also P. G. work abroad; at present have college and hospital (1300-bed) affiliation; must be strictly ethical combination; give details; references exchanged; will consider institutional appointment. Add. 8320 E, % AMA.

WANTED—TO HEAR FROM RETIRING physician desiring to sell practice in Minnesota or Wisconsin. Add. 8248 E, % AMA.

WANTED — PRACTICE, ASSISTANTSHIP or partnership by recent B.S., M.D.; graduate of A school; 18 months' thorough training in modern 500-bed hospital; aged 29, Protestant; some means; ready in June; western state preferred. Add. 8223 E, % AMA.

WANTED — CONTRACT PRACTICE OR appointment as steamship physician; graduate Class A school; several postgraduate courses Johns Hopkins; 12 years' successful practice; married; no children; Protestant; aged 40; perfect health; highest references. Add. 8030 E, % AMA.

WANTED — LOCATION OR ASSOCIATE-ship by experienced eye, ear, nose and throat man; A1 refractionist; capable operator; good appearance; clean habits. Add. 8198 E, % AMA.

WANTED — LOCATION BY COMPETENT physician and surgeon; 10 years' experience in industrial, contract and private practice; graduate A1 school; married, Protestant, aged 34; will consider assistantship; prefer Illinois or Minnesota. Add. 8159 E, % AMA.

WANTED—IN NEBRASKA—PREFERABLY location, position, contract or industrial practice, by young doctor; single, Protestant; graduate University Nebraska; internship; surgical ability; registered Nebraska; best references. Add. 8268 E, % AMA.

WANTED—LOCATION OR PRACTICE DESIRED in Colorado, Nebraska, Kansas, New Mexico, Idaho or South Dakota. Add. 2249, % F. V. Kniest, Bee Bldg., Omaha, Neb. E

WANTED—DESIRE PRACTICE OR LOCATION (also consider position), preferably in Texas or New Mexico; graduated in 1910, University Texas; unmarried; well experienced and postgraduate work in 1914 and 1919 in medicine and surgery; speak English and Spanish; American. Add. 2241, % F. V. Kniest, Bee Bldg., Omaha, Neb. E

LOCUM TENENS WANTED

WANTED—LOCUM TENENS FOR ABOUT six weeks beginning in April, for a country practice in Wisconsin; give full particulars in first letter. Add. 8342 F, % AMA.

WANTED—LOCUM TENENS—SOUTH DAKOTA town of 1,500; practice averaging \$1,000 monthly, for three months, beginning May 1; liberal arrangements; give school, class and previous experience. Add. 8340 F, % AMA.

WANTED — LOCUM TENENS FOR EYE, ear, nose, throat practice for one to three months in Illinois; describe fully qualifications and experience and give references. Add. 8293 F, % AMA.

SITUATIONS WANTED

WANTED—POSITION AS ASSISTANT BY up-to-date eye, ear, nose, throat specialist, graduate Class A school; 2 years' study in Europe; 12 years' special practice; 3 years' army work; can do anything pertaining to specialty; best references; would buy partnership later. Add. 8348 I, % AMA.

WANTED—WITH PROMINENT EYE, EAR, nose, throat specialist, assistantship or partnership; A plus university; served internship; several years' special work; Protestant, Shriner; registered Louisiana, Mississippi; available June 1; references exchanged. Add. 8347 I, % AMA.

WANTED — PHYSICIAN AND SURGEON desires position or location; graduate Harvard Medical College; qualified in surgery and general practice; excellent references; consider position or contract or income; prices. Add. 2308, % F. V. Kniest, Bee Bldg., Omaha, Neb. I

WANTED — DETROIT, MICH., INDUS- trial affiliation by A1 plus ophthalmologist and otolaryngologist of six years' experience and study, including some original research work in above; three years in industrial work with state compensation doing the above specialties; engaged at present; will come for interview and demonstrate ability; best reasons to wish change. Add. 8343 I, % AMA.

WANTED—POSITION DESIRED BY SUR- geon or preferably a locum tenens work; also consider partnership; aged 29, well referenced and specially trained and experienced in general surgery and surgery of ear, nose and throat; speak English and understand German; unmarried; good appearance and active and energetic; graduate University of Nebraska; registered Nebraska and reciprocating states; do routine laboratory work; Wassermann test; surgical work wanted. Add. 2303, % F. V. Kniest, Bee Bldg., Omaha, Neb. I

WANTED—PHYSICIAN, GRADUATED A plus medical school, aged 31, married; hospital experience; special training in ophthalmology, laryngology, rhinology; also internal medicine; desires position as assistant, associate or institutional work in medicine or surgery, either general or special practice. Add. 8334 I, % AMA.

WANTED—POSITION IN NEVADA — A1 school, 1918; 20 months' active surgical hospital training; capable assistant and willing worker; single, high class references and reasonable salary for good future. Add. 8332 I, % AMA.

WANTED — YOUNG DOCTOR, AGED 25, single, Latin-American, graduate 1918, desires salaried position in or near New York City; 3 years' hospital training here and abroad; speaks English, Spanish and French. Add. 8331 I, % AMA.

WANTED — YOUNG CATHOLIC PHYSI- cian desires assistantship to busy surgeon; graduate Class A school; internship in large general hospital; best of references; available at once. Add. 8325 I, % AMA.

W A N T E D—GRADUATE A1 SCHOOL, seven months' hospital experience, aged 28, desires internship; university graduate literary college; married; wife graduate nurse; both desire location same hospital; southern state preferred. Add. 8322 I, % AMA.

WANTED — POSITION — SECRETARY- stenographer; three and a half years' experience with surgeon; 12 years' experience, record work, indexing, filing. Add. 8316 I, % AMA.

WANTED — EXPERIENCED PHYSICIAN desires position with industrial corporation, central states; graduate A plus school; two years' hospital experience, one year postgraduate work; aged 36, married. Protestant; no children. Add. 8315 I, % AMA.

WANTED—YOUNG LADY X-RAY TECH- nician desires position as assistant to an established roentgenologist or hospital laboratory; can do clinical laboratory work; 2 years' experience; best references. Add. 8311 I, % AMA.

WANTED—YOUNG WOMAN, 35, WOULD like position in doctor's office; experienced stenographer and bookkeeper, executive ability, initiative. H. M. H. % The Rochester, 519 W. 123d St., New York, N. Y. I

WANTED — EXPERIENCED PATHOLO- gist, bacteriologist, serologist and tissue diagnostician desires connection with hospital or clinical group, preferably in east; MD.; A1 university; also A.B., A.M.; late major A. E. F.; experienced executive; competent to direct or install laboratory, prepare material, Wassermann, etc.; now director hospital laboratory; state salary and full details. Add. 8040 I, % AMA.

(Continued on next page)

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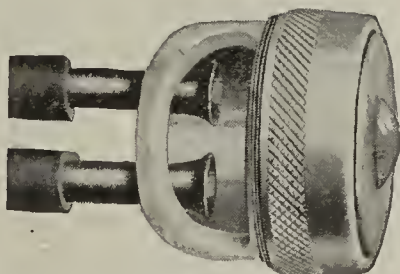
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Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE PUBLIC SCHOOL SYSTEM OF MEMPHIS, TENNESSEE. Report of a Survey Made Under the Direction of the Commissioner of Education. Department of the Interior, Bureau of Education, Bulletin, 1919, No. 50, in seven parts. Part Seven, Health Work. Paper. Price, 10 cents. Pp. 45. Washington: Government Printing Office, 1920.

INJURIES TO THE HEAD AND NECK. By H. Lawson Whale, M.D., F.R.C.S., Capt. R.A. M.C. (T.F.) Preface by Colonel Frederick F. Burghard, C.B., M.D., M.S. Cloth. Price, \$5. Pp. 322, with illustrations. New York: Paul B. Hoeber, 1919.

CAN THE CHURCH SURVIVE IN THE CHANGING ORDER? By Albert Parker Fitch, Professor of the History of Religion in Amherst College. Boards. Price, \$1. Pp. 79. New York: The Macmillan Company, 1920.

CONTRE LA VACCINATION. Compte rendu du retentissant procès du Dr. Carlo Ruata, et de son asquitement. Paper. Pp. 39. Quebec: Raoul Renault, 1920.

PROCEEDINGS OF THE THIRTY-FIFTH ANNUAL CONVENTION OF THE MINNESOTA STATE PHARMACEUTICAL ASSOCIATION, 1919. Paper. 1919.

THIRD ANNUAL REPORT OF THE STATE DEPARTMENT OF HEALTH OF MASSACHUSETTS, 1917. Cloth.

(Continued from preceding page)

WANTED — ASSISTANTSHIP TO SURGEON or hospital position by young surgeon with three years' active surgical training in New York City; gilt-edge references; south preferred; available at once. Add. 8170 I, % AMA.

WANTED — POSITION IN PHYSICIAN'S office; 5 years' experience in prescription work and assisting in minor office surgery; can keep books, do typewriting; references. Add. 8270 I, % AMA.

WANTED—PHYSICIAN, AGED 25, GRADUATE A plus school, 1917; 30 months' hospital, including pathology, surgery, surgical specialties, medicine, neurology and psychiatry; licensed Pennsylvania; refined personality and appearance; perfect health; hustler; any strictly ethical medical, surgical or neurological opening affording high grade professional work considered. Add. 8267 I, % AMA.

WANTED—POSITION DESIRED BY PHYSICIAN and exceptionally experienced and trained surgeon; desire position with industrial concern or physician or consider partnership; aged 35, married. For further particulars add. 2278, % F. V. Kniest, Bee Bldg., Omaha, Neb.

WANTED—POSITION AS ASSISTANT TO busy physician in general practice in Washington, Michigan or reciprocating state by graduate of Class A plus university; correspondence invited. Add. 8003 I, % AMA.

WANTED—ASSISTANTSHIP BY WOMAN physician in eastern state hospital, formerly army contract surgeon; 15 years' general practice; 15 months in clinical psychiatry; graduate Class A; reciprocity Iowa; aged 50. Add. 8264 I, % AMA.

WANTED — LOCUM TENENS WORK from April 10 to July 1 in Iowa or reciprocating states by graduate of A1 school. Add. 8254 I, % AMA.

WANTED—HOSPITAL ADMINISTRATOR desires position on administration staff of Class A hospital in desirable locality; interested in reorganization; commands services of experienced nursing assistants; graduate 1908 Class A college; married. Add. 8295 I, % AMA.

WANTED—POSITION BY WOMAN PHYSICIAN, graduate A plus school; experience in routine laboratory work, bacteriology and serology; 3 years' tuberculosis service; also general hospital work; references; state salary. Add. 8290 I, % AMA.

WANTED—POSITION OR PARTNERSHIP by physician; 34 years, single; 10 years' experience medicine and surgery; speak Spanish and English; part or whole time; can come at once. Add. 8167 I, % AMA.

WANTED—POSITION DESIRED BY PHYSICIAN doing general practice and some general surgery; also consider locum tenens work; registered in Nebraska; graduate Creighton Medical College; aged 35, married; good appearance; graduated 1908. Add. 2280, % F. V. Kniest, Bee Bldg., Omaha, Neb.

WANTED—ASSISTANTSHIP TO WELL-established surgeon by graduate A school, internship and a year general practice; southwestern state preferred; salary \$200 to start and future possibilities. Add. 8224 I, % AMA.

WANTED — PATHOLOGIST, M.D., 12 years' experience in autopsies, histopathology, bacteriology, serology, biological chemistry and roentgenology, now director of a large hospital laboratory, desires to make a change; hospital or large clinical laboratory considered; state details and salary. Add. 8139 I, % AMA.

WANTED—SITUATION BY CLINICAL DIAGNOSTIC laboratory technician, serologist, registered pharmacist and x-ray operator, with hospital or group of physicians to operate above named (3 departments) without supervision. Add. 8142 I, % AMA.

WANTED—YOUNG PHYSICIAN DESIRES assistant with busy scientific, ethical surgeon; graduate Grade A school; internship in large general hospital; can furnish best of references. Add. 8149 I, % AMA.

WANTED — POSITION, PREFERABLY state insane; B.S., M.D.; A school, 1913; 3 years' institutional work; large general service; one year state insane; 6 months large tuberculosis service; 1 year army; examiner surgical section; aged 31; Gentile; married, one child; now employed assistant general practitioner; desire better environment with opportunity for growth; clean and ethical; one month's notice necessary to change; licensed by examination North Carolina and Wisconsin. Add. 8229 I, % AMA.

WANTED — POSITION AS CHIEF RESIDENT in general hospital by graduate of A plus school, who had 5 years' hospital experience and 2 years' association with prominent surgeon; aged 32. Add. 8216 I, % AMA.

WANTED—POSITION — STENOGRAPHER —Expert; university woman; 4 years secretary to statesman; ten years Wall St.; four years physicians' secretary; accounting, indexing, filing; mornings only, \$20 per week, or part time, mornings or evenings, \$1.25 per hour. Stenographer, 156 East 37th St., New York City.

WANTED—JUNE 1—ASSISTANTSHIP OR partnership to busy physician in general practice, contract practice, locum tenens or good location any state reciprocating with Illinois; registered Minnesota and Missouri also; will sell established business, North Dakota, with office fixtures; good location; averages \$350 per month; too cold here for me. Add. 8232, I, % AMA.

WANTED — ASSISTANTSHIP WITH A1 surgeon or physician; speak English, German; aged 45; married; graduate Chicago; postgraduate abdominal surgery; gynecology abroad; hospital, general practice, large operative surgery experience; radiant, Quartz, electro-, hydrotherapy; massage; laboratory; best references; begin \$250, where good work secures future. Add. 8194 I, % AMA.

WANTED — ASSISTANTSHIP TO G.U. specialist with hospital advantages preferred; Class A school, college degree, regular internship; 9 months' G.U. experience; single, aged 31. Add. 8200 I, % AMA.

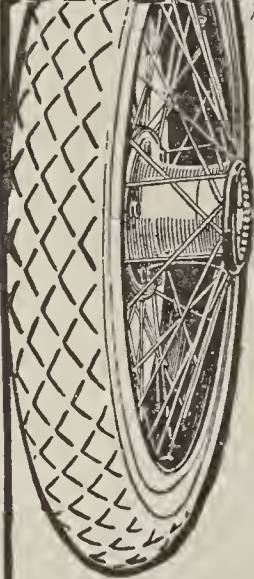
WANTED—BY OBSTETRICIAN — POSITION or location; aged 39; single; graduate A plus school; 17 years' hospital and private obstetrical practice; have taught clinical obstetrics; proposition must be highly ethical; highest references. Add. 8172 I, % AMA.

NURSES LOCATIONS WANTED

NURSES—WRITE F. V. KNIEST, R. P., Omaha, Neb., for permanent position, any kind work anywhere U. S. Gilt-edge references.

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31 x 3½	13.10	14.40 3.30	35 x 4½	28.20	30.70 5.70
32 x 3½	14.30	16.20 3.40	36 x 4½	28.60	31.15 5.90
34 x 3½	15.10	16.70 4.15	37 x 4½	32.65	35.60 6.70
31 x 4	18.30	20.75 4.25	35 x 5	30.90	33.80 6.95
32 x 4	18.70	21.10 4.35	36 x 5	33.55	36.75 7.65
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(Continued on next page)

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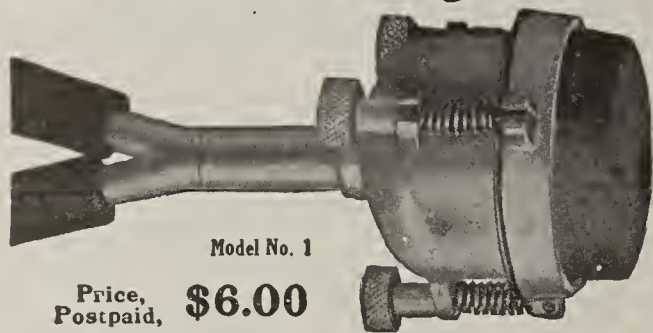
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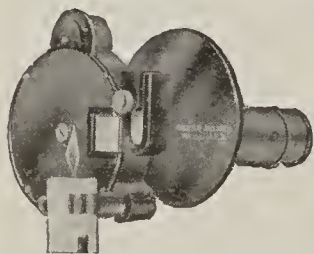
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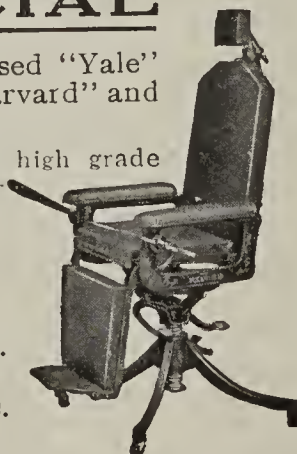
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(Continued on page 34)

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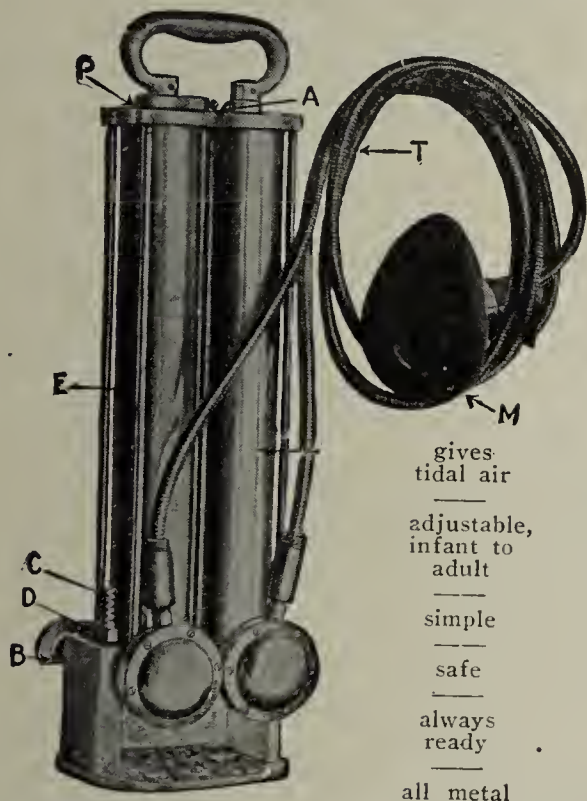
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(Continued from page 32)

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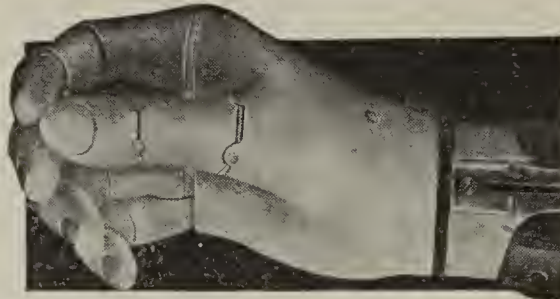
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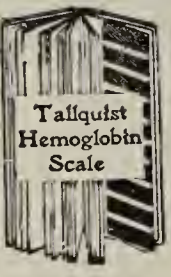
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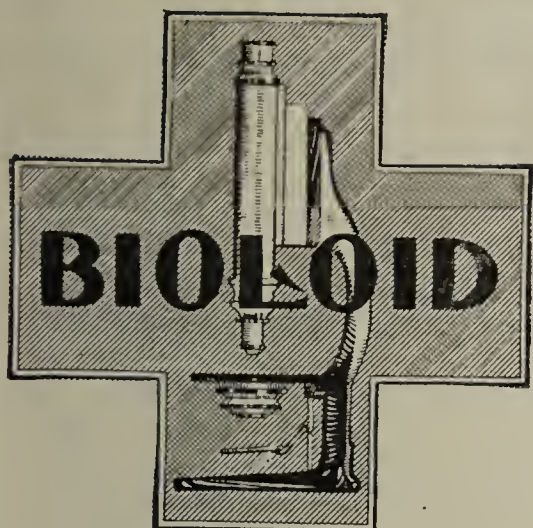
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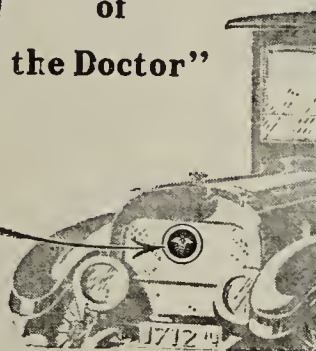
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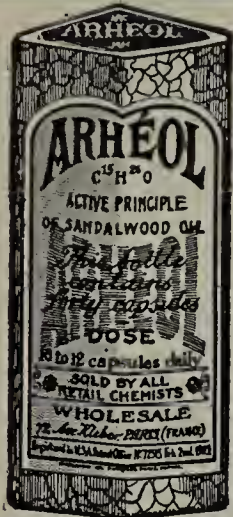
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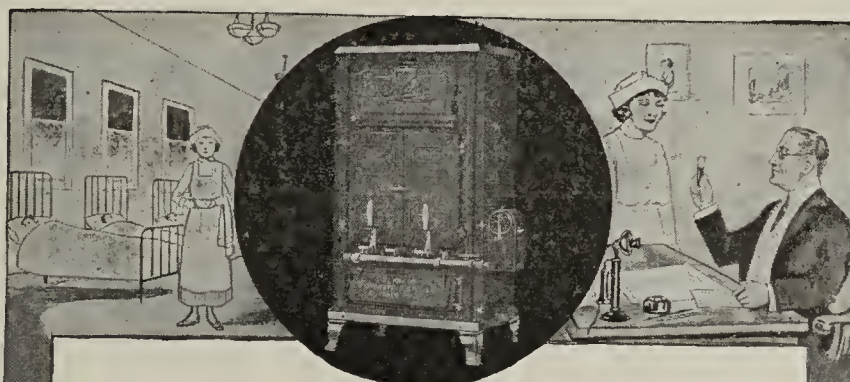
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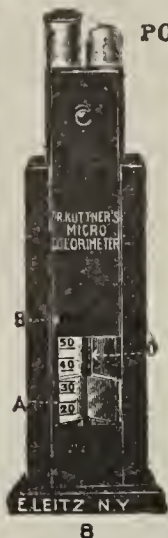
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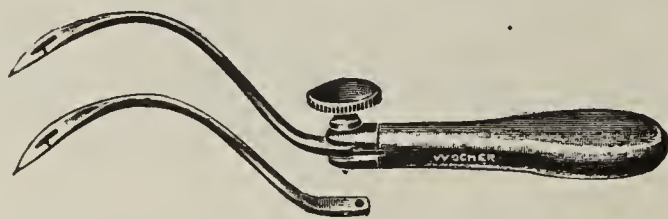
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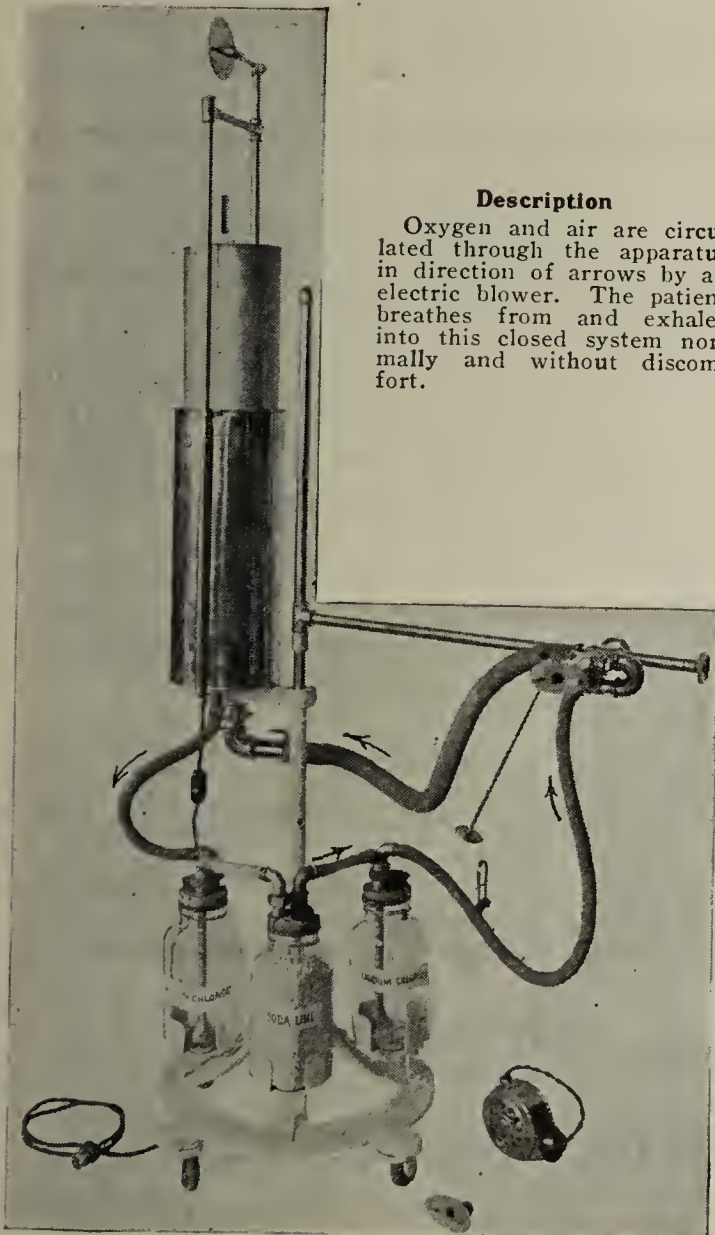
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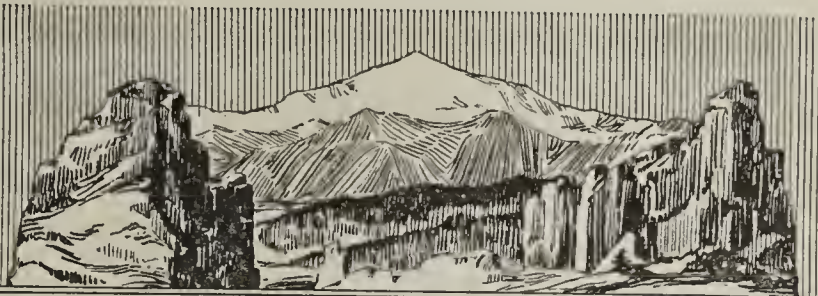
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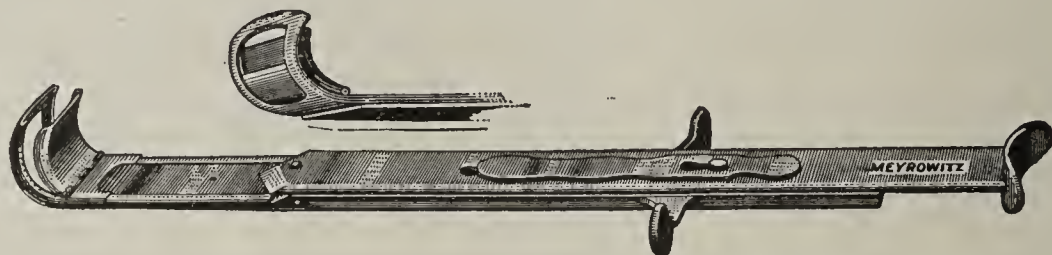
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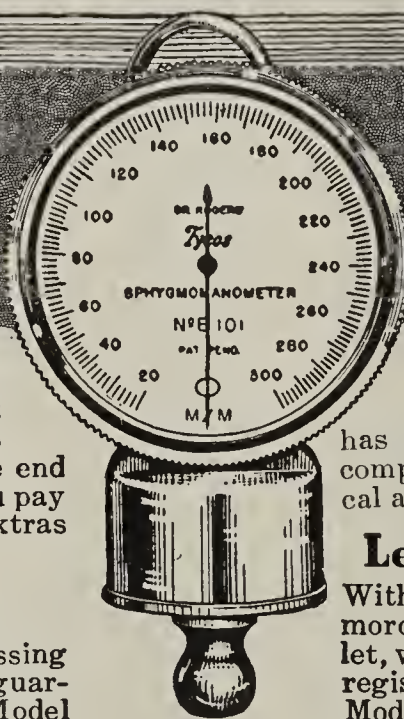
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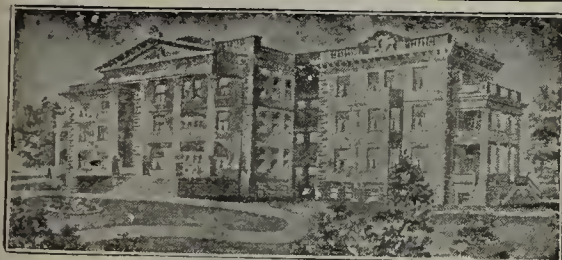
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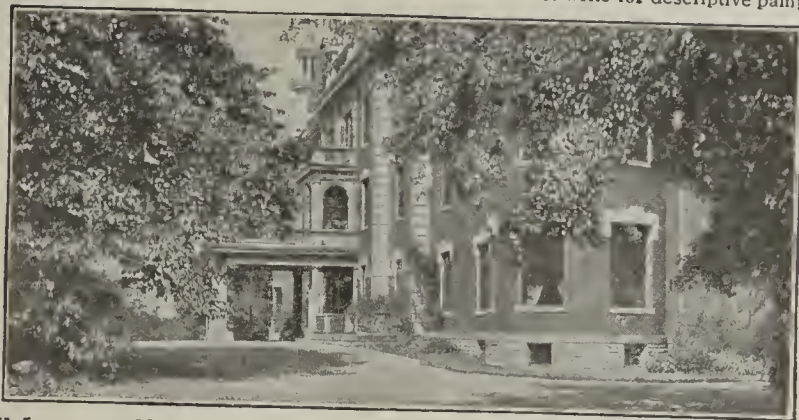
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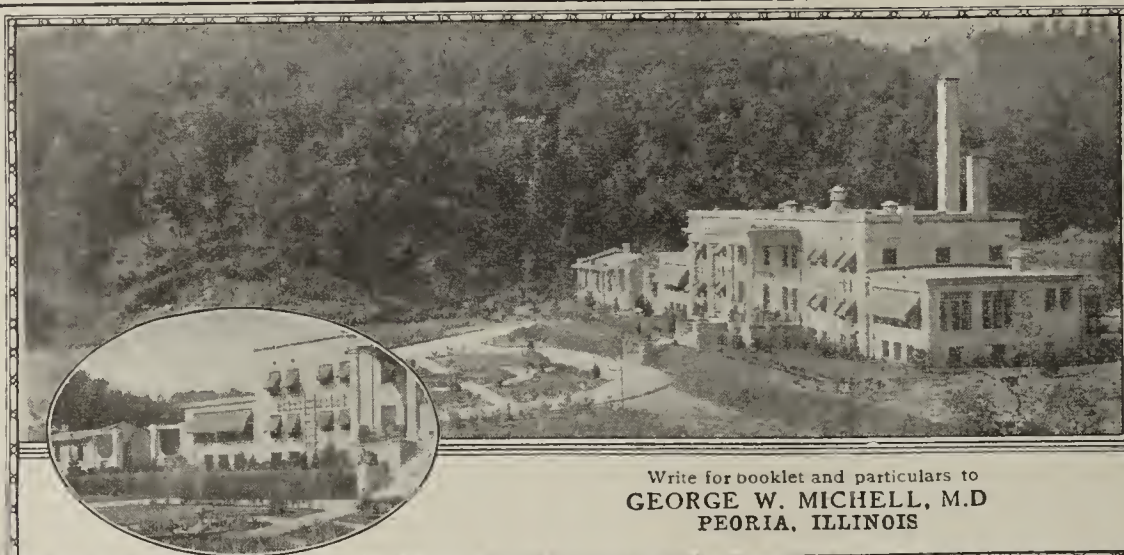
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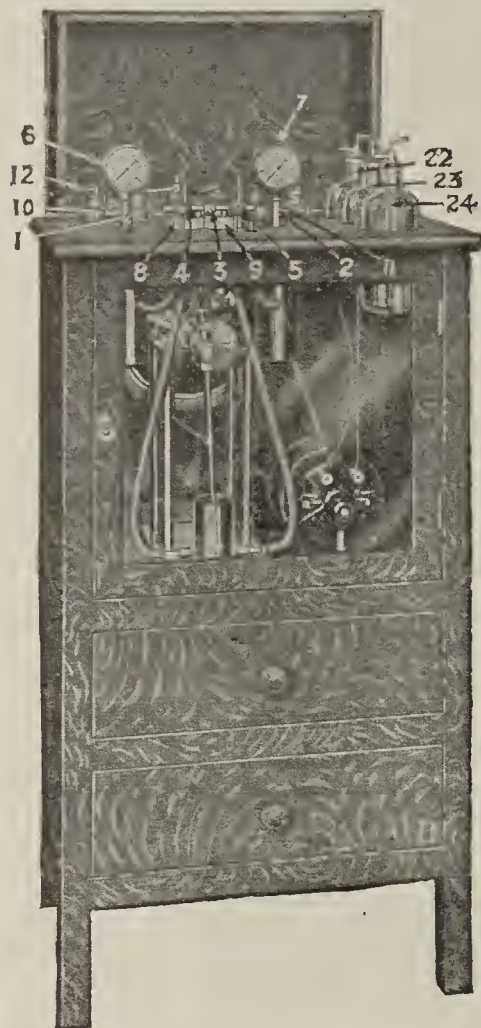
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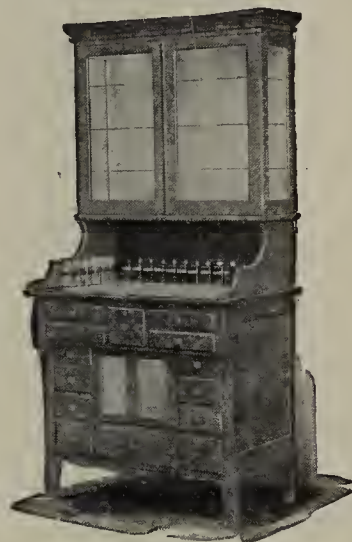
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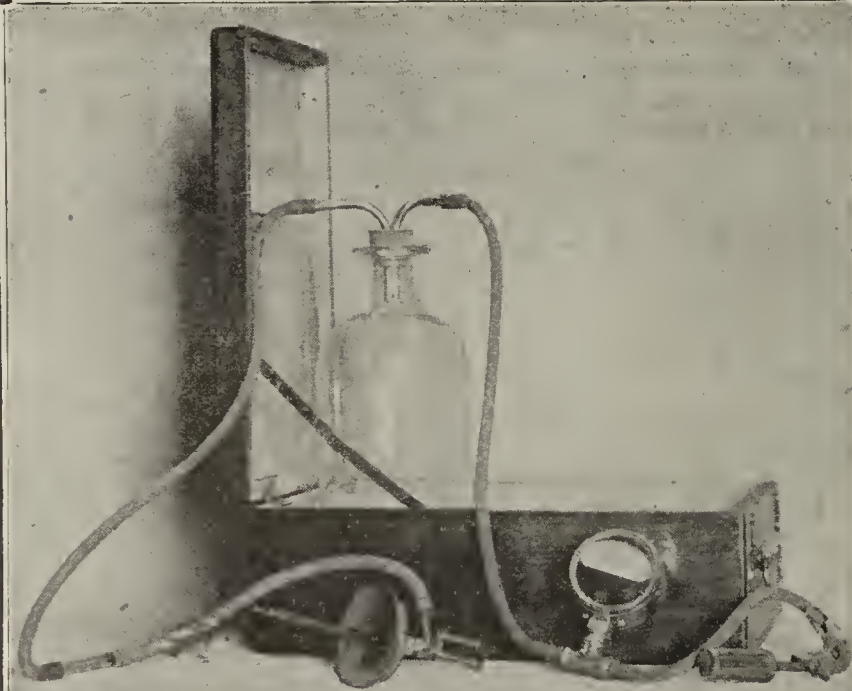
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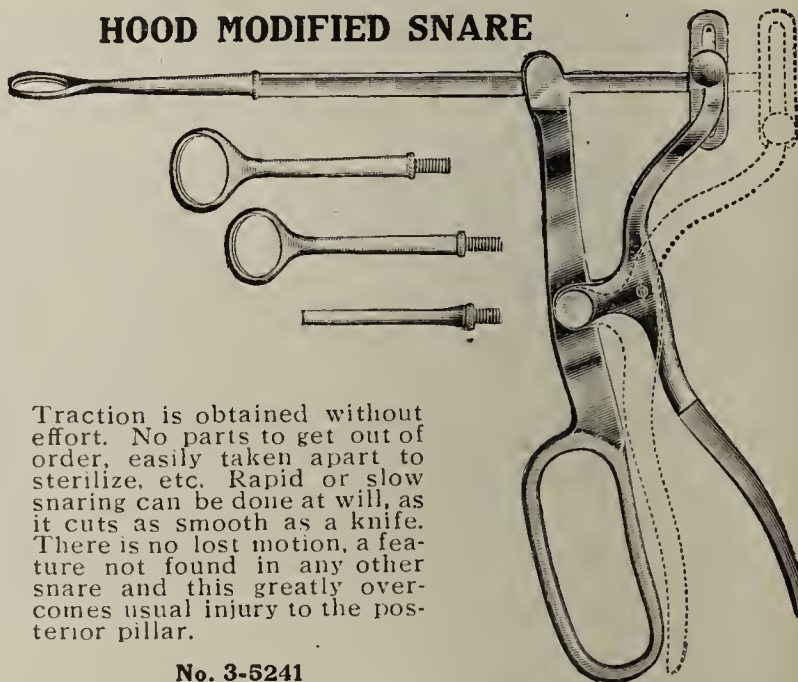
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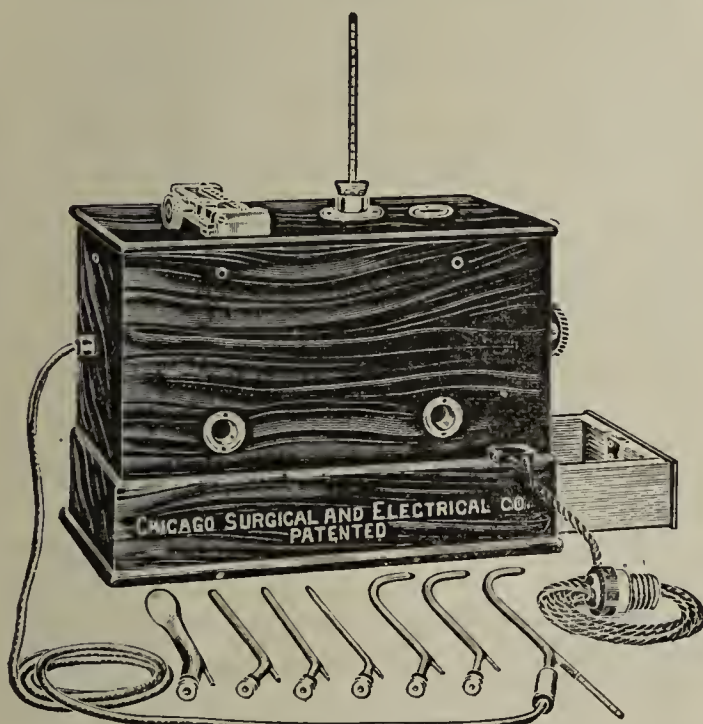
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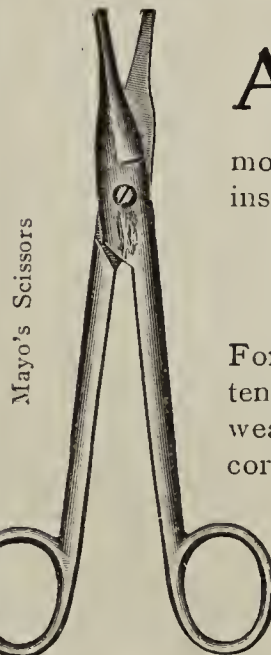
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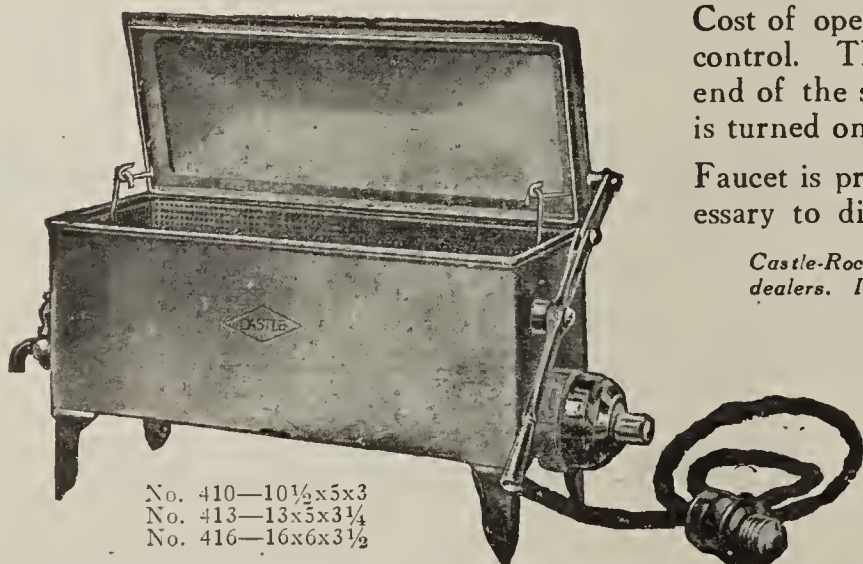
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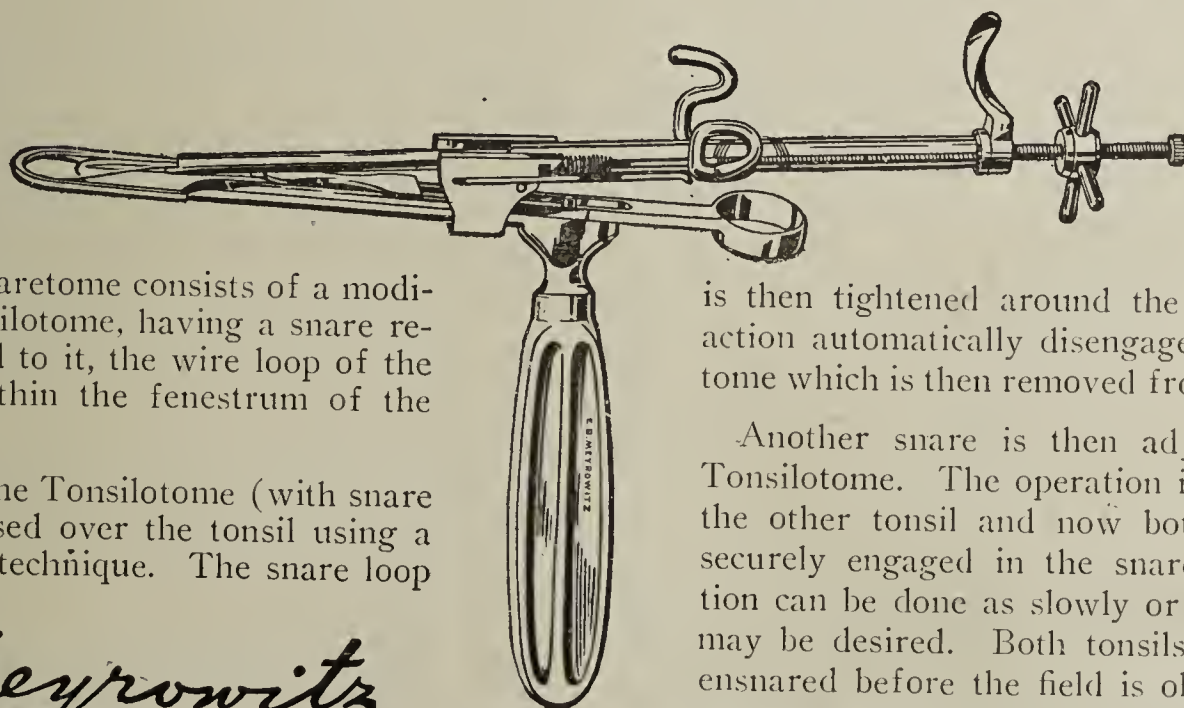
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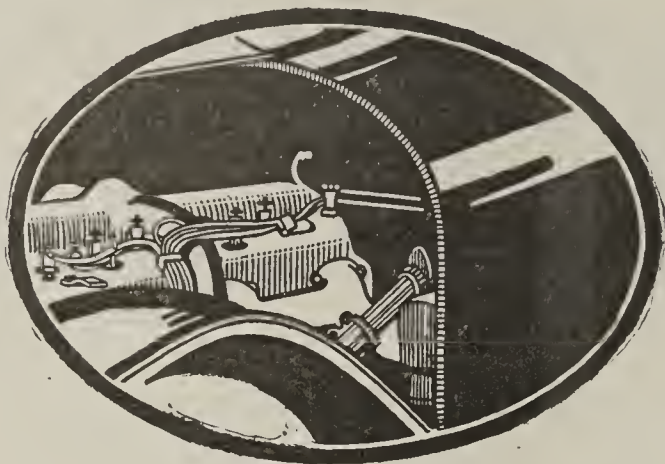


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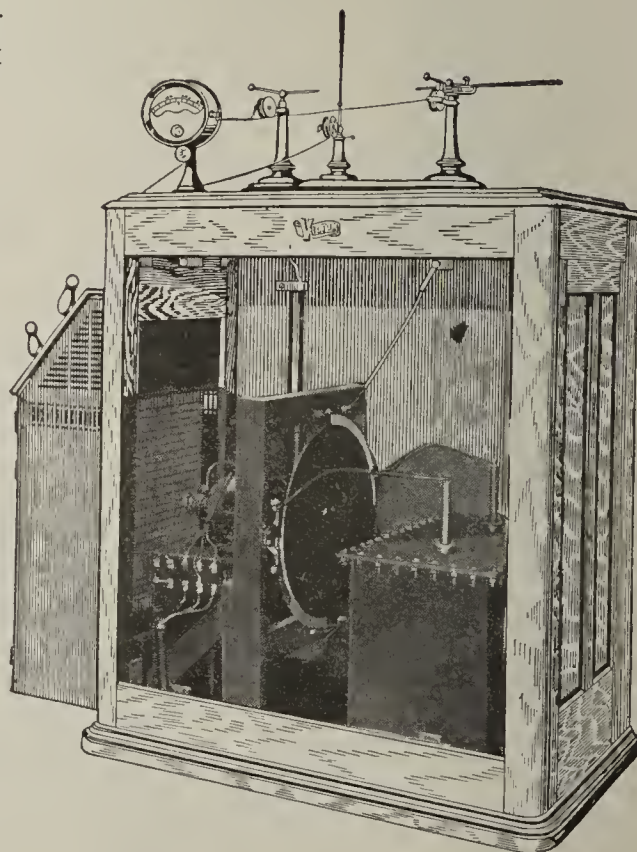
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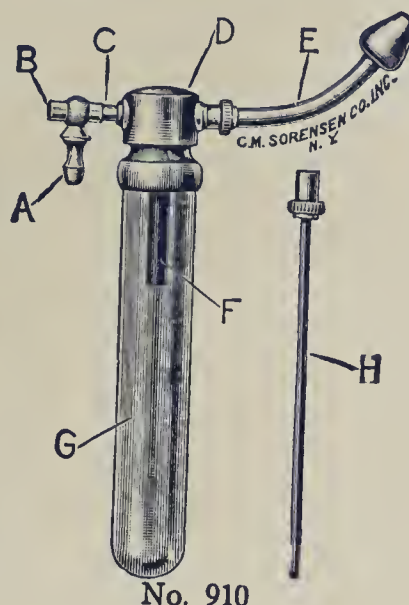
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Dear Sir:

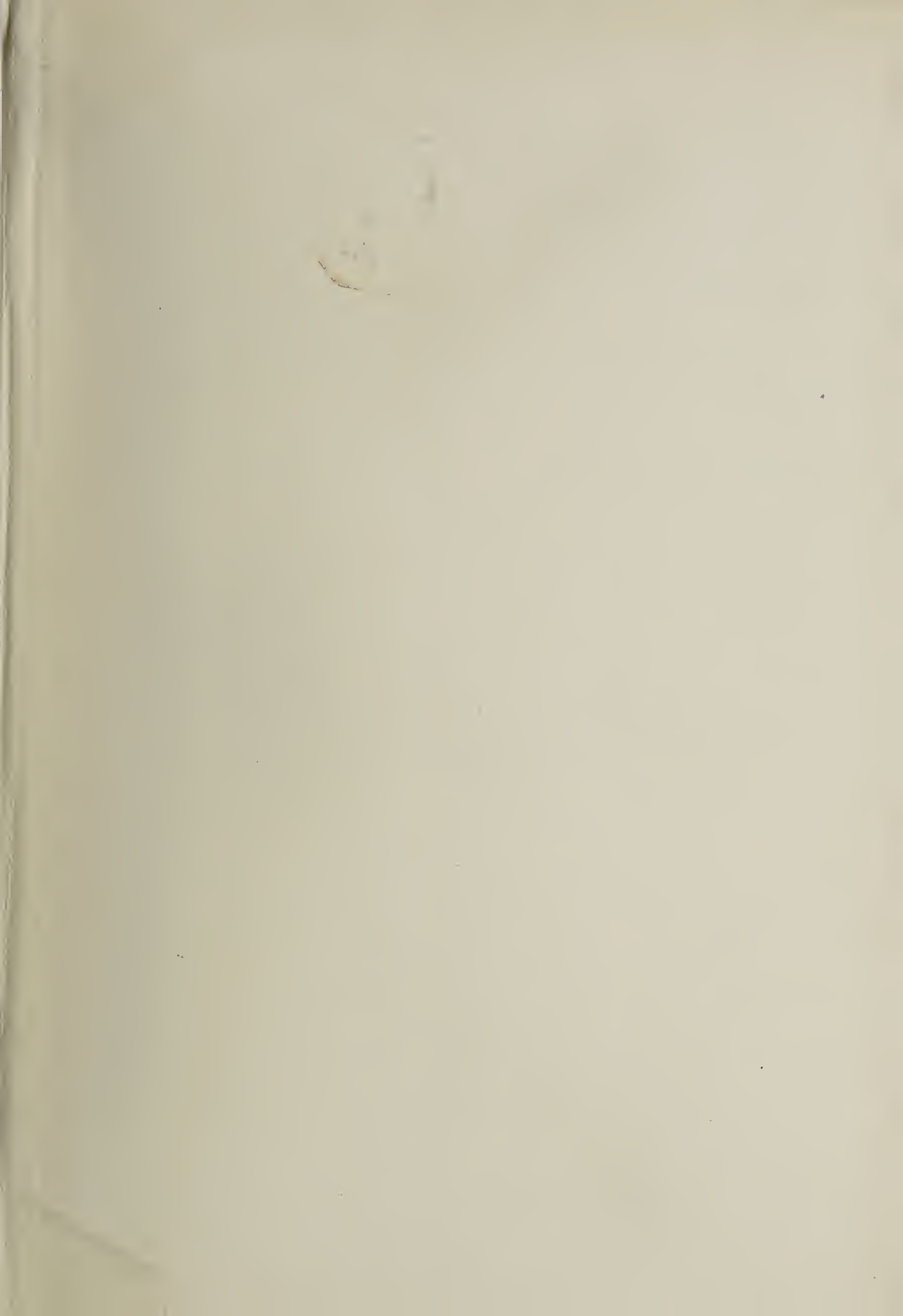
I have been retained by Mr..... to bring proceedings for malpractice for the death of their baby, who died on May 10th, 1919, as the result of an operation performed by you. Kindly call and see me. I remain,
Yours very truly,

(Signed).....Attorney.

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